The Propulsion of China’s Electricity-sold Side Reform

Ying Li and Jia-Qi Yu

ABSTRACT

In this paper, the situation of China’s electricity-sold side reform has been well showed, by combing the related policies of the power system reform, analyzing the development status of the electricity market in the pilot areas after the No.9 document and two measures adopted. But there are still some problems: guaranteed service is not perfect; lack of the supervision mechanism of electricity market; the legal system of electric power is not perfect. So suggestions are proposed to improve guaranteed service, strengthen the supervision mechanism of electricity market and legal system of electric power, by combining the overseas mature policies, the policy changes in the pilot areas and the development direction of laws and regulations.

THE SITUATION OF CHINA’S ELECTRICITY-SOLD SIDE REFORM

Since reform and opening, electric power industry of China grows rapidly. In order to break monopoly, reduce costs and promote the development of the market, in 2002 the State Council adopted Electric Power System Reforming Scheme [1] (No. 5 document). It makes the diversified pattern of Plant-Grid Separation and Price Bidding formed in Chinese electric power industry. However the price-fixing was sill serious. So in March 2015, Some suggestions on further deepening the electric power system reform [2] (No.9 document) is adopted by the State Council. In this suggestion, several initiatives are proposed, such as putting forward the reform of electricity prices orderly, improving the market trading mechanism and steadily putting forward China’s electricity-sold side reform(ESR). The power supply company splits into distributed and electricity-sold company. Electricity-sold side(ES) as the general name of retail companies is first mention through No. 9 document.

In order to implement the spirit of the No.9 document and related documents, actively and steadily push forward the ESR, and open sale business to social capital orderly, in October 8, 2016, The Management Measure of Electricity-sold...
Company Entry and Exit and The Management Measure of Orderly Release of Power Distribution Network Business (two measures) are adopted by National Development and Reform Commission(NDRC) and Chinese National Energy Bureau(CNEB)[3]. In addition, the two approach to the total assets of the enterprise also made a request, as shown in table 1.

<table>
<thead>
<tr>
<th>Total assets/million yuan</th>
<th>20-100</th>
<th>100-200</th>
<th>&gt;200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual electricity consumption/Billion kilowatt hours</td>
<td>6-30</td>
<td>30-60</td>
<td>unlimited</td>
</tr>
</tbody>
</table>

At present, the electricity-sold companies have set up in the provinces. There are two the national inter provincial electricity trade centers, including the Beijing electric power trading center and the Guangzhou electric power trading center. The establishment of two national provincial electricity trading center will make inter provincial trade contract. And there are 32 provincial electricity trading centers.

THE PROBLEMS OF CHINA’S ELECTRICITY-SOLD SIDE REFORM

**Guaranteed Service is Not Perfect**

Some developed countries have started the reform in the end of 20th Century. So it is necessary to compare China’s market access mechanism with those of France and Australia.

<table>
<thead>
<tr>
<th>Country</th>
<th>Asset requirements</th>
<th>Employees</th>
<th>Last resort supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>No explicit requirement</td>
<td>Corresponding technical service ability</td>
<td>Set the detailed basic generation service</td>
</tr>
<tr>
<td>Australia</td>
<td>Provide financial statements for the past 12 months</td>
<td>Experience in business and technical services as an energy retailer.</td>
<td>Set the detailed basic generation service.</td>
</tr>
<tr>
<td>China</td>
<td>More than 20 million yuan</td>
<td>The ability of economics energy and demand side management; more than Three years working experience</td>
<td>Guaranteed by the Power Grid Corp, not detailed</td>
</tr>
</tbody>
</table>

In table 2, two measures in allowing access to the company's assets on the scale of the assets have higher requirements, and the technical level of employees also have a more stringent norms[4]. But for guaranteed service, there is only specified that the guaranteed service should be provided by the Power Grid Corp in the area, but no detailed description.

**Lack of the Supervision Mechanism of Electricity Market**

In November 2015, NDRC and CNED approved Guangzhou as the first batch of pilot area. After one year development, the size of its power market transactions continue to expand.
### Table 3. 2016 3-9 Guangdong electric power trade situation [5]

<table>
<thead>
<tr>
<th></th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Price restitution coefficient (%)</strong></td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Trading power (Billion/kw·h)</strong></td>
<td>10.5</td>
<td>14.5</td>
<td>14.0</td>
<td>18.7</td>
<td>26.6</td>
<td>35.5</td>
<td>40</td>
</tr>
<tr>
<td><strong>Settlement average price (li/kw·h)</strong></td>
<td>-125.55</td>
<td>-147.93</td>
<td>-133.28</td>
<td>-93.90</td>
<td>-58.87</td>
<td>-43.38</td>
<td>-37.42</td>
</tr>
</tbody>
</table>

In Table 3, these situation can clearly reflect the power market competition system is not perfect, lack of the corresponding regulatory mechanism. From Mar to Jun the price restitution coefficient of Guangdong province adjusted from 25% to 50%. At first 75% of the price difference of both sides is returned to power generation companies. Generation companies always increase their success rate of the transaction by reporting bottom price. When adjusted to 50%, the generation side significantly reduce profits; in trading power, the trading volume rises from 10.5 billion kw·h to 40 billion kwh. More participate in transaction process; in settlement average price, sold-side company's final settlement average spread is getting smaller. With the gradual deepening of the user side, the purchase price also declined. Profit of ES is reduced, in August, some companies began to close.

### The Electric Power Legal System is not Perfect

China's ESR is still in its infancy, so it also lacks related rules to regulate the power market to establish and improve the relevant content and supervision:

1) Now electric power supply enterprise as one of the adjustment object of electric power law has been adjusted for the power supply enterprises and electricity sales enterprises. The regulations of the use range in electric power law should be changed.

2) The 25th art of electric power law stipulates that a power supply district can only set one power supply business. This leads the distributed PV projects illegal, which seriously hinders the development of distributed energy. In addition, it is obviously contrary with the spirit that release ES and increase market players.

3) The 59th art of electric power law provisions: power companies do not guarantee the quality of power supply or without prior notice to the user to interrupt the power supply, causing losses to the user, it shall be liable for compensation. Power supply company is the only subject of legal relationship with users before No.9 document, so the compensation liability is usually borne by the power supply company. But now the subject has changed. It is difficult to divide the responsibility with no definite rules. The subject responsibility of power operation accidents also need further division.

### SUGGESTIONS OF STRENGTHEN ELECTRICITY-SOLD SIDE REFORM

#### Improve Guaranteed Service

In order to ensure the safety and stability of the development of china’s ESR, we should improve the guaranteed service in two measures:
1) First, let users choose free stage by stage, priority to start from the industrial user. It is not applicable to important public utilities and public services temporarily.

2) The establishment of guarantee service provision clears its boundary conditions, the main responsibility. Guaranteed electricity suppliers are made by the government, and requires them must fulfill the obligations of power supply base when they not affect their customers with electricity and protect the power grid security situation. Then improve the corresponding compensation charges.

3) Make full use of the role of national trading centers. From international experience, build cross range multinational electricity market has become one of the development trend. So the market allocation of resources in two national trading centers will be fully played, to regulate their role, and guarantee power market supply and demand balance. Try to reduce the occurrence of the phenomenon that a sale of electricity companies cannot power.

Strengthen the Supervision Mechanism of Electricity Market

China needs improving the market supervision mechanism, formulating the corresponding policies to promote the reform, to deepen the process of China's electricity market. Guangdong announces a draft electricity trading rules, to supervise the reform.

The second article points: power users can not withdraw from the market within three years since the date of entering. It effectively controls the company's import and export, and prevents the vicious competition and the speculative behavior between the enterprises.

The eight article limit the application mode of power generation companies, according to the special circumstances of Guangdong power structure, prevents the sale of electricity companies to form alliances to control the sale of electricity market price monopoly

The establishment of trading rules is the beginning of the regulatory mechanism. There is still a long way to go and a lot of regulations need to be perfected, to ensure the health of the electricity market and the rights of the subject of the electricity market.

Strengthen the Legal System of Electric Power

The amendment of electric power law laid the foundation for deepening the reform. But China's ESR is still in trial operation stage, not mature enough. According to the development experience of various countries, the trend is inevitable.

1) Clear the adjust object. In No.9 document there is a new division of the type of electric power enterprises. So there should be a definite expression in law

2) Clarify the status of the power market and encourage its development. It is the focus of reform. So in order to improve the power market and the competitive mechanism of electricity-sold enterprises, effectively prevent unfair competition, it should be encouraged.

3) Increase market players and encourage the development of clean energy. Regional restrictions on the power supply business should be relaxed but not revoked.
4) Define the division of rights and obligations. Two measures make a preliminary regulation on the rights and obligations of electricity-sold company. But there is no clear division between the rights and obligations of the Power Grid Corp and electricity-sold companies. A lot of practical problems have not been solved yet. So it is necessary to make a careful division of the rights and obligations of the two subjects.

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REFERENCES