# Liu Zhongmin, member of the committee: several years of work for "green energy" advice and suggestions

**China's energy science and technology innovation capacity has been significantly improved, industrial development capacity continues to strengthen, the energy system in clean, low-carbon, safe and efficient and other aspects have made great progress. But in the current complex international situation and the background of global climate change, China's energy sector is facing more complex and more serious challenges.**

The clean energy development of coal instead of oil is the direction that Liu Zhongmin and his team have been exploring for decades. They have developed the methanol-to-olefin technology with independent intellectual property rights, which supports the construction of the world's first industrialized methanol-to-olefin plant and has created a strategic new industry of hundreds of billions of yuan for the country.

Energy is closely related to global climate change, and the energy issue is also a common problem faced by all human beings. The energy structure globally is in a critical period of old and new energy transition from high carbon to low carbon and carbon free. The energy revolution, industrial revolution, science and technology revolution and artificial intelligence are overlapping and promoting, forming a new wave of systemic


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change in the whole society. China's energy science and technology innovation capacity has been significantly improved, industrial development capacity continues to strengthen, the energy system in clean, low-carbon, safe and efficient and other aspects have made great progress. But in the current complex international situation and the background of global climate change, China's energy sector is facing more complex and more serious challenges.

Under the premise of keeping the bottom line of energy security and safeguarding "the rice bowl of energy must be in our own hands", we should actively promote international cooperation in energy under the concept of global community of destiny. First, strengthen energy science and technology innovation and international cooperation, and promote global energy green and low-carbon development. Strengthen strategic energy research, basic energy research and cross-fertilization between energy and big data, artificial intelligence and other fields. Strengthen international scientific and technological cooperation in the fields of hydrogen energy, energy storage, nuclear energy, smart energy, etc., and take the initiative to integrate into the global clean energy technology innovation network. Second, "One Belt and One Road" as the basis, deepen international cooperation in energy. Actively play the "Belt and Road" energy partnership system advantages, policy exchanges and coordination, scientific and technological innovation cooperation, talent training and capacity building. Actively play the role of the "Belt and Road" international scientific organizations, such as the Union of International Scientific Organizations, to promote the international scientific programs and large scientific projects in the field of carbon dioxide and carbon neutral, while exploring the mode of exporting China's advantageous energy technologies in countries along the "Belt and Road". Third, build a foreign energy discourse system with Chinese characteristics and actively participate in global energy governance. Strengthen cooperation with the International

Energy Agency, the G20 and other organizations to enhance the international energy discourse. Strengthen multilateral cooperation mechanisms and actively integrate into the reform process of global energy governance mechanisms. To achieve carbon peak carbon neutral, should use fossil resources, especially coal resources, adhere to the clean and efficient use of coal road, play a good coal to ensure energy security ballast, stabilizer role.

In recent years, China's clean and efficient use of coal technology is very fruitful, and continue to promote the transformation of coal from fuel to fuel and raw material coupling, some of the technology has been in the forefront of the world. Our team spent 10 years to carry out scientific and technological research and development of 500,000 tons / year coal-based ethanol industrial demonstration project completed and mid-term delivery. This project is of great significance to the clean utilization of coal to produce ethanol and achieve mass production, which is important to guarantee national energy security and food security, as well as to achieve the goal of peak carbon neutral carbon.

In building a new energy system and promoting the green transformation of energy, we should strengthen the top-level design of the overall situation and build a medium- and long-term energy development roadmap that is compatible with the goal of achieving carbon neutrality; build a new system of multi-energy integration energy and promote comprehensive upgrading of industrial structure; strengthen original innovation and make efforts to break through the key technology bottleneck of coal chemical industry; play a typical regional comprehensive demonstration role and form a new pattern of low-carbon development with a point.

This year is Liu Zhongmin's sixth year as a

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member of the National Committee of the Chinese People's Political Consultative Conference (CPPCC), and every year he has made suggestions for China's energy issues. 2018, he submitted his first proposal to fulfill his duties - "Promote the export of China's complete sets of energy chemical technology and equipment", suggesting that energy chemical technology be built as China's overseas technology export following high-speed rail and nuclear energy "the third business card"; in 2019, he suggested promoting the construction of a new national energy system with scientific and technological innovation, and promoting the landing of national laboratories in the energy field as soon as possible; in 2020, he suggested concentrating on the demonstration of multi-energy integration in typical regions, such as taking Yulin City in Shaanxi Province as a pilot to create a national demonstration zone for energy revolution innovation; in 2021 In 2021, he called for the systematic layout of cross-sectoral areas, breakthroughs in key core technologies, and accelerating the formation of a technology system to fully support China's goal of "double carbon"; last year, Liu Zhongmin also submitted a proposal on the establishment of a national special innovation fund for disruptive technologies, which provides a comprehensive framework for the implementation of the "double carbon" strategy. Last year, Liu Zhongmin submitted a proposal on the establishment of a national special innovation fund for disruptive technologies, giving voice to the significance and promotion of the "double carbon" strategy.

Under the premise of keeping the bottom line of energy security and guaranteeing that "the rice bowl of energy must be in our own hands", we should actively promote international cooperation in energy under the concept of global community of destiny. First, strengthen energy science and technology innovation and international cooperation, and promote global energy green and low-carbon development. Strengthen energy strategy research, basic energy research and cross-fertilization between energy and big data, artificial intelligence and other fields. Strengthen international scientific and technological cooperation in the fields of hydrogen energy, energy storage, nuclear energy, smart energy, etc., and take the initiative to integrate into the global clean energy technology innovation network. Second, "One Belt and One Road" as the basis, deepen international cooperation in energy. Actively play the "Belt and Road" energy partnership system advantages, policy exchanges and coordination, scientific and technological innovation cooperation, talent training and capacity building. Actively play the role of the "Belt and Road" international scientific organizations, such as the Union of International Scientific Organizations, to promote the international scientific programs and large scientific projects in the field of carbon dioxide and carbon neutral, while exploring the mode of exporting China's advantageous energy technologies in countries along the "Belt and Road". Third, build a foreign energy discourse system with Chinese characteristics and actively participate in global energy governance. Strengthen cooperation with the International Energy Agency, the G20 and other organizations to enhance the international energy discourse. Strengthen multilateral cooperation mechanisms and actively integrate into the reform process of global energy governance mechanisms.