Research on Foreign Electricity Market Information Disclosure Systems and Revelations for China

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Keywords: Electricity market, Information disclosure, Electricity system reform.

Abstract. With the further development of the new round of electricity system reform in China, the information disclosure system will become one of the focuses of electricity market construction. First of all, the contents and rules of information disclosure in foreign electricity market are expounded by taking PJM and Nord Pool as examples. Then, the information disclosure situation of China's electricity market is extracted along with introducing the information disclosure mechanism of Yunnan electricity market, in addition, the status quo and disadvantages of the construction of third party information platforms in China are summarized. Finally, the six suggestions for the construction of electricity market information disclosure system in China are proposed.

Introduction

The mode of electricity market according to the market maturity is mainly divided into monopoly market mode, single buyer mode, the wholesale competition mode, and the retail competition mode. According to [1,2], foreign countries have established more mature electricity markets combined with the local resources distribution characteristics, power grid structure, and regional economic situation. Although the economic operating mechanism is different, but some lessons worthy of our reference. Although the resources distribution and economic operation mechanism are different, the electricity market construction experiences of other countries are worth China’s references.

Like what mentioned in [3], as information disclosure has become the power source of modern market development, it may be the eternal theme of market management. Furthermore, due to the low market transparency and imperfect information mechanism, the study of information disclosure is of theoretical and practical significance for the electricity market. At present, the research on information disclosure of electricity market has just started in China [4], which provides a broad space for the innovation of relative theories. This paper will study the information disclosure system of electricity market at home and abroad, summarize the relevant contents of China's electricity market, and provide relevant suggestions for the establishment of information disclosure mechanism of electricity market in China.

The Information Disclosure Situation of Foreign Electricity Market

The degree of disclosure of electricity transaction information is related to the degree of market opening. Almost all of the countries that have undergone or are in the process of electricity system reform, what’s more, Britain, Norway, Sweden, Australia and other countries have achieved the goal of electricity market self-operation.

The Pennsylvania-New Jersey-Maryland Electricity Market

The information disclosure system of American electricity market is perfect, which forms the information system linked with the electricity market. The Pennsylvania—New Jersey—Maryland electricity market (PJM) is one of the most famous regional electricity markets in the United States, PJM organizes various thematic meetings to facilitate communication between market members. At the same time, PJM also provides market members with relevant market training courses, so that all
members really understand the market operation logic, making them better compete in the market. The PJM official website has a special market data disclosure module, including the following four parts: (1) PJM operational data; (2) market management information; (3) data viewer; (4) wind and weather forecasts. In addition, PJM also announces: major market news (such as some popular discussion topics, market work results, changes in the power industry, etc.), important policies, and market development trends.

The Nord Pool

The Nord Pool is responsible for collecting and distributing market information in the Nordic area. When issuing above market information, it must follow these principles: (1) the published market information should be related to the market price; (2) the published market information can not disclose the business secrets of any member; (3) the market information should be distributed to all market members at the same time. It is the responsibility of all market members providing the following information to the Nord Pool: (1) information that is useful for correct pricing; (2) information necessary for the normal operation; (3) information necessary to collect and predict electricity volume; (4) information that the relevant government departments have the right to obtain. At the request of Nord Pool, the market members should also provide other matters that may affect the electricity market weekly or monthly.

The Information Disclosure Situation of Electricity Market in China

According to the relevant documents that have been publicly released in China, the information to be disclosed in the electricity market is divided into public information, open information and private information. The public information is released to the public, the open information is disclosed to the market members, and the private information is only available the specific market members. Up to now, China has set up 33 electricity trading center, the information released by the provinces mainly includes the transaction information, information of the market members, trading situation analysis and so on.

Taking Yunnan Province as an example, the information disclosed in the Yunnan Electricity Transaction Monthly Report mainly includes macro information, supply and demand situation, and market transactions. Through the report above, the relevant personnel can obtain these following information: (1) power generation capacity; (2) electricity sales, electricity industry operating rate, key industry product prices; (3) market trading volume and transaction price (divided into annual transactions, monthly transactions, and day-ahead electricity market transactions); (4) the number of new users, and enter conditions.

In addition to the provincial electricity trading center, other organizations such as sgcio.com, jiaonengwang.com and so on also publish national electricity transaction information, e.g. transaction information, related notices, trading patterns, and information interpretations. This is one of the best ways to understand current situation of China's electricity market, but the information on the websites is too complicated, each province’s trading information is mixed together, making the readers dazzled. Compared with the information module construction of PJM official website, these organizations are still just third-party platforms that integrate information on the electricity market, neither primary sources nor official channels.

It can be seen that current electricity market information disclosure system in China is imperfect, not systematic and not detailed, making the market members hardly use information for decision making. Compared with foreign electricity market disclosure systems, China should use the Internet to establish official information disclosure platform, so that the important transaction data is easy to be obtained.
Discussions and Suggestions

Classify Important Market Information

Electricity markets in the United Kingdom and the US classify market information with specific rules. The system automatically recognizes rights of the lander according to the ID, ensuring that the confidential information is not disclosed as well as the rights of market members are guaranteed. This is a good example for the establishment of China's electricity market information disclosure system, China has a vast territory, and the electricity market involves many different roles, so the market relationship is more complex [5]. Only to design a perfect market information classification system, can prompt market members to hand on reliable application materials, and make sure the electricity market is fairness and transparency.

Promote Market Information Segmentation and Systematization

Referring to the mature experience of foreign electricity markets, China's electricity trading center can divide the market information into basic information, daily information, weekly information, semiannual information and annual information. Among them, the basic information is the overview of market and industry situation; the daily information obtain daily trading volume, trading price and other real-time transaction information, but also can be forecasts of weather, wind volume and poundage of reservoir; according to the Nord Pool, the weekly information is suitable for publishing current industry information, as well as predictions of total power load and market trading power; the semiannual and annual information is mostly summary information, including the summary of market transactions, the update of market access and exit conditions and the publicity of market member credit status.

Establish a Sound Market Information Management System

Members of the electricity market, including the trading players, electricity trading centers and regulators, should be fully aware of the rights and obligations of using market information. The electricity market information disclosure system should meet the principle of completeness, reliability, relevance, importance and objectivity, the very three prerequisite that “do not publish false information, do not publish the information that the market members do not need, do not release redundant information” are the guarantee for the efficient use of market information. Relevant departments should introduce reasonable laws and regulations, standardize the behavior of market participants. From top to bottom, establishing a sound market information management system, while promoting the establishment of credit mechanisms in electricity market.

Fully Explore the Market Price Discovery Mechanism

China's current round of power system reform is a complete power industry structural adjustment project, its fundamental purpose is to reduce the government management of electric industry, making the price discovery mechanism in the electricity market play a role, e.g. the market can allocation resources by itself, transaction information can fully reflect the market real situation. Electricity spot market provides a broad space to the new power products, due to the high costs of new energy generation, electricity trading center can assist generators to do the production plan with publishing market predicted load, make sure the stability and impartiality of the trading price.

Flexible Disclosure Macro Information Combined with Regional Characteristics

The regional differences of climate in China is huge, the power structure is vary from province to province. Local power trading center can selectively publish macro information on the basis of the local energy structure and climate characteristics, making the information more targeted and practical. Due to the strong tendency of energy regional consolidation in China [6], based on the existing regional grids such as Tibet power grid, East China power grid and central China power grid, according to regional characteristics, the future large-scale regional power trading center can independently select the macro information disclosure content.
Build the Electricity Market Information Network

The stock market information disclosure system is gradually built up with the development of the stock market. China's electricity market information network construction can refer to the stock market information disclosure system. The information disclosure system of China's stock market includes basic information, stock information, regulatory information, and so on. The market information of each aspect is interrelated and complementary, the periodical information and the irregular information are issued separately, forming a relatively complete market transaction information network. Nowadays, there are more and more electricity transaction types in China, it is necessary to build a strict and effective information disclosure system as well as form an open, linkage and shareable electricity market information network, which would be of benefit to the healthy development of electricity market.

Summary

On the basis of the previous theoretical research work, the six Suggestions for the construction of electricity market information disclosure system in China are proposed: classify important market information, promote market information segmentation and systematization, establish a sound market information management system, fully explore the market price discovery mechanism, flexible disclosure macro information combined with regional characteristics, build the electricity market information network. It cannot be ignored that each country has its own economic development plans and industrial production characteristics, reform experiences from foreign electricity market should be applied to the local practice. In the new round of electricity system reform, the leap forward development of China's power industry will be realized in the combination of theory and practice.

References


