



Analysis on the Influence of Relevant Policies of Power Grid Agency Purchase on the Electricity Market in Jiangxi Province

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Abstract. In recent years, the state has successively promulgated the “Notice on Further Deepening the Market-Based Reform of On-grid Electricity Price for Coal-fired Power Generation” (Fa Gai Price [2021] No. 1439) and the “Notice of the General Office of the National Development and Reform Commission on Organizing and Carrying out the Agency for Power Purchasing by Power Grid Enterprises” (Fa Gai Ban Price [2021] No. 809), to promote the full access of industrial and commercial users to the market and improve the power market mechanism. The promulgation of the new policy has brought an impact on the original power market system, and it is urgent to study the specific impact of the policy and the response measures of enterprises. This paper firstly interprets the issuance policy, and analyzes the impact of the policy implementation on the power market in Jiangxi Province. Finally, according to the above impact, it puts forward suggestions for power companies to better adapt to policy changes and market development.

Keywords: Agent purchase of electricity · Electricity Market

1 Introduction

Since the promulgation of Zhongfa No. 9 document in 2015, the National Development and Reform Commission has followed the general idea of “controlling the middle and letting go of the two ends”. The reform of electricity marketization has been further promoted, and the prices of competitive links for development. Significant progress has been made in the reform of the electricity system. However, in recent years, our country’s coal prices have risen sharply, and under the environment of tight energy supply, the role of the electricity market in finding prices and guiding users to use electricity reasonably has not been fully manifested. Therefore, the state has successively promulgated the “Notice on Further Deepening the Marketization Reform of On-grid Electricity Price for Coal-fired Power Generation” (Fa Gai Price [2021] No. 1439) (referred to as Document No.

1439) and the “General Office of the National Development and Reform Commission on Organizing the Development of Power Grid Enterprise Agents” Notice on Matters Concerning the Purchase of Electricity (Fa Gai Ban Price [2021] No. 809) (Document No. 809 for short), it is hoped that this will further deepen the market-based formation mechanism of on-grid electricity price for coal-fired power generation, promote industrial and commercial users to enter the market in an all-round way, and improve electricity market mechanism.

According to the available research results, the articles [1, 2] all interpret the current agency power purchase policy, and the articles [3–5] also analyze the impact of the promulgation of the policy on the development of the power market and the operation of power grid enterprises. However, none of the above articles has studied the impact of the implementation of this policy on the Jiangxi electricity market. Therefore, in order to help Jiangxi province analyze the contents and impacts of policy documents and better adapt to the changes brought about by policies, Therefore, in order to help Jiangxi province to analyze the content and impact of the policy document and better adapt to the changes brought about by the policy, this paper will base on the current situation of the power market in Jiangxi province to interpret the documents issued by the state, and then analyze in detail the impact of the promulgation of the power purchase policy on the power market and power companies in Jiangxi Province. Finally, it proposes suggestions to power grid companies for the above impacts.

2 Interpretation of Agency Power Purchase Policy

In order to help our country achieve the dual-carbon goal, and to promote the transformation of coal-fired power, and ensure the safe and stable supply of electricity, the National Development and Reform Commission recently issued Document No. 1439 and Document No. 809. The two documents issued this time require all localities to promote all industrial and commercial users to enter the electricity market in an orderly manner, and for users who have not purchased electricity directly from the electricity market for the time being, the power grid companies shall purchase electricity on their behalf. It is also required to establish an agency power purchase mechanism for power grid enterprises to ensure the smooth operation of the mechanism, orderly and smoothly realize all industrial and commercial users entering the power market, and promote the accelerated construction and development of the power market. Document No. 1439 emphasizes that the market-oriented electricity volume and electricity price of coal-fired power generation should be clearly released, and all coal-fired electricity will enter the market. Catalog electricity prices for industry and commerce are canceled, and users who have not purchased electricity directly from the electricity market will purchase electricity on behalf of grid companies. The floating range of mid- and long-term market transaction electricity prices will be expanded to plus or minus 20%. Resident agricultural users implement the current catalog electricity price. Document No. 809 emphasizes that in order to organize and carry out the agency power purchase work of power grid enterprises, it is necessary to adhere to the market direction and encourage new entrants to the market to form electricity prices by directly participating in the market. For users who have not directly participated in market transactions for the time being, the power

grid enterprises will purchase electricity as an agent through market-oriented methods. It is necessary to standardize and transparently implement, strengthen the supervision of agency power purchases, strengthen information disclosure, ensure service quality, and ensure that agency power purchases are fair, just and open.

3 The Influence of Agency Power Purchase Policy on Jiangxi Power Market

3.1 Impact on Electricity Market Trading Rules

3.1.1 Impact on Coal Price Convergence

Since 2021, fuel prices such as coal and natural gas have remained high. Since the coal-electricity linkage mechanism has not yet been established, thermal power companies are facing the rapid increase in cost pressure and lack of direction, leading to large-scale overhauls in many thermal power companies, thus exacerbating power shortages. The severe shortage of electricity has catalyzed the implementation of the policy of Circular No. 1439 that the medium and long-term market transaction price range of coal-fired power generation should be expanded to a floating range of no more than 20% in principle. As another important measure for power grid enterprises to undertake the No. 1439 document, the starting point and end point are to achieve orderly and stable access of all industrial and commercial users to the power market, and to promote the accelerated construction and development of the power market. At present, the agency power purchase price is the weighted average price of monthly centralized bidding transactions. The price formation cycle is short, and there is a risk of large fluctuations. The power market needs to improve the trading rules to avoid this risk.

3.1.2 Impact on Electricity Bill Allocation

Clarifying the issue of cross-subsidies has always been one of the key points and difficulties in the new round of power system reform. This time, through the agency power purchase system of power grid companies, this part of the amount is clarified. According to the requirements of Document No. 809, after the implementation of the agency electricity purchase price mechanism, the new profit and loss (including deviation electricity charges) generated by power grid companies to ensure the stability of residential and agricultural electricity prices will be shared by all industrial and commercial users on a monthly basis. If the priority power generation with guaranteed quantity and price have surplus and cannot be released temporarily, the surplus electricity can be temporarily used as the source of electricity purchased by industrial and commercial users on behalf of power grid companies. After adopting different deviation electricity processing mechanisms for priority power purchasers and agency power purchasers, the agency power purchasers' deviation electricity charges are shared by themselves. Jiangxi Province should further improve the market transaction rules to make them consistent with the policy requirements, implement the mechanism for apportioning the differential electricity charges with agency power purchase users, and effectively connect the agency power purchase mechanism with medium and long-term time-sharing transactions, spot transactions, and cross-province and cross-regional transactions.

3.2 Influence on the Construction of Electricity Spot Market

3.2.1 Helping Spot Prices Reflect Real Supply and Demand

Although the traditional unified purchase and sales model makes the construction of power supply and the generation and use of electric energy subject to the macro-control of the state and the balance of supply and demand in the society, it also violates the time value and space value of electricity on the economic level to a certain extent. According to Document No. 1439, in principle, all users of 10 kV and above will enter the market, which will inject a lot of fresh energy into the power market, help to speed up the establishment of a price transmission mechanism, and guide market players to rationally distribute production. Acting as a price taker, grid agency power purchase users, like other market entities, participate fairly in market transactions such as bidding and listing, which will reflect the real supply and demand situation, form a more effective spot price, and play the decisive role of the market in resource allocation.

3.2.2 Promote the Transfer of Responsibility for Guaranteed Power Supply

The nature of guaranteed power supply is an institutional guarantee for the reliability of consumers' electricity consumption, rather than social welfare. Guaranteed power supply is neither low-cost power supply, nor "loss-making power supply", nor "punitive high-priced power supply". With the influx of many industrial and commercial users into the market and the emergence of new electricity sellers, the power grid companies' original users' electricity and potential new electricity will be eroded. The scale of power purchasing agents for power grid companies will be in a transitional stage of decreasing, and power sales companies will gain valuable learning opportunities and scale expansion opportunities. By cultivating companies with good performance and sufficient scale to sell electricity, it is not necessarily the power grid companies that provide guaranteed services. Guaranteed service providers can be determined by framing basic requirements and then auctioning and other more efficient methods, so that the responsibility for guaranteed power supply is transferred from power grid companies to electricity sales companies.

3.3 The Impact on the Market Entry of Power Purchasing Agents

The proposal of the new policy is mainly about the influence of agency power purchase price on industrial and commercial users. The comparison between agency power purchase price and direct participation in market transaction price undoubtedly affects the core factor for industrial and commercial users to choose whether to voluntarily give up power grid agency power purchase. The survey found that it is common for the power grid agency purchase price to be lower than the market transaction price. The main reason is that the priority power generation in the province is mainly hydro power, wind power, and photoelectric with lower prices, and there is still a large surplus in the protection of residential and agricultural parts. When there is only a small amount of the difference between the agency purchase of electricity and the market-based thermal power needs to be purchased, the electricity price of the agency industrial and commercial users will be lower than the direct market transaction price. For Jiangxi Province, in the flood season,

the optimal power generation with guaranteed quantity and price are higher than the priority purchase power, and the surplus low-price hydro power can be used as the source of power purchase by the agency power purchasers, resulting in low power consumption costs for the agency power purchasers. For market users, it has weakened the willingness of agency power purchasers to enter the market in disguise.

4 Recommendations for Power Grid Companies

4.1 To Comprehensively Deepen the Construction of Market Transaction Mechanism

The construction of a more complete and mature market transaction mechanism is conducive to the implementation of the agency power purchase policy. The first is to promote the establishment of a coal-electricity linkage mechanism, help the market to further improve the coal market price formation mechanism, and clarify the reasonable range of coal prices. Within a reasonable range, coal-fired electricity prices can be effectively transmitted, and coal prices, on-grid electricity prices, and user electricity prices can be marketed to achieve a “three-price linkage”, and implement the market-oriented reform of on-grid electricity prices for coal-fired power generation. Secondly, it is necessary to further improve the transaction rules of the electricity purchase market, improve the medium and long-term transaction rules, speed up the construction of the electricity spot market and auxiliary service market, explore the establishment of a market-oriented capacity compensation mechanism, improve the electricity market system, and form unified market rules including agency electricity purchases.

4.2 To Improve the Level of Agency Power Purchase Business

In order to adapt to the agency power purchase policy, improving the level of agency power purchase business is the key point. Based on the current situation of the power market in Jiangxi Province, collect relevant data, and comprehensively calculate the future power load power consumption form and power consumption according to historical data, and fully grasp the potential growth scale of market transactions, the characteristics of time-period changes, etc. At the same time, it is necessary to strengthen the management of electricity price enforcement, strictly conduct electricity audits, strengthen electricity price enforcement, and check the implementation of list-based management of users such as market transaction electricity prices and 1.5 times electricity prices for high-energy-consuming enterprises. Problems are promptly rectified. The situation involving blurred boundaries and the understanding of the electricity price policy should be reported in a timely manner, and communication should be unified and standardized.

4.3 To Enhance the Ability of Electricity Collection and Forecasting

To enhance the ability to collect and forecast electricity, first of all, it is necessary to expand the coverage of time-of-use metering for power purchasers, so as obtaining more accurate and detailed data. The annual and monthly curves analyzed based on these data

have more analytical value, and are more scientific and convenient for forecasting, to meet the requirements of contract signing in medium and long-term time-sharing contracts and support the requirements of spot trading on clearing and monthly settlement. At the same time, it is also necessary to build an intelligent power prediction model for classified users, comprehensively considering factors such as economic situation, policy changes, meteorological changes, etc., to reasonably predict the transaction price and electricity price of power grid enterprises purchasing power users. According to the research results of this paper, the two policy documents will have a positive impact on the development of Jiangxi power market and the operation of power grid companies, and promote the improvement and development of Jiangxi power market, further liberate the vitality of the market.

5 Conclusion

First of all, this paper is for the state issued 1439 and 809 documents, the content of the document and the policy of power purchasing agent analysis. Then, it analyzes the concrete influence of the policy implementation on the development of Jiangxi power market. In view of the impact of the power enterprises put forward relevant recommendations. Hope this article can help related enterprises better understand the policy requirements in the future, to adapt to market development. It is also hoped that more articles will be published in the future to analyze and make recommendations on the impact of this policy.

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