

# On the Latest Development Trend of Foreign Electric Power Market and Its Implications

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**Keywords:** foreign electric power market; development trend; implication

**Abstract.** With rapid economic and social development, the electric power market in China has made great progress in recent years. But since there is a large gap between electric power market in China and developed countries, the development trend of electric power market in developed countries tends to bring unusual implications to the development of electric power market in China. For this end, in this paper, we carry out a specific study on the latest development trend of foreign electric power market and its implications. Hopefully, our study can be of certain help to the better development of electric power industry in China.

## Introduction

Under the influence of a variety of challenges and reforms, such as international financial crises, nuclear accidents, global climate changes and development of clean energy, electric power market mechanisms and supporting policies in developed countries have always been reformed in recent years. On this basis, all kinds of explorations bring sufficient implications to the development of electric power market in China. To sort out the development rules of international electric power market and ensure that the electric power market in China wins more powerful support is the reason why we carry out a specific study on the latest development trend of foreign electric power market and its implications.

## Basic Modes of Foreign Electric Power Market

On foreign electric power market, two of the most common and basic modes are wholesale market competition and deregulation on sales-side. Here, wholesale market competition itself can be divided into two types, centralized trade and decentralized trade. With this knowledge, Tab. 1 visualizes wholesale market competition.

Tab. 1 Wholesale Market Competition

Mode	Typical Country	Characteristic
Centralized Trade	United States and Australia	A centralized optimization method is adopted, to realize organic integration between power dispatching and trading agencies; The trade is simple. But there are high requirements for cohesion and coordination. It fits into the characteristic of EU countries with numerous subjects.
Decentralized Trade	EU countries;	

With a simple knowledge of wholesale market competition, as a basic mode of foreign electric power market, we also need to clarify deregulation on sales-side. In an actual survey conducted by the author, it is commonplace in foreign countries that options of industrial and commercial users, etc. are deregulated. But in New Zealand and other countries, options are deregulated selectively, from small to large, which warrants our attention.

## The Latest Development of Foreign Electric Power Market

With a simple knowledge of basic modes of foreign electric power market, we also need to analyze the latest development of foreign electric power market in depth. Combined with literature review and the author's actual survey, the discussion in this section will focus on three aspects, i.e., the

building of large-scale trans-regional and trans-national electric power market, the rapid development of renewable energy and reinforcement of effective supervision, etc.

**2.1 The building of large-scale trans-regional and trans-national electric power market**

For the building of large-scale trans-regional and trans-national electric power market, it emerged as a result of the progress of power transmission technology and rapid development of renewable energy. In 2010, the United States advocated expanding the regional electric power market. This was the source of the building of large-scale trans-regional and trans-national electric power market. In the EU, the unification of energy market also falls into the category of the building of large-scale trans-regional and trans-national electric power market. Qijiang District implemented uniform power trade and prices. Tab. 2 visualizes the main process of electric power market combination in EU countries. From this table, we can gain a deep insight into the building of large-scale trans-regional and trans-national electric power market [1].

**Tab. 2 The Main Process of Electric Power Market Combination in EU Countries**

Time	Milestone
2009	Czech Republic and Slovakia realized intraday market combination;
2011	Two of the largest short-term power pools in Europe announced to establish a joint trading platform;
2013	The bidding area in Nord Pool Spot expanded;
2014	Several power pools in the EU achieved day-ahead market clearing jointly;

**2.2 The rapid development of renewable energy**

Although renewable energy economy has not yet fully surpassed conventional energy, various advantages of renewable energy begin to be valued by many developed countries. Fig. 1 shows common renewable energy. To ensure that this kind of renewable energy can achieve rapid development, many foreign countries adopt renewable energy incentives. Tab. 3 visualizes such incentives.



**Fig. 1 Schematic of Renewable Energy**

**Tab. 3 Common Renewable Energy Incentives in Foreign Countries**

Incentive	Typical Country	Detailed Description
Fixed electricity price	Germany and Japan	The government gives subsidies after clarifying the power generation price of renewable energy;
Subscription of green power	Netherlands	The government quotes and energy consumers subscribe;
Quota of renewable energy	United States and United Kingdom	It is provided that suppliers should provide part of renewable energy. The price is subject to the market.

**2.3 Reinforcement of effective supervision**

Apart from the above aspects, the reinforcement of effective supervision is also the latest development trend of foreign electric power market. This kind of reinforcement is mainly to strengthen government supervision, improve supervisory methods and guarantee market equity. Tab. 4 visualizes common means of effective supervision in foreign countries in recent years [2].

**Tab. 4 Common Means of Effective Supervision in Foreign Countries**

Country	Means
Australia	In 2012, Australia proposed to reform and implement a reasonable return rate of power grid business
United States	In 2012, the United States promulgated rules on disclosure of electric power market information;
United Kingdom	In 2010, the United Kingdom proposed to build a new sustainable power network supervision model;

### Implications of International Experience for China

Combined with the above content, we are able to understand the latest development trend of foreign electric power market in recent years intuitively. Domestic electric power market can get some implications to promote its own development. Tab. 5 visualizes these implications. From this table, we can gain a deep insight into the focus of this study.

**Tab. 5 Implications of International Experience for China**

Implication	Content
External environment and conditions directly concern the development of electric power market.	We need to build a scientific electricity price system, a strong power grid and a supervisory system adaptable to the market. Only in this way can we offer powerful support to the better development of electric power market;
With sustainable development as the goal	To realize the benign and sustainable development of electric power market, combined with social construction, ecological construction and development of clean energy;
To gradually deregulate users' options	To deregulate users' options and perfect the competition mechanism of electric power market;

### Conclusion

In the present study on the latest development trend of foreign electric power market and its implications, the author elaborates on basic modes of foreign electric power market, state of the art of foreign electric power market and implications of international experience for China. Hopefully, this paper can bring some inspirations to the development of electric power market in China.

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