



China, a leader of renewable energy expansion worldwide and a key country for global energy transitions

The IEA works on policy design and implementation with Chinese government entities and experts across the energy sector



Publication of a landmark report, *An Energy Sector Roadmap to Carbon Neutrality in China*, that was very well received in the context of China's pledge to achieve carbon neutrality before 2060



Support to Chinese government agencies on energy efficiency, the national power market, and the world's largest emissions trading system



References to IEA recommendations included in China's 14th Five-Year Plan and national policy documents

Key facts



China's **power system**, the largest in the world, accounts for

14%

of **global energy** sector CO₂ emissions



over
40%

of **China's energy-related** CO₂ emissions

One of every four tons of coal used globally is burnt to produce electricity in China



In 2022, China accounted for almost **half** of all new **renewable power capacity** worldwide

By 2024, China will deliver



almost
70%

of all new **offshore wind** projects globally

over
60%
of **onshore wind**



50%
solar PV projects

► Power markets and renewable energy policy

Direct closed-door meetings with China's National Energy Administration on renewable energy policy and power sector reforms resulted in significant policy impacts. Numerous policy recommendations were reflected in the 14th Five-Year Plan for Renewable Energy Development, published in June 2022. These included a target for total renewable electricity generation, closely aligned with targets proposed by the IEA, particularly for solar and wind. Previously, China had only published technology-specific targets.

► Groundbreaking carbon neutrality roadmap

The IEA report, *An Energy Sector Roadmap to Carbon Neutrality in China*, became a blueprint for national roadmaps for other countries. The report was well received by Chinese officials and experts and featured in several key publications and energy periodicals. The livestreamed launch was watched by over 670,000 people across China, sparking a lively conversation, and was referenced by stakeholders outside China, especially in the leadup to the COP26 climate summit in 2021.

► More stringent requirements for the world's largest ETS

Since 2018, the IEA has supported China's Ministry of Ecology and Environment improvement and implementation of the world's largest emissions trading system. This included the publication of four bespoke reports, including *Enhancing China's ETS for Carbon Neutrality: Focus on Power Sector* in 2022, and direct

exchanges and workshops with the Ministry and academic experts. This support – and that of other partners – resulted in Ministry publishing a significantly more ambitious draft allowance allocation plan for the trading scheme's compliance period in 2021 and 2022.

► Innovation

Clean energy innovation will play a crucial role in achieving China's objective to reach peak CO₂ emissions before 2030 and to achieve carbon neutrality before 2060, and it ranks among core government priorities for the 14th Five-Year Plan from 2021-2025. It is crucial to both support the role of innovation in energy transitions and understand the success of China's innovation policies. Consequently, the IEA established a work programme on energy RD&D with the Ministry of Science and Technology. This led to an analysis published in 2022 which highlighted several successes such as low-carbon technology patents doubling every five years, and China's development of a solar PV industry that leads the world in production and is now breaking efficiency records in some cases.

Opportunities for engagement

- **Flexibility of power markets and integration of renewable energy**

The IEA is working with China's National Energy Administration to inform the policy process for electrification of industrial energy use with renewables towards one of the goals of the 14th 5-year plan.

- **Further broadening the emissions trading scheme to include heavy industry**

The IEA is working with Ministry of Ecology and Environment of China to explore opportunities for faster industrial decarbonisation through expansion of the trading scheme.

- **The future of heat-pumps in China**

With support from China's National Development and Reform Commission, the IEA is working with Tsinghua University to inform national and regional policymaking on heat pumps and to enable technology rollout nationally.



— Dr. Fatih Birol with Minister Xie Zhenhua, Special Envoy for Climate Change, in Beijing in July 2023

This work is supported by the **Clean Energy Transitions Programme**, the IEA's flagship programme for taking action to achieve a clean energy transformation worldwide.

Last updated: September 2023

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