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CHINA ENERGY POLICY NEWSLETTER

Boosting Renewable Energy as Part of China's Energy Revolution

1. China energy transition updates

China no longer funds any new overseas coal power projects

On September 22, 2021, Chinese President Xi Jinping announced at the 76th UN General Assembly that China will no longer fund overseas coal power projects.¹ Currently, about 12% of coal power plants operating overseas are related to China's state-owned banks, public utilities, equipment manufacturers and construction companies, with participation taking the form of direct investment, EPC, and export of equipment and technical services. The majority of these investments took place between 2015 and 2017, mainly in South Asia and Southeast Asia. However, a large number of coal power projects have been cancelled or shelved by host countries since 2017 due to weakened project economics, public environmental concerns and overcapacity, severely dampening China's enthusiasm for investing in overseas coal power project.² At the same time, developing countries are working to implement the *Paris Agreement* commitments. In 2018, China issued the *Belt and Road Green Investment Principles*, which aims to incorporate low-carbon sustainable development into the projects of countries along the *Belt and Road*.³ As a result, China's overseas coal power investment has continued to decline, while renewable energy investment has increased and accounted for 57% of annual overseas energy investment in 2020, far exceeding that of coal power.⁴

¹ “习近平出席第七十六届联合国大会一般性辩论并发表重要讲话,” Xinhua News Agency, 22 September, accessed at http://www.gov.cn/xinwen/2021-09/22/content_5638596.htm?jump=true.

² “中国投资的海外燃煤电厂中，取消项目 是在建项目装机量的4.5倍,” Center for Research on Energy and Clean Air, June 2021, accessed at <https://energyandcleanair.org/wp/wp-content/uploads/2021/06/CH-CH-Overseas-Coal-Briefing.pdf>.

³ “中英机构携手发布《“一带一路”绿色投资原则》,” Xinhua News Agency, 1 December 2018, accessed at <https://baijiahao.baidu.com/s?id=1618626575923507033&wfr=spider&for=pc>.

⁴ “中财绿金院院长王遥：中国不再新建境外煤电，对“一带一路”国家意味着什么?,” 21st Century Business Herald, 23 September 2021, accessed at <https://baijiahao.baidu.com/s?id=1711670104547803310&wfr=spider&for=pc>.

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NDRC clarifies the energy consumption dual-control mechanism

China has set a target for energy intensity⁵ reduction since the 11th Five-Year Plan period (2006-2010), which has been further upgraded to dual control targets of energy intensity reduction and energy consumption cap in the 13th Five-Year Plan period (2016-2020). The National Development and Reform Commission (NDRC) recently emphasizes to continue making the energy intensity reduction a binding target in its five-year plans in the future, and set reasonable targets for energy consumption cap. The NDRC will break down the five-year dual control targets into provinces, of which the energy intensity reduction targets will include both binding and incentive indices; while the sum of the provincial energy consumption caps will be lower than the national cap, with a difference reserve for major national projects in energy use and renewable energy⁶ development. Each province will set annual targets based on local situations and report them to the NDRC for the record. The NDRC will strengthen the guidance on new energy-intensive and emission-intensive projects with annual energy consumption of 50,000 tons of standard coal and above.⁷

NDRC requires all coal power plants to participate into market-oriented trading

The government will fully open the coal power price and industrial and commercial electricity price to the market.⁸ After the reform, 100% of national coal power generation will participate into market-oriented trading. Apart from spot power market, the coal power price adopts “baseline tariff + floating tariff”, implying the transaction price cannot be 20% above or below the baseline determined by the DRCs. As coal will continue to dominant China’s power mix in certain years, fully open coal power price will rapidly increase the share of market-based power price on generation side and speed up the completion of market rules. These will effectively lead other power sources entering the market and create better environment for the complete liberalization in the future.⁹ On demand side, the NDRC cancelled the guaranteed electricity price for commercial and industrial users, all 10 kV above relevant users are required to participate into market-oriented trading. While in order to secure people’s livelihood, the electricity prices of agricultural and residential users are still determined by the DRCs.

Summary of the further in-depth reform of coal power price

	Before the reform	After the reform
Share of market-oriented trading for coal power generation	70%	100%
Share of market-oriented trading for commercial and industrial users	44%	100%
Coal power price	Baseline tariff + floating tariff (+10%/-15%)	Baseline tariff + floating tariff (+20%/-20%) <ul style="list-style-type: none"> • For energy-intensive enterprises, the prices do not have upper limit • For electricity traded in spot power market, the prices do not have upper and lower limits
Agricultural and residential electricity prices	Determined by the DRCs	Determined by the DRCs

Source: National Development and Reform Commission (NDRC), October 2021

⁵ Energy intensity refers to total energy consumption per unit of GDP.

⁶ Each province has established an annual binding target and an incentive target for renewable power consumption. If the province exceeds the incentive target for the year, the renewable power consumption above the binding target does not count into the province's total energy consumption.

⁷ “国家发展改革委关于印发《完善能源消费强度和总量双控制度方案》的通知，发改环资〔2021〕1310号”，National Development and Reform Commission, 11 September 2021, accessed at http://www.gov.cn/zhengce/zhengceku/2021-09/17/content_5637960.htm.

⁸ “国家发展改革委关于进一步深化燃煤发电上网电价市场化改革的通知，发改价格〔2021〕1439号”，National Development and Reform Commission, 11 October 2021, accessed at https://www.ndrc.gov.cn/xxgk/zcfb/tz/202110/t20211012_1299461.html?code=&state=123.

⁹ Yang Juan, “政策解读 | 进一步深化电价市场化改革，充分发挥市场配置资源作用”，Academy of Macroeconomic Research, NDRC, 12 October 2021, accessed at <http://www.cbminfo.com/cbmf/xgxy/dl14/7110582/index.html>.

2. Is the energy consumption dual-control the main reason for electricity restrictions in China?

Since September, more than 20 provinces in China have seen power supply restrictions, affecting the electricity consumption of both production companies and residents. Some analysts say this is the follow up measures of the energy consumption and intensity dual-control results, which requires provinces that haven't meet energy intensity reduction targets to shut down energy-intensive and emission-intensive enterprises in order to carry out rectification. Some provinces are indeed under pressure to meet their dual control targets, and specific local governments had restricted electricity last year to tackle the issue. But the energy consumption dual-control is not the main cause of the power supply restriction for this time, and will not impact on people's livelihoods. For instance, the problem has been most pronounced in the northeast, where load shortfalls have been as high as 10-20% during specific short period of time. However, there is very little pressure to complete the energy consumption dual-control targets in the northeast region. The main reasons include: 1) the expansion of production by manufacturers after the epidemic have pulled up electricity demand; 2) soaring coal prices and the inability to transmit increased costs to users has led to a reduction in the motivation of thermal power plants to generate electricity.¹⁰

Global commodity price hikes and strong demand for industrial production in China have strongly expanded demand for electricity and coal. In the aftermath of the epidemic, a large number of global orders for commodity production poured into China. From January to August, 2021, the value of China's exports rose 23.7% year-on-year and 22.8% over the same period in 2019; electricity consumption rose 22.8% year-on-year, setting the largest difference between the growth rate of power generation since 2003. The growth rate of electricity consumption for the whole country is expected to reach 12% this year, double that of 2019. In the first half of this year, total national coal consumption rose 10.7% year-on-year. In contrast, raw coal production grew by only 6.4% year-on-year and port coal stocks fell by 8.3% year-on-year, reflecting a pattern of tight electricity and coal supply.

Global fuel price increases are further pushing up coal prices and reducing the incentive for thermal power plants to generate electricity. In the context of soaring global fuel prices, the coal prices in China have reached a high level since 2008, with the coal price exceeding RMB 1,000/ton (5,500 kcal/kg NAR) in September, a nearly double year-on-year increase. The current situation makes it difficult for the price of coal to come down quickly. At the same time, the coal power price has a floating ceiling, and the government controls over the electricity prices on end-user side, so the cost of coal cannot be effectively transferred to the grid and users but rather be the power plants to bear. According to estimates, large-scale power generation enterprises can lose more than RMB 100 million a month, which to a certain extent affects the incentive of power generation.

Some provinces are under pressure to complete the energy consumption and intensity dual-control targets in 2021, and directly take the way of shutting down production to reduce energy consumption. Due to the epidemic in 2020, some provinces have been approved to build new energy-intensive projects, including data centers, and many projects have been put into operation this year. Combined with the overall expansion of industrial production nationwide, total energy consumption rose rather than fell. In the fourth quarter, in order to fulfill the dual control targets for 2021, some central and eastern provinces have taken measures to shut down production and cut the electricity to thousands of enterprises, aiming to reduce the production capacity of industrial raw materials such as cement, calcium carbide, electrolytic aluminum and rebar.

On October 8, 2021, the State Council clearly announced series of measures to ease the pattern of tight electricity and coal supply, especially to guarantee the energy security of this winter.¹¹ Major solutions include: 1) take residential heat supply as top priority, e.g. the heating coal in northeast region will adopt 100% medium and long-term contract price this year¹²; 2) increase domestic coal production, e.g. 120 million tons of new coal production capacity has been released since August according to the NEA¹³; 3) state-owned coal power plants should generate electricity as much as possible, the government will postpone the deadline of tax payment as a compensation; 4) increase the floating ceiling of market-based coal power price from 10% to 20% above the baseline tariff and increase the floating floor from 15% to 20% below the baseline tariff, only for energy-intensive enterprises, the coal power prices do not have a power price ceiling. In addition, local governments should remain the principle of not expanding new energy-intensive and emission-intensive projects disorderly. In the meantime, to speed up the development of large-scale wind power and solar PV projects, as well as emergency reserves and dispatchable power sources.

10 Xu Ruiyao, "【专访】林伯强：三大因素导致拉闸限电，上调电价应小步慢走," Jiemian, 27 September 2021, accessed at <http://finance.sina.com.cn/tech/2021-09-27/doc-iktzqtyt8336399.shtml>; Hu

Xianhe, Jiang Huizi, "拉闸限电"七大焦点解读," Beijing News, 28 September 2021, accessed at <https://baijiahao.baidu.com/s?id=1712115645387914669&wfr=spider&for=pc>; "最严限电令来了！上千家企业停产，原料涨价层出不穷！我国为何限电，为何控能？," 51 ore, 24 September 2021, accessed at <https://www.163.com/dy/article/GKKEB17H0512MI6A.html>.

11 "李克强主持召开国务院常务会议," the State Council, 9 October 2021, accessed at <http://cpc.people.com.cn/n1/2021/1009/c64094-32247774.html>.

12 "国家发改委：东北采暖用煤将100%实行中长期合同价," the National Development and Reform Commission, 22 September 2021, accessed at <https://baijiahao.baidu.com/s?id=1711584419088348164&wfr=spider&for=pc>.

13 "国家能源局：煤炭增产保供措施已经见到实效," National Energy Administration, 9 October 2021, accessed at https://m.thepaper.cn/baijiahao_14832380.

3. From black to green - a Danish sustainable energy growth story

A case study of how an energy utility can transition from fossil fuels to renewable energy and the enabling regulatory framework that made it possible

State-owned energy companies in many countries willing to make the transition from conventional, fossil-fuel based thermal generation to renewable energy generation may not have that same opportunity to be global first movers that Denmark has had. **Ørsted** – the largest energy company in Denmark that has undergone a radical transition throughout the last decade, transitioning from a business based almost entirely on conventional fossil fuels to a financially successful company based almost entirely on renewable energy. Therefore, it is the prime choice for a case study to analyse *how did Ørsted transition from black to green energy whilst remaining profitable?*

Written with contributions from the Danish Energy Agency, including information from interviews with senior experts from government, academia and Ørsted, the report commences with a detailed timeline of events from Denmark's energy policy landscape and Ørsted's evolution. The purpose of this report is twofold. Firstly, it aims to provide an overview of the policy/regulatory aspects which helped accelerate the decarbonisation of Denmark. Secondly, based on a case study of the transition of the energy company Ørsted, the report aims to provide learnings and recommendations for other utilities which are about to follow a similar path. The report can be useful for regulators, policy makers and energy companies located across the globe in achieving a just, sustainable transition to renewable energy. Please download the full [English](#) report here.



With the right regulatory framework in place, it is not just possible but also vital for energy companies to transition to green energy, if they want to stay competitive and profitable going forward.



Based on Ørsted's transition, key recommendations for other energy companies include:

Create a sustainable vision:

- Make good use of the long-term planning policies in place
- Contextualise the strategy to the regulatory framework
- Develop a holistic vision within the dynamic landscape

Develop an exit strategy for fossil fuels:

- Engage actors and government agencies in the divestment plans
- Re-evaluate the asset to fit the future of the sector
- Abandon investments when regulations and public opposition hinder future opportunities

Develop an entry strategy for renewable energy:

- Attract finance to new renewable energy projects validating the proof of concept
- Engage, align and educate stakeholders
- Be a first mover: enjoy the benefits and be ready for the challenges
- Value joint ventures: share the skills
- Build up human resources: harvest internally, retrain personnel, create synergies with existing base and attract new talents



About Ørsted (formerly DONG Energy)

- DONG (Danish Oil and Natural Gas Company) was established in 1974, as a full state-owned energy company.
- In 2006, after a merger of 6 power companies, DONG Energy A/S had a portfolio based 85% on fossil fuels, making it one of the most coal-intensive companies in Europe, and responsible for around one third of Danish emissions. At that time it was 73% owned by the Danish state.
- In 2019, two years after the company changed its name to Ørsted, the company had successfully implemented a new green business model, with a portfolio of 90% cent renewable energy, and more than doubled market capitalisation in two years. The company remains 50.1% owned by the Danish state.
- Ørsted has set a target of carbon neutrality from their energy production in 2025 and climate neutrality for their whole supply chain by 2040, in line with the Paris Agreement's 1.5 degree goal.

4. Policy monitoring

2021-09-24

[http://zfxgk.nea.gov.cn/2021-](http://zfxgk.nea.gov.cn/2021-09/24/c_1310215100.htm)

[gov.cn/2021-](http://zfxgk.nea.gov.cn/2021-09/24/c_1310215100.htm)

[09/24/c_1310215100.htm](http://zfxgk.nea.gov.cn/2021-09/24/c_1310215100.htm)

NEA improves the management regulations of new-type energy storage projects

Notice on issuing the New-type Energy Storage Project Management Regulations (provisional), NEA Technology Regulations [2021] No. 47

To avoid disorderly development of new-type energy storage industry, local energy authorities should establish local management systems under the guidance of the State Council energy authorities to supervise the planning, policy implementation, grid-connection, power dispatch, market transactions and operation procedures. As there have been many accidents with chemical energy storage batteries globally, with the primary principle of "safety first", the *Regulation* formulates the safety management requirements for the whole life cycle of new-type energy storage projects. The NEA clearly requires the project owner, especially the cascade utilization projects, to focus on monitoring the operational status and assessing the safety status to avoid project overdue.

2021-09-24

[http://www.nea.gov.cn/2021-](http://www.nea.gov.cn/2021-09/24/c_1310207300.htm)

[gov.cn/2021-](http://www.nea.gov.cn/2021-09/24/c_1310207300.htm)

[09/24/c_1310207300.htm](http://www.nea.gov.cn/2021-09/24/c_1310207300.htm)

NEA propose to optimize the business environment of energy sector

Notice on Public Consulting on the Implementation Opinions on Deepening the Reform of Delegating, Regulating and Optimizing Service and Optimizing the Business Environment in the Energy Sector (Draft for Solicitation of Comments)

The policy draft is currently soliciting public options. For newly built new energy projects, administrative departments should simplify the filing procedures, including the unconditional filing of subsidy-free projects. For projects that have already obtained administrative licenses, no additional processes or application materials should be added to the procedures of commence of construction, grid connection, and completion acceptance. To ensure a stable supply of energy, the government will further encourage and optimize the long-term agreement mechanism between energy enterprises and major users.

2021-09-10

[http://zfxgk.nea.gov.cn/2021-](http://zfxgk.nea.gov.cn/2021-09/10/c_1310210548.htm)

[gov.cn/2021-](http://zfxgk.nea.gov.cn/2021-09/10/c_1310210548.htm)

[09/10/c_1310210548.htm](http://zfxgk.nea.gov.cn/2021-09/10/c_1310210548.htm)

NEA sets quantitative targets for geothermal energy towards 2035

Opinions on Promoting the Development and Utilization of Geothermal Energy, NEA New Energy Regulations [2021] No.43

By 2025, the total installed capacity of geothermal power generation aims to be doubled compared to 2020, and number of demonstration projects should be built in areas with good resource conditions; the area of geothermal energy for heating (cooling) should increase by 50%.¹⁴ All regions will basically establish a sound and standardized management process, information statistics and monitoring system for geothermal energy development and utilization. By 2035, these two targets will be doubled compared to 2025. In addition, the government encourages the integration of geothermal energy with tourism, breeding and industrial sectors, and the development of demonstration projects based on geothermal resources.

¹⁴ According to the 13th Five-Year Plan for Geothermal Energy Development and Utilization, China's geothermal power generation installed capacity target reached 527 MW and the geothermal energy for heating (cooling) area target reached 1.1 billion m² in 2020, but the government has not released actual data.