

Approaching the Double Carbon

Rui Wang

North China Electric Power University, Baoding, China

Abstract: At present, China's economy has shifted from a high-speed growth stage to a high-quality development stage, and low-carbon environmental protection and green development is the proper meaning of high-quality development. This paper briefly introduces double carbon from three aspects: the profound meaning behind the "double carbon" goal, the opportunities and challenges faced by the "double carbon" goal, and the contribution of the "double carbon" goal to youth power, so as to enable more people to approach the "double carbon", understand the "double carbon" and promote the development of the "double carbon".

Keywords: Dual carbon, Green ecology, Technological revolution and industrial change.

1. Approaching the Double Carbon

Dual carbon, short for carbon peak and carbon neutral. [1] "China will increase its nationally determined contribution, adopt more effective policies and measures, strive to peak carbon dioxide emissions by 2030, and strive to achieve carbon neutrality by 2060." This is a solemn commitment made by General Secretary Xi Jinping at the seventy-fifth United Nations General Assembly on 22 September 2020 (referred to as the '3060' dual carbon target). The '3060' dual-carbon target has become one of the key tasks in China in the next few decades. The low-carbon era is about to detonate a new round of industrial revolution. Millions of billions of billions of dollars of investment will drive multiple areas, including energy systems, to transition to green low-carbon. It will reshape the Chinese economy and profoundly affect and comprehensively transform many industries and enterprises.

Carbon peak (peak carbon dioxide emissions) means that at a certain point, carbon dioxide emissions no longer increase to peak, and then gradually fall back.[2] Carbon peak is the historical turning point of carbon dioxide emissions from increase to decrease, marking the decoupling between carbon emissions and economic development. The goal of carbon peak includes peak years and peaks. [3]

Carbon neutrality refers to the total amount of carbon dioxide or greenhouse gas emissions directly or indirectly generated by countries, enterprises, products, activities or individuals within a certain period of time. Through afforestation, energy conservation and emission reduction, it offsets the carbon dioxide or greenhouse gas emissions generated by itself to achieve positive and negative offsets and achieve relative "zero emissions".[4]

The "Dual carbon" strategy advocates a green, environmentally friendly and low-carbon lifestyle. Accelerating the pace of reducing carbon emissions will help guide green technology innovation and improve the global competitiveness of industries and economies. China continues to push forward the adjustment of its industrial structure and energy structure, vigorously develops renewable energy, accelerates the planning and construction of large-scale wind power photovoltaic base projects in desert, Gobi, and desert regions, and strives to take into account economic development and green transformation at the same time.

2. The Profound Meaning Behind the "Double Carbon" Goal

On the one hand, "Dual carbon" is conducive to the realization of high-quality economic development. The collision of the green and low-carbon economy that has begun to take shape and the accelerating digital economy has pointed out a new direction for the construction of a new development pattern, and also put forward new requirements for the high-quality and sustainable development of enterprises. Carbon peaking and carbon neutrality are included in the overall economic and social development. Enterprises must actively adapt to the requirements of green and low-carbon development. Carbon emission reduction has become a driving factor for enterprises' green and low-carbon transformation. Those who are at the forefront of the industry will gain the advantage of future market competition. "The Commanding Heights".

Dual carbon will reshape all industries and all businesses. As an indispensable key element in future market economic activities, carbon will be integrated into the entire life cycle of the enterprise industrial chain and product value chain. When the enterprise obtains the advantage of carbon emission reduction, the abundant carbon emission allowance will also bring the most promising benefits to the enterprise. It can be said that whoever has the leading carbon emission reduction capability first will form a new competitive advantage.

On the other hand, "Dual carbon" is conducive to promoting the improvement of the ecological environment. By greatly improving energy utilization efficiency and vigorously developing non-fossil energy, gradually get rid of the dependence on fossil energy, and support my country's economic and social development and the improvement of residents' living standards with lower energy consumption and cleaner energy, which is forcing a clean energy transition. At the same time to ensure the security of my country's energy supply.

In recent years, China has vigorously promoted the adjustment, transformation and upgrading of its energy structure. The energy production structure has shifted from coal-based to diversified, and the energy consumption structure has become increasingly low-carbon. The National Ecological Civilization Pilot Zone represented by Guizhou accelerates the promotion of energy conservation,

consumption reduction and green development through the "subtraction" of carbon emissions through changes in the energy structure. Photovoltaic bases have created jobs for farmers, increased land transfer income, and achieved energy conservation and emission reduction.

Over the years, based on ecological advantages, Sanming has protected and utilized mountain water resources according to local conditions. Explore a road of coordinated development of ecological environment protection and social economy and people's livelihood.

3. Opportunities and Challenges Facing the "Two-carbon" Goal

In recent years, focusing on the goal of low-carbon development and transformation, my country's scientific and technological circles and industrial circles have actively deployed a series of new technologies and achieved many valuable results. In the past 10 years, thanks to technological progress, the cost of wind and photovoltaic power generation has been greatly reduced, gradually entering the era of parity, and wind power and photovoltaics have entered thousands of households. Technologies such as clean utilization of coal and coal-to-olefins process promote the green and low-carbon transformation of coal, and improve the efficiency and economic value of coal. The integration of digital technologies such as big data and artificial intelligence with transportation, logistics, construction and other fields makes people's life and travel more green.

In practice, it is not only required to reduce the carbon emission level of various sectors, but also to take measures such as afforestation, negative carbon emission technologies and carbon offsets to offset carbon emissions. Carbon reduction will become an important theme of economic and social development. Efficient utilization of resources and green and low-carbon development will become the basic path of economic and social development. The industrial chain is being reshaped, and more "green and low-carbon" emerging technologies, industries and businesses are being born. model, and promote profound changes in the production process and technical route of traditional industries, forcing China to speed up the transformation of its development mode, take a green development path with low energy consumption, low pollution, and high quality, and accelerate the construction of a green and low-carbon economic system. This means that the production methods and lifestyles of the whole society will undergo important changes, and we will usher in a broad and profound economic and social change.

It should be said that the "3060" dual carbon goal will become an important driving force for my country's economy to achieve sustainable development in the next 40 years or even longer, and it is expected to contribute 2% to the average annual GDP growth. my country will transform from coal, oil, natural gas and other fossil energy accounting for 70% of energy consumption to clean energy dominated by solar energy, wind energy, hydropower, nuclear energy, hydrogen energy, etc. influences. In a sense, the impact of the "3060" dual-carbon goal on China's economic and social development may exceed that of China's entry into the WTO and the process of urbanization.

However, my country has only a 30-year transition period from carbon peak to carbon neutrality. In order to achieve the "dual carbon" goal on the basis of sustainable economic and social development, my country's low-carbon development

transformation task is extremely arduous. To meet the challenges, the whole society expects science and technology to make greater achievements. Achieving carbon peaking and carbon neutrality is a wide-ranging and profound economic and social transformation, which is by no means easy to achieve.

The dual-carbon goal means subverting the fossil fuel-based energy consumption structure since the Industrial Revolution, and requires the creation of new industries and industrial profit models. Reconstructing the energy system and related infrastructure based on fossil energy is a process of reorganization of interests, which is a major challenge in terms of technology, economy and society. my country's urbanization process is still advancing, and cities in the expansion period still need to build and renovate large-scale infrastructure. It is difficult to effectively control carbon emissions.

The promotion and application of advanced and applicable technologies is a breakthrough. Some high-carbon emission industries have large industrial scales, high technology and equipment update costs, and lack of motivation to use green technologies to replace them. It is necessary to play a leading role in demonstration and promote the promotion of green technologies in a step-by-step manner. At present, technologies such as green hydrogen energy preparation and anthropogenic carbon sequestration are still immature, and it is urgent to combine applicable scenarios, through demonstration and promotion, to do a good job in cutting-edge technology reserves and large-scale application exploration. In addition, carbon neutrality is a global consensus on sustainable development. We should seize this opportunity for international cooperation and participate in the global green technology R&D layout.

4. The "Dual carbon" Goal Contributes Youth Power

In order to achieve the "dual carbon" goal, colleges and universities in different places are also exploring different paths. Future Institute of Technology Carbon Neutral Future Institute of Technology will focus on several major directions in the future. One is energy storage science and engineering. Energy storage is a technology that stores different forms of energy such as electrical energy, chemical energy, thermal energy, and mechanical energy, and then converts it into the required energy form for use. It involves energy dynamics, physics, chemistry, materials, electricity, electricity and other disciplines. The second is carbon storage science and engineering. To achieve carbon neutrality, carbon dioxide needs to be converted and utilized, and it will also spawn new industries such as carbon capture, carbon transportation, carbon flooding, carbon sequestration, and carbon products, which also require compound talents. The third is to change the application mode of traditional energy, such as the development of green electricity and green hydrogen technology for traditional chemical industry.

The school holds high the banner of serving the "Dual carbon" goal, focusing on research directions such as new energy, energy Internet, energy storage and hydrogen energy, carbon finance, carbon management, etc., deeply serving the "Dual carbon" goal, and making every effort to create a source of innovation in the field of clean and low-carbon energy. , continue to lead the transformation of disciplines and majors, personnel training and upgrading, and technological

innovation and development, and promote the high-quality development of the school to continuously increase speed and efficiency.

On October 7, CCTV ' s ' News Broadcast ' program reported that science and technology workers adhered to the post of scientific research during the National Day. Cui Peng, a teacher of the New Energy College of North China Electric Power University, was interviewed to introduce the specific circumstances of his work. As young people, we can promote the development of new energy, promote the optimization strategy of energy efficiency and promote the development of green energy, give full play to our own advantages, summarize the current situation of energy development, and strive to be the advocates of the “ double carbon ” goal, so that energy conservation and emission reduction can be deeply rooted in the hearts of the people and green low carbon can become a consensus. We should strive to be a practitioner of the " dual carbon " goal, make saving a habit, and practice the concept of green development with practical action ; to strive for the " dual carbon " goal of the struggle, in the " dual carbon " goal to achieve the courage to struggle, dare to practice, with the aspirations of youth to lead the Chinese dream.

At present, the world is going through a new round of

technological revolution and industrial transformation. Developed countries and regions are actively deploying green energy, low-carbon industries, and clean technologies. Carbon peaking and carbon neutrality have become a new track for global scientific and technological innovation. In this transformative competition on the same stage, we should seize the opportunity, work hard, and strive to be the vanguard of technological innovation.

References

- [1] The Ministry of Industry Information Science and Technology of China Electric Power Construction Hydropower Development Group Co., Ltd. establishes a ' dual-carbon ' working leadership group, which will establish a key project on ' research and demonstration of key technologies for carbon neutralization '. China Electric Power Construction 2021-03-12.
- [2] What are ' carbon peak ' and ' carbon neutralization ' ? CCTV.2020-12-23.
- [3] Daily | Carbon Peak Peaks of 2D Carbon Emissions. China Daily.2021-01-04.
- [4] The road map of carbon neutralization determines that the driving force of automobile enterprises is changing. Xinhua Network.