

The timeline and roadmap for the development of the national power market system clarified

On January 18, 2021, the NDRC and the NEA jointly issued a policy document providing guidance for the establishment of a unified national power market system. The government aims to preliminarily establish a national unified power market system by 2025, that is, the coordinated operation of the national market and the regional markets and provincial (district, municipal) markets, including the integrated regulation design of medium- and long-term contracts, spot power market and ancillary service market mechanisms; the scale of market-based transactions and green power transactions should increase significantly, and market transactions and pricing mechanisms that are conducive to the development of new energy and energy storage should have taken shape. By 2030, the system will be established essentially, the power market at all levels achieves joint operation, new energy will fully participate in market-based transactions, and market players will be able to compete fairly and choose independently.¹⁸

This means that China will adopt a top-down approach to promote the construction of the national power market system. It is different from the reform path of power marketization in Europe. In Europe, the national and regional power markets are gradually coupled from the bottom up, while China establishes a top-level design first, then the government departments promote the integration of markets at all levels to this goal.

Current situation and challenges of the national power market system

Since the government launched the new-round power system reform in 2015, China's power marketization has continued to improve. By the end of 2021, the national market-oriented power transaction volume has reached seven times that of 2015, accounting for 44.6% of the total national power consumption. China has established two national-level power trading centers in Beijing and Guangzhou, which are responsible for inter-provincial power trading within the State Grid and Southern Power Grid regions respectively, and the provinces also set up provincial-level trading centers to carry out intra-provincial transactions. At present, the medium- and long-term contracts of inter-provincial and intra-provincial power transmission have been normalized, with thermal power as the main seller and industrial and commercial users as major buyers. At the same time, eight provinces have started pilot spot trading, and six more pilots will start trial operation by the end of June 2022.

As the proportion of renewable power generation continues to increase, the power grid has an increasing demand for inter-provincial power exchange, the largest inter-provincial exchange of electricity has accounted for 23% of the power load of the entire grid in 2021. According to the current rules, inter-provincial transactions are mainly determined through bilateral agreements between local governments, then for surplus electricity to do intra-provincial transactions, which makes it impossible for power plants outside the province to compete directly with power plants in the province. Therefore, unifying transaction rules and transaction varieties and giving users the autonomy to purchase electricity are the key points of the reform.

Improve the adaptability of the power market to a high proportion of new energy¹⁹

The document proposes **to transform the bilateral agreements on inter-provincial power transmission into medium- and long-term contracts authorized by the government**, to encourage power generation enterprises to conduct direct transactions with electricity sales companies and users, and promote the dynamic connection of price formation mechanisms in inter-provincial and intra-provincial markets, in order to optimize the allocation of national power resources to the greatest extent possible. This transformation will start from incremental electricity consumption and go gradually into the electricity consumption stock.

To achieve the goal of *fully realizing the market transactions of new energy by 2030*, the document proposes **to establish peak shaving services in the spot power market and establish a cost recovery mechanism for being capacity reserves**. At present, peak shaving market in China is independent in different regions. For example, in Northeast China, thermal power plants take the initiative to reduce the load and get benefits from new energy power plants when new energy output is booming, which means that the benefits of the peak shaving market are purely a game between thermal power and new energy.

After integrating the peak shaving market into the spot power market, part of the peak shaving cost will be passed on to users, allowing all beneficiaries to pay for peak shaving. This is consistent with the direction of improving the cost-sharing mechanism for ancillary services that the government has been vigorously promoting. In addition, thermal power has always played the role of a backup machine when the output of new energy is insufficient, but the utilization hours of these units are relatively low, and it is difficult to support the survival of power plants only by relying on the actual power generation. Therefore, the document proposes **to establish a market-oriented cost recovery mechanism, such as a compensation system, capacity market and short-term high electricity prices with very high or no upper limit**, to ensure the capex recovery of these reserves.

Other market-based trading mechanisms that promote the consumption of renewable energy, such as green power trading and distributed market-based trading, will also be encouraged.

¹⁸ "国家发展改革委 国家能源局关于加快建设全国统一电力市场体系的指导意见，发改体改〔2022〕118号," National Development and Reform Commission, National Energy Administration, 18 January 2022, accessed at https://www.ndrc.gov.cn/xxgk/zqfb/tz/202201/t20220128_1313653.html?code=&state=123.

¹⁹ "全国统一电力市场路线图确定，电力行业再启格局之变," Caijing, 28 January 2022, accessed at https://www.sohu.com/a/519660220_120814277.