

THE CONSTRUCTION OF DIVERSIFIED FUNDING MECHANISM OF CHINESE RURAL POWER: A GRID UPGRADING PROJECT BASED ON THE PRACTICE OF RURAL POWER GRIDS UPGRADING IN CHINA

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Abstract:

During the twelfth Five-Year plan of China, in order to solve many problems that exist in the rural power grids and change the situation that some rural areas lack the supply of electric power, the Chinese government proposed a new round of rural power grid upgrading project. Rural power grid upgrading project need a large amount of funding. The current funding mechanism of rural power grid upgrading project China is single, and it can not fully meet the demand for funds of rural power grid upgrading project. Therefore, based on the current situation of Chinese market-oriented reforms and the rapid development of social organizations, making the design of diversified funding mechanism of chinese rural power grid upgrading project. By utilize of fiscal funds, private capital, social capital and financial capital to build the diversified funding mechanism of chinese rural power grid upgrading project, it will meet the demand for funds of rural power grid upgrading project.

Keywords: *Diversified Funding Mechanism; Chinese Rural Power Grid ;Upgrading Project ; Design*



In February 2010, Chinese central government put forward a specific demand in the “No.1 central government document” that to start a new round of rural power grids upgrade project to promote rural power grid capacity and to improve the reliability of power supply. On November 5th 2011, Premier Wen Jiabao chaired a State Council executive meeting. The meeting decided to implement a new round of rural power grid upgrading project. Therefore in the ten years later, a new round of rural power grid upgrading project full kicked off in China.

1. The Background and Purpose of Chinese Rural Power Grid Upgrading Project

Due to the outbreak of the 2008 financial crisis, China made response to the financial crisis and vigorously promoted the expansion project of the consumption of home appliances. Because people in rural areas can enjoy subsidies from the state when they brought household electrical appliances, a large number of household electrical appliances came into the rural areas. And the demand for electricity in rural areas is growing fastly. Because the design limitations and other reasons in the previous round of rural power grids upgrading project, the radius of supply lines was too long and it had small diameter. At the same time, the line is in serious overload operation state. All of this made more power resources wasted. Many rural areas, especially in remote areas, power supply was overloaded in long term, and extended lines and related equipment often appear aging phenomenon. In addition, in some remote mountainous area the power supply situation is very backward, and it can only meet the demand of lighting, which seriously affected the life quality of residents. Therefore, the Chinese government decided to implement a new round of rural power grid upgrading project across the country to upgrade. Rural power grid upgrading project hope to effectively solve the problem of the lack of rural power grid capacity through the optimization of rural power network, as well as update the grid equipment, such as wire, transformer, etc. So the rural power grids provide better service for the production and living of the rural population. Striving to achieve aims that: rural power grids around the country generally was upgraded, the change of the rural residents living electricity got better protection, agricultural production power problem was solved, "escrow system" in the county level power supply enterprises was abolished, urban and rural electricity power was in same price in the "twelfth five-year" period [1].

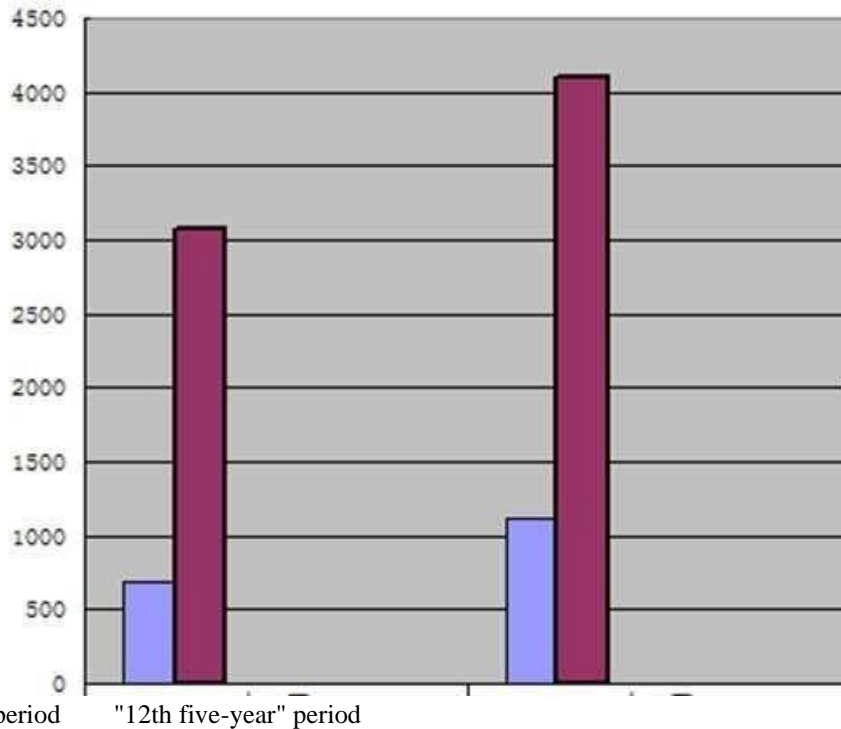
2. The present situation of the rural power grid upgrading funding simplification

Adequate fund is the most important driving force of rural power grid upgrading project. In the Chinese rural power grid upgrading project adopted different policies to the eastern and western areas of China. In the central and western regions, the rural power grid upgrading project capital is mainly composed of the central arrangements. It continues to execute 2 cents per kilowatt hours of electricity charge policy, specially used for rural power grid construction and retrofit upgrade project loan servicing. The eastern region is transformed from power grid enterprises to raise funds.

On April 12, 2002, the state council of China issued the electric power system reform plan (hereinafter referred to as "5th" document), and put forward the "factory network, advocate complementary separation, distribution separated apart, bid online" reform goal, which is seen as a sign of the beginning of power system reform of China. There are three core parts of the reform plan: implementing factory network apart, for access to the Internet; Reorganization of the power generation and power grid enterprises. From the vertical and horizontal two-way thoroughly split state power company. Began, power grid enterprise transfer for State Grid Corporation of China and Southern Grid Corporation of China. The two companies are state-owned company. After all the power grid enterprises in China transfer for state grid and southern power grid companies, all rural network reconstruction funds to the reconstruction project come from the two power grid companies. Since China started the rural power grid upgrading project, according to the arrangement from the national energy administration, the state grid corporation and southern power grid company accelerated the construction of rural power grid upgrading, strived to meet the rural economic and social development and improved farmers life quality. As of November 2013, two major power grid enterprises completed a new retrofit upgrade and without electricity power construction investment of 276.18 billion RMB [2]. During the "twelfth five-year" period, the state grid and southern grid rural network reconstruction fund will reach 717.5 billion RMB. As shown in table 1.

Table 1: The rural power grid upgrading fund of "11th five-year plan" and the "12th five-year plan" period (one hundred million yuan)

Company	11th five-year plan period	12th five-year plan period
State Grid Corporation	691	1116
Southern Grid Corporation	3075	4100



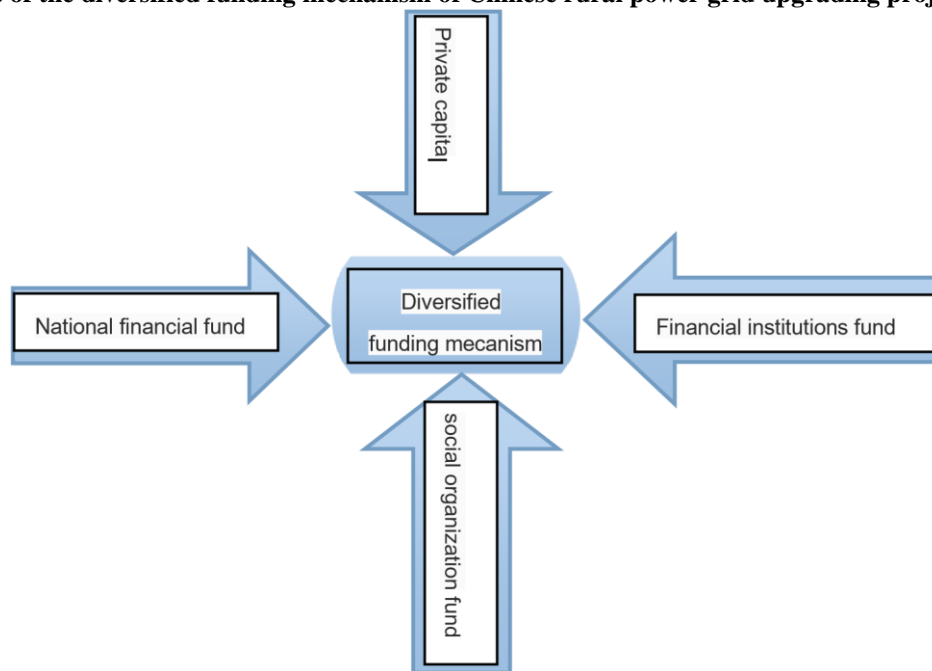
11th five-year plan period "12th five-year" period
 Data from: "2011-2015 analysis report of rural power grid renovation industry development prospects and investment forecast in China" from the Prospective Industry Research Institute of China

Like all large infrastructure, the development of the rural power grid upgrading needs a lot of investment. According to the arrangement made by Chinese government, "twelfth five-year" period, the state grid company and southern power grid company annual invest more than 100 billion RMB to the rural power grid construction and upgrading to meet the investment demand. Among the investment, only 20% is come from the nation's capital investment. It means that the grid companies need to invest self-raised funds of 80 billion yuan to this project every year on average. How to guarantee the implementation of the rural power grid investment demand is realistic problem to Chinese government and the Chinese power grid enterprise^[3]. Specifically, in the current electric power system, the state financial support is the main external funding sources. And premium policy is limited to use. In addition, power grid enterprises basically only by borrowing from the bank to get money. At the same time, due to the huge quantity, long payback period and low rate of return of rural electric construction investment and the state did not make clear policies and regulations to appeals investment from the society, little society capital invest rural power grid upgrading project^[4]. All of these reasons led to the current fund Channel of rural power grids upgrading project is simple and limited.

3. The Theory of the Construction of Diversified Funding Mechanism of Chinese Rural Power Grid Upgrading Project

Combined with the current situation of market reform and the rapid development of the social groups, to meet the funds demand of rural network reconstruction and upgrading, It is necessary to break the monotony of the investment mode and adopt diversified funding mechanism. As shown in table 2, there are four parts of the diversified funding mechanism.

Table 2:four parts of the diversified funding mechanism of Chinese rural power grid upgrading project



(1) The national financial fund

The natural monopoly industry has two notable features. The first one is the benefits of scope economic . It refers to the natural monopoly industry can get longitudinal uniform production and distribution of interests and composite for multiple users with a variety of services supply. The second one is economies of scale, namely, weak cost increase.^[5] Based on these two features, power grid industry belongs to the natural monopoly industries. At the same time, the power supply is an essential part of people's life in today's society life. It has the property of public products just like water. Therefore, to guarantee the efficient power supply is duty of government. In addition, to speed up the rural power grid infrastructure and vigorously develop rural electric power industry in our country is the inevitable requirement to seriously implement the scientific concept of development and to built a well-off society in an all-round way. It also has the vital significance to promote the improvement of rural productivity and to improve rural production and living conditions. Construction of China's new socialist countryside is the inevitable requirement of the construction of a well-off society in an all-round way and building a harmonious society. It also is an important way to promote the development of urban and rural areas as a whole, to expand domestic demand, keep the balance of the national economy development way^[6]. So the national financial fund should occupy important in rural network reconstruction capital source of weight, and act as good public products provider well.

(2) The private capital

Be influenced by the traditional planned economy model and partly due to the importance of electric power industry, electric power industry has been controlled by state-owned enterprises. Although it may provides possibility for state to control the price of electricity, and it also ensures the development of electric power industry to some extent . But at the same time, it also brought a lot of disadvantages, including the lack of investment, low operation efficiency, etc. When lacking of funding constraints, appropriately introducing private supply and adopting the way of the government and private supply, encouraging private capital investment in order to make up for the inadequacy of government money is necessary^[7]. At the same time as a market economy in our country, using the power of the market economy to improve the level of the power supply is very necessary. The experience of the reform of power in the developed countries such as Britain has fully proved this point. Through the operation of market economy and the appropriate institutional arrangements, encourage private capital come into the rural power grids transform domain, to play to the advantages of private capital, and promote the service efficiency of funds, resolve the funding gap has a very important role.

(3) The financial institutions fund

Financial institutions include policy-based financial institutions and the non policy-based financial institutions. Policybased financial institutions, including the World Bank, Asian Development Bank have provided important help on infrastructure construction in developing countries. And it is committed to helping developing countries improve the level of life in underdeveloped regions. The non policy-based financial institutions, including state-owned commercial Banks and private Banks. The non policy-based financial institutions as a traditional financing source for power grid enterprise , it has a big advantage with the financing channels. It provides a huge financial support for rural power grids transform.

(4) The social organization fund

Starting in the 1980 s, accompanied by liberalism to rise and the awakening of citizens' consciousness of selfdetermination, in order to make up for the failure for government and the market (private companies) in providing public goods and blank, all kinds of nonprofit organization arises at the historic moment. Nonprofit organizations and other social groups has the unique advantages in the aspect of public products supply such as close to the grassroots, flexible

and efficient. It wins the wide recognition and civil society and shows strong vitality^[8]. The vast rural areas in China is the scope of the transformation and upgrade of rural power grids. And the focus is on a remote underdeveloped regions, especially in remote mountainous area. This is similar with area that large social organizations pay attention to. And it has a broad space for cooperation. With the development of economy and the continuous improvement of the democratic system, China's social groups presented the vigorous development momentum. Social groups which has a broad public basis can provide effective supplement for the transformation and upgrade of rural power grids.

4. The Construction of Diversified Funding Mechanism of Chinese Rural Power Grid Upgrading Project

(1) The input mechanism of national financial fund

As a provider of public goods and regulators of national economy, the government should continue to guarantee sufficient financial funds, make financial fund input mechanism innovation, and improve the efficiency of the pulling effect of fiscal funds and use at the same time. Firstly establishing a scientific monitoring and evaluation system. Through the scientific indicators and data acquisition, making assessment of the various provinces and regions of differentiating the funding gap. Thus making reasonable allocation of limited financial capital and realizing the help that the areas need most and to give the biggest support. Secondly, set up a rural network reconstruction special funds or rural electric power development fund. Support the transformation and upgrade of rural power grids through the special fund. And at the same time, drive the nongovernmental capital investment by cooperating with other tax tilt and tilt policy. Furthermore, in view of the complicated situation in rural areas, the government targeted take government subsidies and preferential policies in order to provide a more powerful support. At the same time, solve the funding gap through the reasonable arrangement of issuing bonds. And establish strict financial fund audit system to make the improvement of the rural power grid upgrading capital management and the efficiency of the use of money and to minimize the waste money under the rule of law.

(2) The input mechanism of the private capital

Accompany with the mature of market economy in China and the new government leaders constantly promote and decentralization, private capital has been showed high enthusiasm to enter the electric power industry. But at present the private capital often encounter "glass door" phenomenon in the energy industry. It refers to that the supportive policies made by the government can not enjoy like locked behind the glass door. There are many reasons that cause "glass door" phenomenon, mainly including the current energy cannot guarantee private investment, the government energy state monopoly not conducive to fair competition, and dependent increase of government agencies rely on state-owned enterprises under the current economic system^[8]. Therefore, in order to promote the folk capital into the electric power industry and input into upgrade rural power grid project, it needs to make a lot of institutional arrangements. Create conditions for power grid company to clarify assets, push power grid enterprises to list on the stock market, at the same time adjust the proportion of shares that holding by Chinese government to absorb a lot of folk capital on the condition that guarantee state control of the power grid. Thus provides abundant source of funds for upgrading rural power grid and power grid construction. In addition, clarify the increment in the process of rural power grid upgrading assets property rights, through the diversification of property rights and proper financing arrangements, absorbing private capital to invest in the transformation and upgrade of rural power grids incremental assets.

(3) The input mechanism of financial institutions fund

For power grid enterprises, financial institutions funds is the most important source of enterprise self-raised funds. For the rural power grid upgrading project, it should pay attention to the policy-based financial institutions fund. Make full use of the world bank and Asian development bank and other institutions and the cheap even without interest policy to provide the low cost funding for rural power grid upgrading. As to the commercial banks, arrange financing reasonable according to capital requirements and reduce the idle loans. At the same time, the power grid enterprises can combine with local conditions, appropriate and effective use of private Banks financing the characteristics of low cost. Through the flexible operation, provide flexible sources of credit funds for the rural power grid upgrading.

(4) The input mechanism of social organization fund

In developed countries, various forms of social groups and the foundation absorb a large number of social donation every year and have considerable investment construction ability. Currently there are emerging from various social groups and foundation in China. And the Chinese public donations is improving remarkably. More and more entrepreneurs and celebrities join in it. And it greatly accelerated the speed of the development of social organizations in China. Therefore, making use of funds such as social organizations take social donations and the corporation between the varieties of social groups and the local power grid companies can provide the remote rural areas especially in the west with special funds of the transformation and upgrade of rural power grids. At the same time use the continuity of the social groups and social influence provide the long-term funding for the majority of remote areas for further upgrading of rural power grids.

5. Conclusion

In short, as project that need a huge investment and have a wide range of influence, Chinese rural power grid upgrading project should make full use of diversified mechanism to absorb the funds investment to ensure the smooth progress of rural power grids transform and provide more support for the development of our country rural area.

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