

Wind and solar power will beat coal in the battle for Chinas energy transformation

In 2060, wind and solar power will supply more than 90 per cent of the energy needed for the Chinese society, and coal will be out. The China Energy Transformation Outlook 2021 summary presents pathways for achieving China's targets to peak CO₂ emissions before 2030 and reach carbon neutrality before 2060. Besides the shift to renewables, energy efficiency will be a key pillar to decouple energy demand from Chinas economic growth.

Today, the Energy Research Institute (ERI) of the Chinese Academy of Macroeconomic Research together with the Danish Energy Agency and the Center for Global Energy Policy at Columbia University presented pathways to fulfill the climate goals and reach carbon neutrality in Europe, China and United States. The event was hosted by the Danish Energy Agency at the State of Green pavilion at COP26 in Glasgow with opening speeches from Xie Zhenhua, China Special Envoy for Climate Change and Dan Jørgensen, Minister of Climate, Energy and Utilities in Denmark.

Director General Wang Zhongying from ERI presented key findings of the upcoming China Energy Transformation Outlook 2021 (CETO 2021). According to the report, a continued economic growth is possible while achieving carbon neutrality. Energy efficiency improvements could be a key pillar to drive down the overall energy demand - the energy intensity of the economy decreases to 23 per cent of the 2020 intensity by 2060. Electrification will increase the demand for electricity from 27 per cent in 2020 to more than 50 per cent or 70 per cent in 2060. And, as the third major pillar in the transformation, renewable energy will satisfy the bulk of the energy demand and grow from around 15 per cent in 2020 to more than 90 per cent or 95 per cent in 2060.

Important input for Chinese national energy policy

The CETO serves as scientific based research input for Chinese national

energy policy taking the temperature on China's green energy transformation. Its main purpose is to provide a long-term scenario view of the future Chinese energy system, and develop policy recommendations for cost-effective initiatives that could be implemented to reach the below 2-degree target in the Paris Agreement.

The outlook shows that China is in a position where it *can* create the foundation for its energy revolution. A decoupling of economic growth from energy consumption is a precondition for China to become CO₂-neutral in 2060 while maintaining a sustainable economic growth. Over the past decades, Denmark has shown that this can be done through a massive increase in energy efficiency and a shift from fossil dependency to local renewable energy generation.

The outlook is the first in a new line of publications building on top of ERI's China Renewable Energy Outlooks published yearly since 2016. The new outlook incorporates a more comprehensive analysis of the Chinese energy system than in the previous China Renewable Energy Outlooks. Moving forward, the CETO will in the coming years also analyse the *provincial development* towards a green and carbon neutral energy system including a shift from coal to renewables.

The CETO 2021 executive summary is available for download [here](#). The full report will be available for download later this year.

About the Sino-Danish energy cooperation

- Denmark and China have had cooperation on development of a low-carbon energy system since 2006, including programs for wind energy development, and development of policies for promoting renewable energy in the Chinese energy system
- The current Danish-Chinese Energy Partnership Programme, which is in its third phase running from 2020-2025, is financed by the Danish Ministry of Foreign Affairs from the Danish Climate Envelope.
- The Danish Energy Agency cooperates with the National Energy Administration (NEA), Energy Research Institute of NDRC (ERI), and China Renewable Energy Engineering Institute (CREEI). The Energy Partnership Programme also includes a new partnership cooperation with the Chinese Ministry of Ecology and Environment (MEE).

- Close Danish partners include the Danish embassy in Beijing as well as the Danish Transmission System Operator, Energinet.
- China and Denmark have furthermore tailored two Strategic Sector Cooperation programs: the Sino-Danish Clean Heating Program and Quality Offshore Wind Program.
- Denmark has 19 government-to-government collaborations on energy with countries that collectively emit more than 60 percent of the world's CO₂. By sharing and expanding knowledge and capacity in the partner countries' national authorities, policy makers are empowered to make sustainable and cost-effective energy policy decisions that support global sustainable transition.

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