Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

On behalf of: Federal Ministry for Economic Affairs and Energy

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Energy in China Newsletter

Bimonthly news on China's latest regulatory, technological and industrial development in energy sector
A service of the Energy Sector in GIZ China

Dear readers,

This past month has seen two major energy transition stories: a positive story about surging renewable energy capacity (see below for more details), and a negative story about power outages. China experienced record low temperatures this winter – dropping to minus 19.6 degrees Celsius in Beijing on January 7 and breaking a cold temperature record set in 1969 – and several provinces faced power shortages. News stories attributed power shortages in Inner Mongolia, Jiangxi and Hunan to tight coal and gas supplies, fossil fuel plant outages, rapid industrial electricity consumption growth after the end of Covid lockdowns, and insufficient interconnections between provinces. Zhejiang province deliberately rationed electricity consumption to meet its five-year plan energy and coal reduction targets.

Last year, Chinese President Xi Jinping announced a target to achieve carbon neutrality by 2060 and peak carbon emissions before 2030. Since then, the government has required provinces and large state-owned enterprises to make plans for when they would peak emissions. However, the topic of energy security remains a high priority, and there is a risk that China's provincial and SOE power companies will use power outages to lobby for more coal capacity, which would further lock in high emissions pathways for the power sector. The risk of creating even more stranded assets looms: more than 70% of China's coal plants were built after 2000, and to reach Mr. Xi's climate goals, fossil fuels will need to start phasing out rapidly after 2030. However, the central government's energy work conference reiterated China will make energy security the top priority in 2021. This includes both measures to safeguard energy security via promoting fossil fuels, as well as prioritizing renewable energy development.

Many questions remain for the upcoming 14th Five-Year Plan: what role will China assign to renewable energy, how precisely will China achieve energy security, when and how will China limit its dependency on coal and peak its carbon emissions? 2021 will provide a lot of answers to these questions. We will continue to keep you up to date on China's latest developments in the energy sector as well as our own project activities in 2021. We wish you an enjoyable and interesting read, and a healthy start to the Chinese Lunar New Year of the Metal Ox.

Kind Regards,
Yuxia Yin and Anders Hove
and the energy team at GIZ China

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Project news

Sino-German cooperation on renewable energy deepened

9th Sino-German Working Group Meeting on Energy

The German Federal Ministry for Economic Affairs and Energy (BMWi) and the National Energy Administration of the PR China (NEA) reviewed the Energy Partnership's activities of 2020 and agreed on new activities and focal topics for 2021 during a virtual working group session on January 22. At the meeting, both sides reviewed last year's progress and achievements of the Sino-German cooperation on energy and discussed new activities and focal topics for 2021. Both sides agreed on deepening the cooperation on power and spot market reform, power sector flexibility, sustainable heating, biomethane, distributed energy, hydrogen and energy storage as well as the cooperation within the Sino-German Energy Transition project in support of Chinese think tanks.

Read more

BMWi, NDRC expand cooperation on energy efficiency and launch demonstration projects

About the projects

The Sino-German Energy Partnership is the central platform for energy policy dialogue between Germany and China on national level. It aims at accelerating the energy transition in the two countries by continuous political, economic, regulatory and technological exchange with focuses on energy efficiency and renewable energies. Furthermore, the Energy Partnership provides a platform for fostering private sector cooperation. As part of the Energy Partnership, the Sino-German Energy Transition project focuses on supporting research cooperation between German and Chinese think tanks on all aspects of the low-carbon energy transition. On behalf of the Federal Ministry for Economic Affairs and Energy (BMWi), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH implements the Sino-German Energy Partnership (EP) and has established offices in Beijing and Berlin serving as an information platform and point of contact for all involved and

6th meeting of the Sino-German Working Group on Energy Efficiency

The Sino-German Working Group on Energy Efficiency convened for the sixth time on 9 December 2020. The German Federal Ministry for Economic Affairs and Energy (BMWi) and the National Development and Reform Commission of the PR China (NDRC) reviewed the progress of the Sino-German cooperation in 2019-2020 and adopted the working plan for 2021. BMWi and NDRC officially launched the *Sino-German Demonstration Project Energy Efficiency in City Quarters* and a second phase of the *Sino-German Demonstration Project on Energy Efficiency in Industry* under the framework of the Sino-German Energy Partnership. The second phase focuses on capacity building for energy efficiency measures and energy audits in six energy-intensive industries (pulp and paper, cement, glass fibre, ceramics, airport, power). The demo project on energy efficiency in city quarters aims at developing and implementing a sustainable energy concept for a Chinese city quarter or industry park while involving German companies. Both demo projects will run until December 2022 and are implemented by GIZ together with the National Energy Conservation Center of NDRC (NECC), and the German Energy Agency (dena) and CECEP Consulting. This year's meeting was held online.

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interested parties. On the Chinese side, the Energy Partnership is chaired by the National Development and Reform Commission (NDRC) and the National Energy Administration (NEA).

Accelerating the global energy transition through Women in Green Energy

Launch event for the Women in Green Energy Initiative

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On 7 December 2020, the Sino-German Energy Partnership launched the **Women in Green Energy**

Initiative in Beijing. The initiative will connect and empower female professionals in China's energy sector, foster women's potential and contribute to the global energy transition. At the event, representatives from government, women networks, associations, and companies gathered to discuss the current status and challenges for female engagement in the energy sector, and spoke about existing and potential measures for empowering women. The initiative will build on the Sino-German bilateral partnership and encourage more stakeholders to participate. It will also help build dialogue platforms for women in the energy sector, promote knowledge sharing and information exchange at home and abroad.

For more information about the initiative, please contact Ms. LV Yanan (yanan.lv@giz.de).

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Quantifying power sector flexibility in Germany and China's Jing-Jin-Ji region, for better integration of renewables

On 16 December 2020, the Sino-German Energy Transition team of GIZ hosted a report launch and expert exchange event on power sector flexibility in Germany and China's Jing-Jin-Ji region. Experts from think tanks such as the German Energy Agency (dena), the China National Renewable Energy Centre (CNREC), and the Electric Power Planning and Engineering Institute (EPPEI) exchanged views, and emphasized that system flexibility is key in ensuring energy security. Several organizations and institutions also expressed clear interest in collaborating with GIZ in further research into the flexibility topic. Next steps include expanding the analysis to cover all of Europe and all of China, including projections to 2025, and adding policy options that represent hybrids of the options considered in the report—for example, combining DSM with energy storage, or coal plant flexibilization with a small amount of energy storage.

For more information about the report, please contact Mr. Zhao Kaiming (kaiming.zhao@giz.de)

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Special Focus

China energy transition policy summary 2020

Summary of China's important energy and climate policies and developments

President Xi Jinping's announcement of peaking carbon dioxide emissions before 2030 and achieving carbon neutrality by 2060, the end of the 13th Five Year Plan period and preparations for drafting the 14th Five Year Plan, and the coronavirus pandemic made 2020 a particularly important year for China's energy sector. This review of China's most important energy transition related policies examines the country's achievements and trends in developing its energy sector in 2020. Although the review cannot exhaustively cover all issued energy-related policies, it covers wide variety of important policies in China's energy sector.

Click here for the China energy transition policy summary 2020

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Green development, energy security and energy conservation are priorities for energy development in the 14th FYP period

The word energy security occurs frequently in recent energy policy documents, and the central government's recent energy working conference reiterated that ensuring energy security is the top policy priority in 2021. The white paper for energy development released on December 2020 also emphasizes energy security. The white paper states China's measurements in achieving energy security and green development as follows:

• Safeguarding energy security will require supply side reform, promotion of clean utilisation of fossil fuels, improvements in energy storage and meeting peak load as well as building a multi-complementary energy system, which refers to combining multiple types of complementary generation to ensure integration of variable electricity sources.

• To achieve green development, China will prioritize renewable energy development. NEA encourages solar PV projects to pair with other industries such as agriculture. The development of wind energy should not only focus on centralised wind farms but also distributed ones—meaning wind installations with just two or three turbines located nearer loads.

• The document also mentions energy conservation. Local governments will continue to set targets in the 14th Five-Year Plan for controlling total energy consumption and intensity (energy per unit GDP).

Read more:
White Paper
Interpretation of white paper
Energy working conference

Government report attributes power shortages in southern provinces to high power load, plant outages, and power rationing to meet administrative targets

The extreme winter weather this year resulted in an increased electricity load during a period of tight supplies of coal and gas resources and the rapid recovery of industrial production after lockdown. Hunan, Jiangxi, Inner Mongolia and other provinces experienced power shortages in December. The National Development and Reform Commission (NDRC) recently responded to this shortage, the driving forces include:

• Increase in industrial production,
• Extreme cold weather further increases electricity load,
• Limited external power receiving capacity,
• Power plant unit failures.

Distinct from the other provinces, Zhejiang had adequate capacity, but rationed electricity to meet its 13th Five-Year Plan energy control and coal reduction targets.

An analysis of regional electricity supply and demand from the Centre for Research on Energy and Clean Air suggests that all the affected regions had adequate capacity, but inflexible transmission and inadequate transmission capacity have contributed to outages at the provincial level and below.

Read more:
Energy Observer
Xinhua News

Energy policy, reform & general

Xi speech boosts carbon intensity target to 65%, non-fossil target to 25%

In a speech at the United Nations' Climate Ambition Summit, President Xi Jinping proposed more ambitious goals on climate change. China intents to reduce carbon intensity by over 65% from the 2005 level by 2030 (an update from the 60-65% in the previous NDC). The share of non-fossil fuels in primary energy consumption should increase to around 25% (5% more than the previous NDC target). The speech also stated that China aims to increase total installed capacity of wind power and PV to over 1200 GW.

At the end of 2020, China had a combined 535 GW of wind and solar, and China added 120 GW of these two sources in 2020. Hence, subtracting present capacity from the 1200 GW target, China would need to add an average of at least 66 GW annually.

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China issues new regulations for the national carbon-trading scheme

On 5 January, the Ministry of Ecology and Environment announced trial carbon emission trading rules, along with an allocation methodology and a list of key emitters. A national carbon emission trading market is one element of peaking carbon dioxide emissions by 2030 and achieving carbon neutrality by 2060.

• The first compliance cycle of the national carbon market officially starts from January 1, 2021, covering the power generation sector nationally. 2,225 power generation companies will receive carbon emissions quotas based on a benchmark methodology.
• The new regulations define covered entities as those emitting over 26,000 tons of carbon dioxide equivalent. The new regulations standardize and unify the standards for defining key emitters compared with pilot markets.
• Emitters are only responsible for a maximum of 20% excess emissions of its total emissions. An analysis from Refinitiv suggests the total allocation will require an overall cut of 5%. Covered entities may meet 5% of the cap with CCERs.
• The regulation clarifies that emissions include seven categories of greenhouse gases (converted to CO2 equivalent values), indicating the scheme will eventually cover a wider range of greenhouse gases.
• The new regulations include penalties for companies that falsely report or refuse to fulfil their obligations. The maximum amount of fine is just RMB 30,000.

Read more:

MEE announcement
Allocation methodology
Further news

The People’s Bank of China plan stresses improving green finance policy

China’s central bank, the People’s Bank of China approved its 2021 work plan with measures to meet China’s goals to achieve peak carbon emissions before 2030 and carbon neutrality by 2060. The plan mentions the market for carbon emissions, new incentives, and a policy framework for green finance. Suggestions include:

• Improving policy design and planning,
• Mobilizing financial resources towards green development,
• Enhancing financial system capacity for climate risk management,
• Establishing a carbon emission trading market with prices that incentivize the reduction of carbon emissions,
• Improving standards for the green finance,
• Clarification of regulatory and disclosure requirements for financial institutions,
• Establishing an incentive and restraint policy system,
• Improving green financial products,
• Continuing to facilitate international cooperation in green finance.

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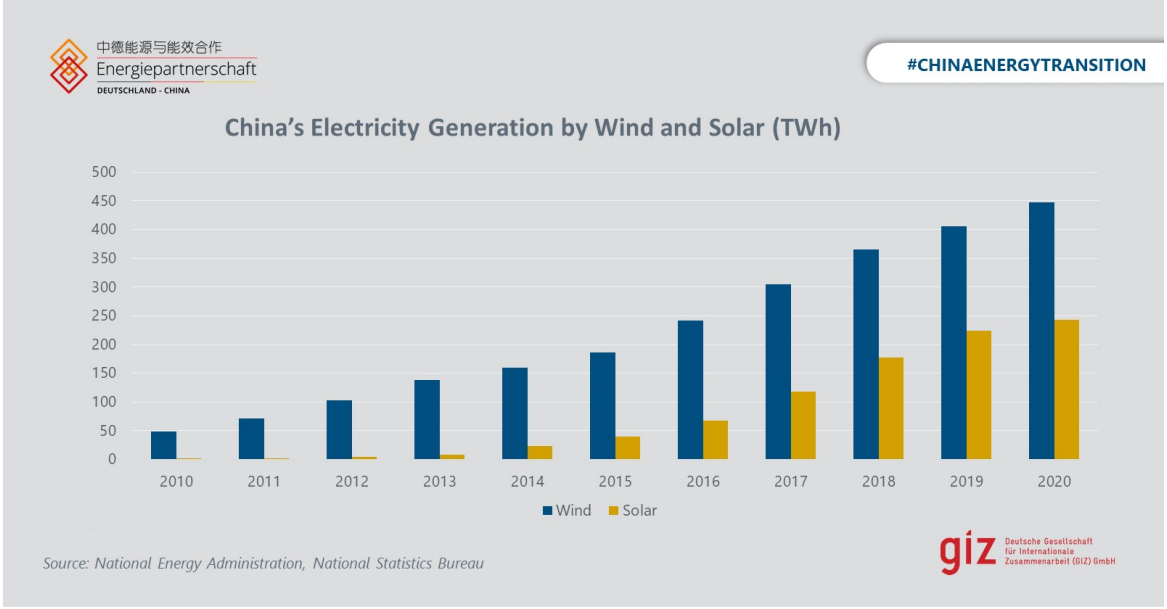
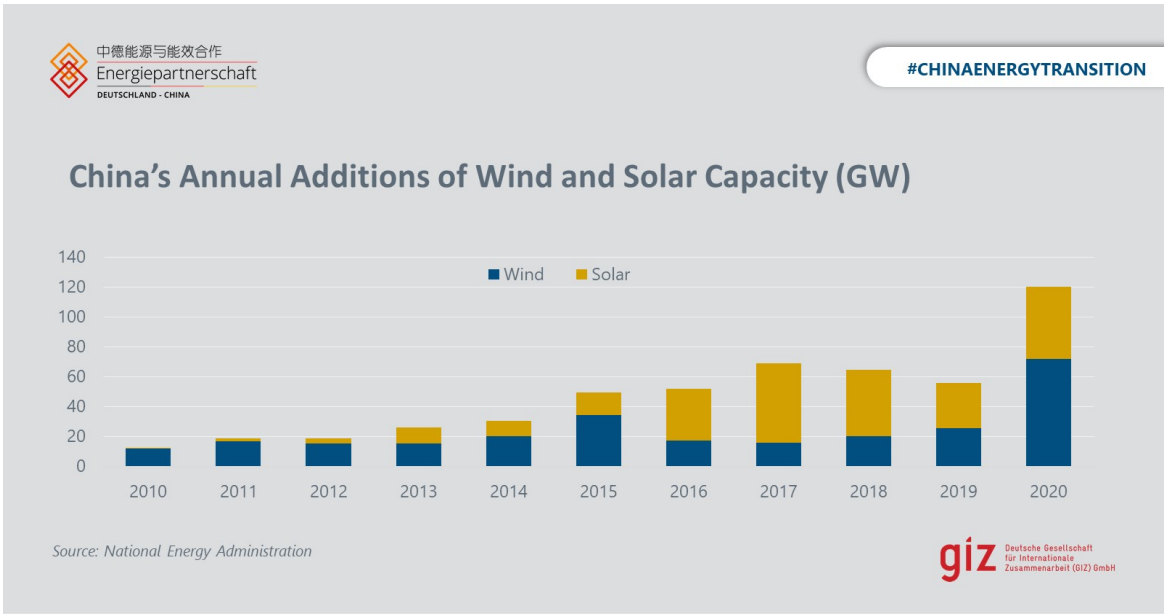
Renewable energy

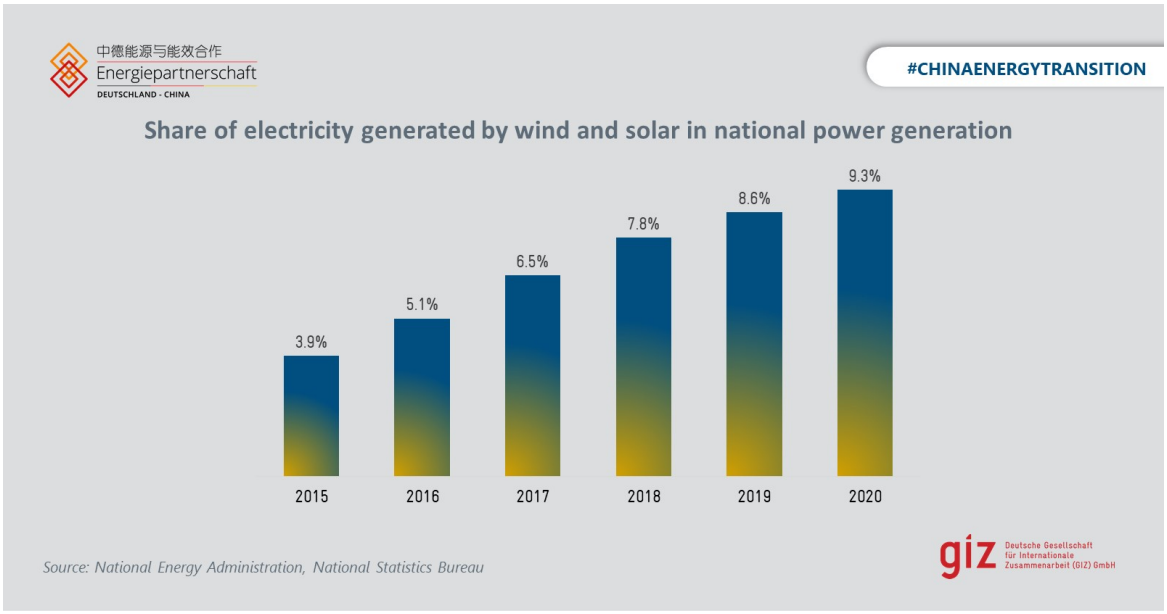
China’s wind and solar installations surge in December, setting new annual record

China’s NEA released new statistics on wind and solar installations showing that China added a total of 72 GW of wind (an increase of 178% versus 2019, and more than the previous three years combined), and 48 GW of solar. China installed 25 GW of wind power in the first 11 months of the year, implying December additions of 47 GW. Media reports indicated some plants reported completion in advance to qualify for feed-in tariffs or contractual terms.

Because most additions took place towards the end of the year, wind and solar electricity production grew more modestly: wind output rose 10.5% and solar rose 8.5% from the prior year, accounting for 9.3% of annual electricity production, versus 8.6% the prior year, meaning wind and solar still account for less than 10% of the country’s supply. Wind and solar combined accounted for 31.7% of incremental output, hydro for 35.5%, nuclear 9.1%, and coal/thermal 31.1%. Thus, while non-fossil sources accounted for the majority of new electricity output, coal electricity production is still rising.







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Total renewable energy subsidy funds increased by 5% for 2021

In November, the Ministry of Finance set the 2021 budget for renewable energy subsidies in 2021 at RMB 5.96 billion, an increase of 4.9% from 2020. This reflects the government's policy that total renewable subsidy payments should rise in line with collection of renewable surcharge revenue, to prevent deficits in the subsidy fund. Solar PV projects will receive total subsidies of RMB 3.38 billion and wind power will receive RMB 2.31 billion. Poverty-alleviation solar PV projects and residential distrusted solar PV projects will have priority for subsidies. New onshore wind and solar thermal projects are no longer covered by the subsidy.

Read more:
Ministry of Finance
Energy Iceberg

To support shift in biomass power subsidies from capacity to output, NEA will strengthen information monitoring

China's National Energy Administration (NEA) recently issued a notice to strengthen the in-formation monitoring on China's biomass power projects. This supports the allocation of subsidies for biomass through tendering, which started in January 2021 (see Energy in China Newsletter from November 2020). The notice requires provinces and municipalities to fill in project information in NEA's RE project information management system. Biomass power plants must provide precise biomass power output data. The information monitoring policy lays the groundwork for a reform of bioenergy subsidies to reward energy production instead of capacity, as announced by MoF, NDRC and NEA in September last year.

Read more

Coal, oil & gas

China's coal province Shanxi closed 106 coal mines during 13 FYP period

The Shanxi Energy Bureau announced that the coal-dominated province has reduced excess coal production capacity during the 13th Five-Year Plan period, achieving its reduction goal a year ahead of its original schedule. As a result, the province is no longer the largest coal producing province in China. According to government reports, Shanxi's dependence on coal has resulted in waste of resources, a one-sided industrial structure, and insufficient scientific and technological innovation. Shanxi reports that it has closed 106 coal mines in the last four years and increased the share of advanced coal production capacity (defined in terms of coal energy content, mine efficiency, and environmental impact) from 36% to 68%.

Read more

Grid, energy storage & consumption

China releases green hydrogen standard quantifying carbon emissions of hydrogen production

In December the China Hydrogen Alliance issued a proposed Standard for Evaluating Low-Carbon Hydrogen, Clean Hydrogen and Renewable Hydrogen. The standard uses a life-cycle emissions assessment method to set carbon emissions per kg of hydrogen at is 14.51 kg CO_2e/kg for low-carbon hydrogen and 4.9 kgCO_2e/kg for clean and renewable hydrogen. The standard uses emissions benchmarks from the European Green Hydrogen Certification project (methane gas-based hydrogen). The Alliance states that standard will facilitate the transformation of high-carbon hydrogen production to green hydrogen production and facilitate linking of markets for carbon and hydrogen.

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Business

EU and China reach Comprehensive Investment Agreement

After seven years of talks, the European Union and China concluded the principle negotiations for a Comprehensive Agreement on Investment (CAI) in December. By agreeing, China has committed to a greater level of market access for European investors, fair treatment for EU companies on a level playing field in China, transparency of subsidies and rules against forced transfer of technologies. Next, the agreement will need to be approved by the European Council and the EU Parliament.

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European Chamber calls on governments to reverse deglobalisation

The European Chamber of Commerce in China (EUCCC) released a report measuring the costs of decoupling and deglobalisation for businesses operating in China. Citing the US-China trade dispute, the report finds that the dispute has damaged economies and companies. The advocacy group calls for governments and industry leaders to find solutions and reverse decoupling.

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Catalogue of industries encouraging foreign investment covers energy sector

On 28 December 2020, China's National Development and Reform Commission (NDRC) and the

Ministry of Commerce (MofCOM) released the 2020 Catalogue of Industries Encouraging Foreign Investment. It contains 1,235 categories where investment is encouraged, covering a list of technologies in the energy sector, including hydrogen production, storage, transportation and liquefaction; carbon capture, utilization and storage (CCUS); renewable energy (PV, geothermal, waste-to-energy, biogas and wind); microgrids; sustainable heating; energy efficient buildings; and energy-intensive industrial materials and technology. The main changes to the catalogue are:

a. emphasis on the role of foreign investment in the industrial supply chain;
b. encouragement of foreign investment in the production services industry;
c. and of investments in China's central and western regions.

The previous revision cycle of the catalogue took 3-5 years, while the most recent version was published only one year after the 2019 edition. The speedy revision of the catalogue is a step towards stabilizing foreign investment in the wake of the Covid-19 pandemic. The UN Commission on Trade and Development (UNCTAD) had previously predicted a 30-40% decline in global cross-border investment for 2020.

Read more

China in the world

China's Belt and Road renewable investment exceeds fossil energy for the first time

In the first half of 2020, China's investment in the renewable energy sector in countries and regions along the Belt and Road exceeded fossil energy investment for the first time, according to data from the International Institute of Green Finance (IIGF) of the Central University of Finance and Economics (CUFE) and the American Enterprise Institute (AEI). With a total investment of US$ 8.81 billion in the energy sector, renewable energy accounted for 58.1% compared to 41.9% for fossil energy. For the post-pandemic era, experts expect continued growth in the share of renewable energy projects in BRI countries. The trend reflects increased willingness of countries to reduce carbon emissions, rising concern of financial institutions about climate risk, and China's experience in the development of renewable energies.

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