



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,

the COVID-19 outbreak is shaking the world economy. China's energy industry is also affected. Oil, coal and electricity consumption, air pollution and carbon dioxide emissions, have plunged over the last weeks. Local and foreign businesses report severe impacts across all sectors. In a recent survey amongst European companies, half of the respondents planned to lower annual business targets and forecasted a double-digit drop in revenues. Renewable energy projects have been delayed across the country, with possibly severe impacts on involved SMEs.

Last year's energy statistics show that, like in 2018, renewable energy accounted for more than half of the annual increase in power output. While wind capacity additions grew from 2018 (+20 GW) to 2019 (+26 GW), they remained below their peak rate, and solar PV additions declined sharply following feed-in tariff cuts announced in May (2018: +44 GW, 2019: +30 GW). Already in January, the National Energy Administration kicked-off the preparation for the 14th Five-Year-Plan. With no separate plans for hydro, wind and solar power development, it is expected that the authorities are increasingly letting the market decide how to meet quotas for clean energy consumption, instead of just setting ever-higher capacity targets.

The current restrictions to public events have also impacted our activities. This year's Berlin Energy Transition Dialogue (BETD) was postponed to 2021 as part of the Federal Government's preventive measures to contain the epidemic. Putting current developments aside, we are extremely excited to provide you with a glimpse of the women shaping our energy transitions. On International Women's Day, we published a video on women's power in the energy sector. You will surely enjoy it!

You will have noticed that we've made some changes to our newsletter. As of today, our "Energy in China" will be published in English. Furthermore, we have joined forces with BMWi's "German Energy Transition Expertise for China" project, also implemented by GIZ. Both measures aim at increasing our outreach and efficiency. As always, we will continue to keep you up to date on China's latest developments in the energy sector and our own project activities. We wish you an enjoyable and interesting read.

Kind Regards,

Yuxia Yin and Anders Hove
and the energy team at GIZ China

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Project news

Two Sessions:

Energy Partnership and German companies to present policy proposals to Chinese lawmakers

The Two Sessions – the annual meetings of the National People's Congress, the top legislature, and the Chinese People's Political Consultative Conference National Committee, a top political advisory body – mark the highlight of China's political year. In cooperation with China's Clean Heating Industry Committee (CHIC), the Sino-German Energy Partnership has asked German companies for suggestions on how to improve China's policy environment for clean heating. So far, nine policy proposals have been handed in – ranging from the introduction of system labels for heat pumps to reducing barriers for decentral heating solutions. Proposals will be handed over to Chinese lawmakers during this year's Two Sessions. Normally held in March, this year's meetings have been postponed due to the coronavirus outbreak. If you are interested in providing policy suggestions for China's sustainable heating development, please contact Mr. Tim Nees (tim.nees@giz.de).

Video campaign

Discover female power for the Energy Transition



Source: shutterstock

On the occasion of the International Women's Day 2020, the Sino-German Energy Partnership initiated a video campaign on women's power in the energy sector. The video aims at increasing the visibility of female power in the energy sector, in research, government, NGOs, international cooperation or the private sector, supporting and motivating more women to join our cause for shaping a low carbon & sustainable future. The invited outstanding female energy professionals and experts from both China and Germany shared their passion for and contributions towards a sustainable energy transition. Their voices and backgrounds show that diversity and equality are essential for the success of the global energy transition!

[Check out the video](#)

About the projects

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 the German Energy Transition Expertise for China (Energy Transition) project. On the Chinese side, the Energy Partnership is chaired by the National Development and Reform Commission (NDRC) and the National Energy Administration (NEA). The Energy Partnership focuses on policy advice and exchange regarding energy efficiency and renewable energies on national level. Furthermore, the Energy Partnership provides a platform for fostering private sector cooperation. The Energy Transition project focuses on supporting research cooperation between German and Chinese think tanks on all aspects of the low-carbon energy transition. As implementing agency, GIZ has established offices in Beijing and Berlin serving as an information platform and point of contact for all involved and interested parties.

Upcoming events

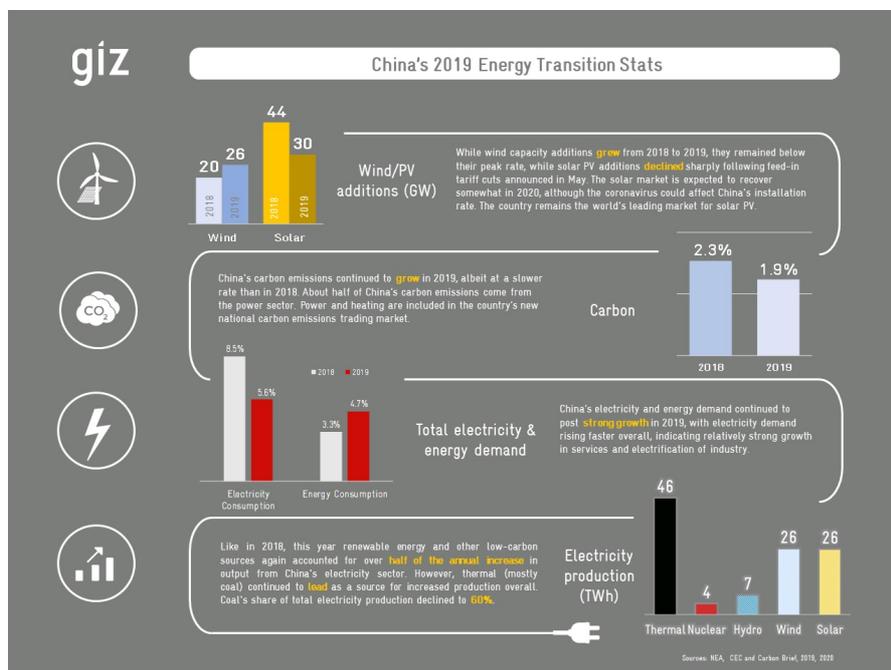
The 5th German Local Business Advisory Council

Twice a year, representatives of German businesses are invited to join the Sino-German EP and partners from the German Embassy and Consulate General to discuss challenges on the Chinese market and find solutions that facilitate business activity in the sector. It also serves as a platform to hear and discuss first-hand with government and business experts about policy developments in the energy efficiency and renewable energy sectors in Germany and China. The next Council is planned to take place in April in Beijing. For more information about the German Local Business Advisory Council, please contact Mr. Tim Nees (tim.nees@giz.de).



Renewable energy in China 2019

By the end of 2019, China had a total power generation capacity of 2100 GW. Thermal power is still the main source of energy in China with about 60% of the total installed capacity. The installed capacity of wind and solar reached 210GW and 200 GW. In 2019, China added 102 GW new capacity. Non-fossil energy resources took up 62.8% of the newly added capacity. The power generated by renewable energy grew steadily in 2019. Power generated by solar power increased by 26.5%. The power generated by wind power increased less steadily for only 10.9%. We have summarised the key trends in the China's 2019 Energy Transition Stats fact sheet as followed, [click here](#) for the original file.



GIZ illustration based on data source from NEA, CEC and Carbon Brief, 2019, 2020

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Performance of China carbon market 2019

China's eight pilot regional carbon markets saw trading volume of 696 million tons CO₂-equivalent in 2019, an 11% increase in trading volume from 2018. The cumulative transaction volume reached RMB 1.56 billion, up 24% compared to 2018. Guangdong province accounted for almost 65% of the annual trading volume. Several crucial policies were announced in 2019 as well. In April, the Ministry of Ecology and Environment started soliciting public opinions on the provisional regulations for carbon trading in the national carbon market. The provisional regulations on carbon market accounting treatment was announced by the Ministry of Finance in December. The policies will provide a legal foundation and an institutional standard for the national carbon market.

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Special focus - COVID-19 impact on the energy sector

Impact of COVID-19 on China's Energy Industry

The sudden outbreak of COVID-19 has had an immense impact on China's economy and energy sector. Bloomberg News has forecasted China's GDP will grow at only 1.2% in 1Q 2020, a low for the last decade. The epidemic has hit manufacturing and service industries especially hard due to reduced outdoor activities, travel restrictions, and delayed return to work for many factories and companies. Electricity consumption show a year-on-year decrease of 5% for services and 0.2% for manufacturing in the first quarter. The number should slowly rebound in the second quarter, assuming the outbreak within China is controlled and limited outside of China as well. The slowdown of the economy and the decline of power demand will also reduce overall primary energy consumption. Coal consumption at power plants reached its lowest of two-week average at 36%. Rystad Energy estimates that oil demand will be reduced by as much as 0.9 million barrels per day

in China as a result of lower industrial activity and travel.

The epidemic also made many renewable small and medium enterprises (SMEs) more vulnerable. The disruption of the supply chain is likely to delay completion of renewable projects. The vice-chairman and secretary-general of the China Photovoltaic Industry Association (CPIA), Wang Bohua forecasted that for 2020 solar PV additions will cut from the 40-50 GW to 35-45 GW. Onshore wind projects face rising costs of materials and equipment as well as construction delays. Offshore wind projects also face delays, and partly as a result, only a quarter of projects will meet a 2021 deadline. Since the government will no longer grant feed-in tariffs subsidies for conventional solar and onshore wind projects after 2020, projects delays may exacerbate financial distress faced by the SMEs in the sector.

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Debate on Smog Contradiction:

Why is Beijing heavily affected by smog, even when the city is closed down due to COVID-19?

In 2013, China declared war on air pollution and since then air quality in Beijing has improved significantly. The national Chinese New Year festivities were nevertheless marred by heavy smog in Beijing, although by that time (and shortly after) factories had already ramped down their production activities due to the coronavirus outbreak and traffic had partially ceased. Fueled by these developments, fierce debates were once again triggered in social media: What was really causing the smog? Experts agree that the main reason for Beijing's latest smog occurrence is a combination unfavorable weather patterns and continued industrial and residential emissions. Both sectors are least affected by the virus. However, the discussions in the energy sector are particularly focused on the question of whether the flue gas treatment of power plants is handled correctly and, on the prevention, and control of future pollution in the future. In the following four expert opinions are outlined:

He Ping, President of the International China Environment Protection Foundation (IFCE): Most of the Chinese power plants removed gas-gas heat exchangers (GGH) after flue gas DeNO_x and desulfurization. The desulfurization and de-NO_x process causes condensable particulate matter (CPM) emissions and excess ammonia escape. Low temperature, relatively high smoke humidity and condensable particles are the main causes of smog in northern China.

Wang Zhixuan, Chairman of China Electricity Council (CEC): China's ultra-low emission standards are stricter than those in industrialized countries, and they have made outstanding contributions to our fight against air pollution. Hence, there is no need to reheat the flue gas. On the contrary, flue gas heating requires energy and increases energy consumption.

Ren Chenhai, Academician at the China Environmental Research Institute: It is insufficient to only assess the quality of the atmospheric environment on the basis of PM_{2.5} levels alone. More attention should be paid to PM₁ as an important factor.

Zhou Hongchun, former Director General of the State Council's Development Research Center: There should be a concerted effort to combat air pollution. However, some existing solutions have created new problems. For example, denitrification and desulphurization should not increase PM₁ levels with ammonia and water vapor. Focus should be put on reducing PM₁, improving energy efficiency, cutting carbon dioxide emissions and minimizing costs.

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On 6 January 2020, China's National Energy Administration (NEA) held the kick-off meeting in Beijing for the electric power sector 14th Five-Year Plan. At the meeting it was decided that the 14th Five-Year Plan for the sector should focus on security, efficiency and green transformation, and innovation. Security includes improving demand response, optimizing power flow, and improving the grid. Efficiency and green transformation include energy conservation, efficient coal power, electrification of industry and transport, and reducing dependence on energy imports. Innovation will focus on both grid technology as well as power market reforms and connections with neighboring countries.

There are no separate plans for hydro, wind and solar power in the new Five-Year Plan. This illustrates a shift of focus for the renewable energy development in China, in that China is now focusing on increasing renewable electricity consumption, and increasingly letting the market decide how to meet quotas for clean energy consumption, instead of just setting ever-higher capacity targets. According to Zeng Ming from North China Electric Power University, multi-energy complementarity will be the emphasis of the work on supply side. Thermal power is expected to be used to adjust the peak for renewables. Energy storage technologies will also be considered to improve system flexibility. On the demand side, market is expected to play a larger role in the next five years as the subsidies and administrative targets slowly phase out. Price will serve a bigger role as the signal in the power market in the future when the grid parity is achieved. Development of demand-side response resources and ancillary services market are also the focus for the next five years on the demand side. One of the obstacles that need to be overcome in the 14th Five-Year Plan period is the reliance of the large-scale energy transmission from the west to the east. Therefore, for the next five years, a system that combines centralised and distributed energy resources, long-distance transmission and local consumption will be promoted.

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NDRC issues goals and targets for regional power trading

The National Development and Reform Commission (NDRC) has issued a new policy that calls for greater standardization of electricity trading institutions. The policy includes items related to improved transparency of trading platforms, details on ensuring efficient, market-based price formation, and establishing systems for power market risk prevention and control. The document sets year-end 2020 as a target for improving regional market integration, setting clear electricity dispatch rules and procedures, and improved regional integration. The document calls for further integration of regional electricity trading institutions in Jing-Jin-Ji (Beijing, Tianjin, Hebei), the Yangtze River Delta, and the Pearl River Delta. The document sets the end of 2025 as the date for completing a nationwide unified power trading system with standardized regulatory bodies, complete functions (mid- and long-term trading, spot markets, ancillary services markets), and efficient coordination.

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NEA issues draft on information disclosure for spot markets

The NEA's new draft on information provides additional details on what types of information must be shared among different market participants to enable a well-functioning spot market—which generally requires much more information transparency for participants versus traditional dispatch schedules. Renewable generators should provide day-ahead and real-time generation forecast and data. Grid companies should disclose basic grid information, grid equipment information, and information about spot trading regions with nodal prices. Information related to the market boundaries, forecasting, and operation should be disclosed by power trading or dispatching organizations. Additionally, to enable more accurate forecasting, with the consent of the user, market operator will allow electricity retailers to access end-user's historical usage or load curve information.

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Renewable energy feed-in tariff subsidy limits set for 2020

NEA has announced that in 2020 the number of renewable energy projects receiving subsidized feed-in tariffs will be limited to the amount of the increase in funds collected from electricity consumers via the renewable surcharge, estimated at RMB 5 billion. New offshore wind power and solar thermal projects will no longer receive central government subsidies, with the exception of plants that are already approved and able to connect to the grid before year-end 2021. The policy also states that renewable feed-in tariffs levels will no longer be published by the government, but rather tariffs will be determined by bidding on a national renewable energy information management platform. The policy essentially continues recent efforts to scale back subsidies and shift renewable energy towards grid parity or market-based prices.

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NDRC proposes reduced 2020 PV feed-in tariffs

The NDRC Pricing Department has set a preliminary guidance calling for an RMB 0.07-0.08/kWh reduction in feed-in tariffs (FIT) for central PV stations, essentially matching the results of PV tenders in 2019. Because the resulting FIT prices are similar to the on-grid coal tariffs in many projects, it is likely that eight provinces would not see bids for PV FITs. As a result, FIT-supported projects in 2020 may decline to 26-30 GW, among them 6.5 GW of PV projects for household use. 2020 bidding activities should be completed early in May, to ensure projects can connect to the grid by the end of the year.

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Coal, oil & gas

NEA releases risk warning on 2023 coal power planning and construction

The NEA's latest coal plant early warning risk index has given more provinces the green light to construct new coal power plants in 2023. The index is based on coal capacity versus expected local demand, resource constraints, and the economics of coal plant operation in the province. There are 23 provinces classified as green in 2023 on capacity adequacy compared to only 2 provinces in 2020. However, considering the provinces marked as red or orange any of the three metrics (capacity adequacy, resource constraints, and economic risk), for 2023 a total of eight provinces are rated as green for new coal construction on all three risk maps—namely, Guangdong, Guizhou, Chongqing, Fujian, Hainan, Hunan, Hubei, and Inner Mongolia. That's up from just 6 provinces rated green on all three risk measures in the risk warning for 2022 and 5 provinces for 2021. In 2019, reports from the International Energy Agency, the Rocky Mountain Institute, and the China National Renewable Energy Centre all indicated that China's electricity demand growth and electrification of industry, heating and transport could be met mainly through a combination of clean energy, energy efficiency measures, and improved regional power market integration.

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China's crude oil production grows for the first time since 2016 while natural gas import growth slows sharply

According to China's oil and gas production and import data in 2019 published by the National Bureau of Statistics on 17 January 2020, China produced 190 million tons of crude oil in 2019, an increase of 0.8% compared to 2018, reversing the downward trend since 2016. Meanwhile, China remains to be the biggest importer of oil in the world, with approximately 500 million tons of oil imported in 2019, meaning that 70% of oil consumption in China is from imports.

In terms of natural gas, China's production in 2019 reached 125 million tons, an increase of 9.8%

compared to the previous year, while gas import reached 96.6 million tons, an increase of 6.9% compared to the previous year. The growth rate of gas imports in 2019 was significantly lower than the 32% growth experienced in 2018.

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Grid, energy storage & consumption

10 tons of hydrogen production per day: first hydrogen-based energy storage project in Shanxi province

On 6 January 2020, Datong Youyun Co. Ltd. and Yungang Thermo-Electricity Corporation signed a strategic cooperation agreement to start the first hydrogen-based energy storage project in Shanxi province. With a total investment of RMB 600 million (approx. 77 MEUR), the project will use Yungang's existing combined heat and power plants and accommodate wind and solar energy that would otherwise be curtailed. The goal of phase 1 is to build a 150 MW distributed solar PV plant plus a 100 MW wind plant, combined with a 150 MW electric boiler and a 10 MW high-pressure hydrogen storage system. Phase 2 will add a 50 MW high-pressure hydrogen storage system to provide 10 tons/day of hydrogen, sufficient for 20 typical 500 kg/day hydrogen refuelling stations.

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World's first commercial hydrogen-powered tram launched in Foshan

The first phase of a demonstration hydrogen fuel cell tram line has been inaugurated in Foshan. The project is a result of a cooperation between Ballard Power Systems Inc., a Canadian fuel cell manufacturer and CRRC Qingdao Sifang Co., Ltd. The line in Foshan will be 17.4 km long and consist of 20 stations. The first phase of 7 km with 10 stations was launched in December 2019. The trams use a 200-kW engine, have a maximum operating speed of 70 km/h, can carry up to 285 passengers, and run for 100 km before refueling is needed.

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Business

Trade associations: COVID-19 severely impacting business operation in China

Findings of a survey conducted by the European Union Chamber of Commerce in China (EUCCC) and the German Chamber Greater China (AHK) show that the impact of the coronavirus outbreak has been severe on European and German businesses. Respondents report being subject to restrictions and conflicting regulations, with many businesses that have been permitted to reopen lack staff and/or goods shortages, face decreasing demands or logistical problems across China. Half of respondents plan to lower annual business targets and forecast a double-digit drop in revenues. At the same time, European businesses actively support China's efforts in fighting the virus. More than 70% donated medical equipment or helped financially and logistically.

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Deutsche Gesellschaft für Internationale Zusammenarbeit
(GIZ) GmbH

Registered offices

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www.giz.de



Bonn and Eschborn, Germany

Friedrich-Ebert-Allee 32 + 36
53113 Bonn, Germany
T +49 228 44 60-0
F +49 228 44 60-17 66

Dag-Hammarskjöld-Weg 1 - 5
65760 Eschborn, Germany
T +49 61 96 79-0
F +49 61 96 79-11 15

E info@giz.de
I www.giz.de

Registered at

Local court (Amtsgericht) Bonn, Germany: HRB 18384
Local court (Amtsgericht) Frankfurt am Main, Germany: HRB 12394

VAT no. DE 113891176
Tax no. 040 250 56973

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Thorsten Schäfer-Gümbel

In charge of this newsletter:

Yuxia Yin, yuxia.yin@giz.de
Anders Hove, anders.hove@giz.de

Editor(s):

Yuxia Yin, yuxia.yin@giz.de
Anders Hove, anders.hove@giz.de
Maximilian Rysse, maximilian.ryssel@giz.de
Weng Fangping, fangping.weng@giz.de
Qian Wenyun, wenyun.qian@giz.de
Zhao Kaiming, kaiming.zhao@giz.de
Nicole Kim Fuerst, nicole.fuerst@giz.de

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