Taking The Pulse

Insights on Climate Developments in China

August 2024

Welcome to Taking the Pulse!

Taking the Pulse (TTP) provides the global climate community with access to the latest thinking inside China on the low-carbon transition.

On August 29th, China's State Council Information Office released a white paper titled "China's Energy Transition," which spotlights the transition and evolution in China's energy consumption, supply, technological systems, and international collaborations over the past ten years. In this month's edition, we delve into the white paper to explore the most recent developments and trends in China's energy transition, focusing on energy consumption, energy supply, and the dual carbon goals.

In Focus: After Ten Years of Achievement, What's Next for China's Energy Transition?

The "China's Energy Transition" white paper, released on August 29, reflects on the progress made over the last ten years in areas such as green consumption, energy supply, innovation in energy production, new quality productive forces of energy, modernization of energy governance, and international cooperation. Song Wen, head of the Legal and Institutional Reform Division at the National Energy Administration, announced at the press conference that the energy sector is actively conducting preliminary research for the 15th Five-Year Plan, setting the stage for the next phase of energy transition, which includes a goal to raise the share of non-fossil energy consumption by approximately 1 percentage point annually. China is capable and confident of achieving its carbon peak by 2030. The country's next steps in its energy transition to meet the "dual carbon" goals are now under the spotlight.

- **Green energy consumption relies on both energy saving and carbon reduction.**

The white paper highlights achievements in green energy consumption, particularly on these three key areas: establishing institutional frameworks for energy conservation and carbon reduction, improving energy efficiency across major sectors such as industry, construction, transportation, and public institutions, and fostering new green energy consumption models. In 2023, clean energy accounted for 26.4% of total energy

consumption, up by 10.9 percentage points from 2013, with coal consumption falling by 12.1 percentage points.

To establish institutional constraints on carbon emissions, the Work Plan for Accelerating the Establishment of a Dual Control System for Carbon Emission, issued by the State Council in early August, outlined plans to adopt a dual control mechanism of carbon emissions during the 15th Five-Year Plan period (2026-2030). This mechanism will prioritize carbon intensity control, supplemented by total emission control. Carbon intensity reduction will replace energy consumption intensity and become a binding indicator for national economic and social development. The plan clearly sets the goals and reinforces the commitment to implementing dual carbon controls during the 15th Five-Year Plan.

Guo Zeshen, Director of the Consulting Division at SinoCarbon Innovation and Investment Company, believes that dual carbon controls are better aligned with the dual carbon goals. He noted that the previous control mechanism—dual energy consumption control—mainly targeted consumption activities, including clean energy consumption, which hampers the rapid growth of the clean energy sector in China. Controlling only energy consumption doesn't allow for a comprehensive approach to managing and reducing carbon emissions.

Researchers from the School of Applied Economics at Renmin University of China, in an article published in *Energy Observer Magazine*, pointed out three key challenges in implementing the dual carbon control: first, the need to enhance carbon emissions data and accounting systems to ensure consistency across all levels and sectors; second, the fair distribution of targets and responsibilities, taking into account regional differences in economic structures and resource availability, to avoid a one-size-fits-all approach; and third, integrating the national carbon trading system and the dual control system for carbon emission, ensuring coordination between upstream and downstream markets, emission reduction mechanisms, and both national and regional carbon markets.

To enhance energy efficiency, it is important to consider not only traditional energy-consuming sectors, such as industry, transportation, and construction, but also emerging industries with rapidly growing energy needs. Zheng Ying, special researcher at the China Carbon Neutrality Forum, explained that balancing carbon reduction with economic development involves two aspects: reducing emissions in traditional sectors on one hand, and promoting the growth of green, low-carbon industries on the other. When allocating dual carbon emission control targets, regions with strong resource advantages in the west of China could be incentivized to accommodate the rapid growth and relocation of emerging industries such as data centers.

In case you missed it: Promote Low-Carbon Operation of Data Centers from Three Aspects

Regarding the development of new green energy consumption models, the Basic Rules for Medium and Long-Term Electricity Trading—Special Chapter on Green Power Trading, released on August 23, defined the scope and pricing mechanisms for green power trading and established a unified national framework. Yang Kun, Executive Vice Chairman of the China Electricity Council, noted that green electricity and green certificates highlight the environmental value of green energy, encouraging society to adopt green, low-carbon consumption practices. This will aid in achieving the dual carbon goals and provide sustainable momentum for high-quality economic development. As the market continues to grow, challenges like inactive green power consumption and grid integration still need to be addressed.

- **On the supply side: continue to promote the rapid development of high-quality renewable energy**

The white paper highlights China's progress in accelerating the development of a new energy system, focusing on the growth of non-fossil energy, the integration of traditional and new energy sources, and improving the resilience of the power grid. According to the National Energy Administration, by the end of July, China's renewable energy generation capacity had reached 1.68 billion kilowatts, accounting for over 54% of total installed capacity. Wind and solar power alone reached 1.206 billion kilowatts, achieving the goal set for 2030 in both the 14th Five-Year Plan and the 2021 NDC report six years ahead of schedule.

Under the current policy scenario (updated in January 2024), the research team from the Institute for Global Decarbonization Progress predicts that installed wind and solar capacity could reach 2,142 billion kilowatts by 2030, nearly 2.8 times the 2020 level. The team believes that accelerating renewable energy development will be key to meeting the national peak carbon target by 2030. Electrification across all sectors is expected to drive significant growth in electricity consumption, although this growth will slow after 2035. Based on a review of various models and conditions, it is an industry consensus that China's renewable energy capacity will continue to grow rapidly, reaching 1.7 to 3.5 times the 2020 level, about 1.7 to 3.3 billion kilowatts by 2030.

However, to achieve the dual carbon goals, further efforts are needed to ensure the high-quality growth of renewable energy. In an article published in *Study Times*, Zhang Jianhua, Director of the National Energy Administration, emphasized the need to balance overall and localized strategies, development and safety, supply and demand, and government-market coordination. This includes prioritizing wind and solar as reliable replacements for traditional energy sources and ensuring synergy between domestic and international markets. On demand and supply management, it is necessary to ensure high-quality green energy supply and drive energy efficiency and carbon reduction on the demand side.

The Action Plan for Accelerating the Construction of a New Power System (2024-2027), released in August, outlined reforms needed for large-scale renewable energy transmission. Yang Lei, Deputy Dean of the Energy Institute at Peking University, noted that speeding up non-fossil energy development is critical for a comprehensive green transition. Lin Weibin, Director of the Energy Policy Research Center of the China Energy Research Society, emphasized that to adapt to a new electricity market, it is essential to deliver the energy value, flexibility, and green value in the new power system. Fulfilling these values requires both effective market mechanisms and targeted government interventions.

China's energy transition has achieved success in increasing energy efficiency and ramping up installed wind and solar power. But to fulfill the dual control of carbon emissions set for the 15th Five-Year Plan and the ultimate dual carbon goals, it is still necessary to make efforts from multiple ends and carry out systematic and comprehensive reforms.

Sources of the Expert Views Cited in This Newsletter:

National Energy Administration: Press Conference on the "China's Energy Transition" White Paper

China Youth News: Green Development Speeds Up China's Comprehensive Transition to "Dual Control of Carbon Emissions"

Energy Observer Magazine: What are the Challenges of Shifting from Dual Control of Energy Consumption to Dual Control of Carbon Emissions?

China Securities Journal: New Policy on Green Power Trade

Dialogue 2049: Modeling analysis: By 2030, how much will China's installed renewable energy capacity increase?

Study Times: Guaranteeing a High Level of Energy Security with High-quality New Energy Development

China.org.cn: Rapid Expansion of Renewable Energy Power Generation Contribute to China's Economic High-Quality Green Development

21st Century News: New Power System Construction "Roadmap" Set, Raising Call for Deepen Electricity Reform

Other Topics You May Also Be Interested In:

- **Carbon Market** | The expansion of China's national carbon market will increase market activity and promote industry transition.
- **Energy Storage** | China's New energy storage faces cost, technology, marketization and coordination challenges.
- **Energy Transition** | Accelerating the improvement of green power and green certificate trading system to promote carbon reduction in the supply chain
- **Data Center** | Building a green data center requires ensuring a stable supply of green power.

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Thank you for reading!

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