

Analysis on Financing Modes of Power Transnational Interconnection Projects

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Keywords: Electric Power, Transnational Interconnection Project, Financing Mode, Classification

Abstract: Power transnational interconnection projects usually have large investment scale and long payback period, and most of these projects carry public goods attributes with high social utility and low economic returns, so financing is often difficult. Based on the analysis of the financing modes commonly used in international projects, combined with the characteristics of power transnational interconnection projects, this paper puts forward a variety of financing modes, and designs corresponding financing modes for different types of projects.

1. International Engineering Common Financing Mode

At present, overseas infrastructure projects can be divided into equity financing and creditor's rights financing according to the rights and interests of the fund provider. According to different financing entities, financing modes can be divided into corporate financing and project financing. According to the sources of funds, financing modes of overseas infrastructure construction are mainly divided into five categories: domestic policy-oriented bank loans, multilateral development financial institutions, domestic commercial banks, investment funds, overseas issuance projects.

1.1 Domestic Policy Bank Loans

Domestic policy-oriented bank loans, mainly from China Development Bank (CDB) and the Export-Import Bank of China (CEXIM), not only provide traditional loans, but also establish Sino-foreign cooperative funds. China Development Bank is the world's largest development-oriented financial institution and China's largest foreign investment and financing cooperative bank.

1.2 Multilateral Financial Institutions

Multilateral financial institutions, including the traditional world multilateral financial institutions and the new multilateral development financial institutions, the former such as World Bank, Asian Development Bank (ADB), European Bank for Reconstruction and Development

(EBRD), African Development Bank (AFDB) and so on, and the latter as Asian Infrastructure Investment Bank (AIIB) which is specially designed for “One Belt One Road” and the Silk Road Fund (also a special investment fund mode), as well as New Development Bank (NDB) and Shanghai Cooperation Organization Development Bank and so on. Both Asian Infrastructure Investment Bank and Silk Road Fund are established based on international standards and provide diversified, innovative financing methods of credit, bond, equity investment and insurance for “One Belt One Road”.

1.3 Domestic Commercial Banks

Domestic commercial banks mainly include four state-owned commercial banks, among which Bank of China and Industrial and Commercial Bank of China have more overseas branches and mature diversified financing service system.

1.4 Investment Fund

Investment funds are funds such as sovereign wealth funds, as well as China’s special investment funds, such as Silk Road Fund, China-Portugal Cooperation Development Fund, China-Latin America Capacity Cooperation Fund, the United Arab Emirates Mutual Investment Fund, and China-Africa Development Fund and so on.

1.5 Overseas Issuance of Engineering Construction Bonds

There are many types of construction bonds issued abroad, such as construction bonds, green bonds, and Islamic bonds etc. For large-scale (more than 100 million euros) or long-term projects, enterprises can issue bonds in the capital market to directly finance. Bonds have a specific term, interest and principal repayment. The maturity and interest rates of bonds depend not only on the quality and requirements of the project, but also on the current state of the capital market.

2. Design of Financing Mode for Transnational Interconnection Engineering

There are many types of financing methods in the financial market, and the capital demand for transnational interconnection projects is huge. A single investment mode is difficult to meet the needs of transnational interconnection projects. It requires comprehensive use of government-led and market-based financing, traditional financing and innovative financing, domestic financing and international financing to build a reliable, economical, diverse and flexible financing strategy.

2.1 Actively Strive for Domestic and International Policy and Development Financing Support

Transnational interconnection projects usually have large investment scales and long payback periods. Most of these projects have public product attributes and high social utility, but the investment cycle is long and the economic returns are low. The transnational interconnection project financing method should firstly strive for the policy financing methods led by domestic and foreign governments, playing the role of policy and development financial institutions with actions.

2.1.1 Strive for cross-border interconnection projects related to national policy bank loans

The ideal financing method for transnational interconnection projects is policy bank loans. Many countries have established policy banks that are guaranteed by government credit and can provide financial support for certain projects according to corresponding policy. It is mainly in the form of

low interest rate or even interest-free loans. It is highly targeted and suitable for projects with industry or industrial advantages, high technical content, independent intellectual property rights or in line with national industrial policies. Generally, enterprises are required to operate well, reach certain scale, and possess good enterprise management. The policy financing cost is low, the term is long, and the risk is small. Especially when the transnational interconnection projects is economically weak or the business risks are high, adopting policy bank loans is a favorable choice. However, the shortcomings of policy bank loans are narrow application, numerous links, complicated procedures, and certain restrictions on non-resident enterprises.

2.1.2 Pay attention to and timely apply for special funds for national overseas investment cooperation, and reduce investment costs

Transnational interconnection projects have large scale of funds and high operational risks. It can actively take advantage of national special fund policy support to reduce investment costs. China's central government has allocated special funds for foreign economic and trade development to optimize the structure of foreign trade, promote foreign investment cooperation, and improve foreign trade and economic services. Special funds for capital investment, direct subsidies and loan interest subsidies are supported for eligible overseas investment cooperation projects.

2.1.3 Seek loan support from international development financial institutions

The transnational interconnection projects can not only strengthen cooperation with traditional international large financial institutions such as World Bank, Asian Development Bank, and African Development Bank, but also make good use of AIIB, Silk Road Fund, New Development Bank, and other regional multilateral institutions, actively striving for the total amount of credit granted by these financial institutions. We will mobilize and coordinate resources such as the SCO Bank Consortium and take advantage of the support of bilateral multilateral financing institutions under the government frameworks such as China-Africa, China-Kazakhstan.

2.2 Multi-channel Domestic and International Market Financing

For transnational interconnection projects with complete business modes and obvious economic benefits, it is possible to establish a market-based financing method of sharing benefits and risks to fully mobilize global financial resources, and conduct domestic commercial financing and international capital market financing with bonds, equity, structured financing and other methods to meet the funding needs of different stages and purposes.

2.2.1 Commercial bank loan

In the international capital market, it's significant to seize the opportunity of the current European Central Bank to implement quantitative easing policy and the euro zone to enter the era of negative interest rates, and strive for zero interest rate or negative interest rate loans to minimize financing costs. Transnational interconnection projects can also take the form of international bank loans, a form of credit that borrows money from foreign lending banks in international financial markets (such as the European dollar market and the Asian dollar market). The main providers of loans are large commercial banks. International bank credit can be divided into short-term bank credit and long-term bank credit depending on the length of the credit period. Transnational interconnection projects may take the form of a syndicated loan when a single bank cannot provide sufficient loan quota. The financing amount of commercial bank loan is relatively high, the procedure is simple and there is no non-resident restriction compared with policy bank loan.

Transnational interconnection projects can first obtain the project construction fund by commercial bank loan, and then obtain funds matching the term of project by issuing bonds in the later stage of project construction.

2.2.2 Issuing bonds

For transnational interconnection projects, it is possible to explore attempts to raise bonds for project construction by project resource countries, transit countries, governments of demanding countries, and enterprises with higher credit ratings and financial institutions. The project bonds are mainly based on bond products designed by individual projects, and can gain credit enhancement through participation of government or multilateral development financial institutions. Project bonds are highly standardized and can be traded on the open market with strong liquidity. According to the characteristics of different projects, different types of bonds can be designed and issued in the countries where the transnational interconnection projects pass to expand fund sources.

2.2.3 Commercial paper financing

Commercial Paper is a promised certificate of unsecured guarantee issued by the relevant company or enterprise as the drawer and paid to the holder in accordance with the face value. When it is expected that some funds will be used to pay in the near future, it is not necessary to borrow from the bank at a higher interest rate, and raise funds through the commercial paper market. Advantages of bill financing include: lower financing costs; full flexibility; and a wide range of funding sources. That's because the cost of commercial paper is generally lower than the bank's short-term loans, and large companies can issue commercial papers to raise large amounts of money without registration. When commercial papers expire, new bills can be issued to repay in order to ensure continuous large-scale borrowing. In the construction of transnational interconnection projects, temporary, medium and short-term funding needs can be obtained by project developers such as project companies through commercial paper.

2.2.4 Asset-backed securitization financing mode

Asset-backed securitization mode (ABS mode) is mainly guaranteed by the expected return of project assets. The asset risk and income factors are decomposed and restructured through certain mechanism design, which can be transformed into the process of trading and distributing credit warrants in the financial market.

It is assumed that transnational interconnection projects are developed and constructed by their respective project companies, then these project companies can jointly divest the loans for development projects from themselves and collectively package them to a special purpose company. The special purpose company has a clear and simple structure and stable cash flow, and it can act as an entity to issue securities of different repayment levels to the international capital market to obtain financing. The special purpose company can sign a service contract with the original project company, and the original project company can continue operating transnational interconnection projects.

2.3 Establish Global Energy Internet Industry Investment Fund

The construction of transnational interconnection projects requires large financial support, especially for intercontinental networking projects, of which the investment scope is wide, the term is long, and it is still in its infancy. It is difficult to meet the funding needs by traditional bank loans and bond issuance methods. For transnational interconnection projects, it can be changed to

“passive” to “active”, and explore the establishment of a special investment and financing fund to fully absorb all kinds of funds around the world and seek financial support for engineering construction. Establishing transnational interconnection investment fund can play a complementary role with the traditional investment and financing mode to achieve revenue sharing and risk sharing. Transnational interconnection investment funds can be established in three steps through the fund management company - closed parent fund - open sub-fund.

First, sponsoring enterprises jointly establish a “transnational interconnection industry investment fund management company” with domestic and foreign large-scale financial investment institutions and industrial institutions. The registered place can be set up in Hong Kong etc.

Second, the fund management company will set up a transnational interconnection industry investment fund. The parent fund adopts a limited partnership form. The company (including its financial institutions such as Yingda Trust and Fund) jointly funds policy funds (such as government financial funds, CIC, policy banks, etc.), qualified industrial institutions, and financial institutions to become the general partner (GP) of parent fund. The fund management company is responsible for the operating the parent fund and recruiting the limited partner (LP) of the parent fund from global investors. From the perspective of the international market, pension funds and insurance companies are the most important source of funds for industrial funds, and the investment ratio often exceeds 60%.

Third, in order to meet the needs of electric energy investment in different countries and regions, the “transnational interconnection industry investment parent fund” will set up different types of “transnational interconnection industry investment sub-fund” in the location of investment projects according to local conditions based on the actual needs of building a transnational interconnection project. The parent fund provides credit support for the sub-fund. The sub-fund is specifically involved in the construction of transnational interconnection projects based on the actual situation of the project site.

2.4 Explore and Develop Innovative Financing Modes

Some emerging financing modes in the financial market can also be used for financing transnational interconnection projects, such as exploring the financing modes of YieldCo (abbreviation of Yield Corporation) and crowdfunding.

2.4.1 YieldCo financing

YieldCo is a revenue financing instrument referring to an entity initiated by a parent company. The entity holds a certain scale of operating assets and distributes part of the cash flow generated by the asset in a dividend form according to a certain frequency (such as annual or quarterly) to shareholders and publicly raise funds through listing. Unlike traditional listed companies, YieldCo’s investors are more concerned about the stable, reliable and moderate growth of the company’s cash flow, rather than the rapid expansion of profitability or market size. Enterprises with long-term, stable cash flow assets, especially development assets and operating assets with different risk attributes are suitable for adopting YieldCo mode. In the portfolio of YieldCo, there are many kinds of assets covering traditional energy sources such as thermal power, light wind and other new energy sources, and heating and pipelines. Transnational interconnection projects can generate long-term, relatively stable cash flow in the operation process, thus can try this new financing method: package the income right of the transmission fee of transnational interconnection projects scattered around the world into YieldCo entity. This will result in low-cost financing and provide support for the construction of backbone grids and the rollout of branch networks.

2.4.2 Crowdfunding

In recent years, the renewable energy crowdfunding mode is gradually emerging at home and abroad. Compared with traditional financing methods, the crowdfunding financing mode is more open, and the ability to obtain funds is no longer simply based on the commercial return rate: as long as the users like the project, they can get the project startup funds partly through crowdfunding. The shortcoming is that it is not easy for people to make large amounts of voluntary contributions, and the crowdfunding financing mode is still in the early developing stages without many precedents for reference. Many people are not familiar with this new financing mode.

3. Design of Financing Modes for Different Types of Transnational Interconnection Projects

3.1 Projects with Large Capital, Long Construction Period and Stable Profitability

Thermal power, water and electricity delivery projects in the point-to-point network projects or the traditional power generation and renewable energy power generation bundled projects, and the network-to-network long distance interconnection projects generally have the features of large capital demand scale, long construction period and stable investment return and are favored by large financing institutions. In order to ensure sufficient, stable and safe funding sources for the project, it's preferred to adopt domestic and foreign policy and development financing tools, such as policy bank loans, government special funds, and support from financial institutions such as AIIB, World Bank, Silk Road Fund and African Development Bank etc. Meanwhile, seeking loans from domestic and foreign commercial banks, issuing bonds, with supplement by asset securitization and YieldCo financing is also very important.

3.2 Projects with Small Capital, Short Construction Period and High Profitability

Wind power transmission, photovoltaic and solar thermal power generation and other renewable energy power generation projects in the point-to-network projects, as well as neighboring border interconnection projects generally have the features of relatively small capital demand scale, shorter construction period, relatively high investment return. Under normal circumstances, traditional policy and development financing tools are more oriented to infrastructure projects with large financing scales, more complicated financing procedures and longer financing period. Therefore, for such projects, priority should be given to domestic and international market-based financing tools, such as borrowing from domestic and foreign commercial banks, issuing bonds, seeking support from international investment funds, and flexibly adopting new financing methods such as crowdfunding and YieldCo to quickly raise funds.

4. Summary

In the design of financing mode, considering transnational interconnection projects are different from domestic grid engineering projects, it is necessary to develop a reliable, economic, diversified and flexible overall financing strategy, and select the prior mode based on different features of transnational interconnection projects. The overall financing strategy includes: first, actively seeking domestic and international policy and development financing support; second, launching multi-channel domestic and international market financing; third, establishing Global Energy Internet industry investment fund; and fourth, exploring and developing various innovative financing mode. As for different types of projects, different financing methods can be used or combined to build a feasible and appropriate financing mode.

Acknowledgements

This research was financially supported by the project of State Grid Science & Technology Foundation, Research on Key Technologies and Implementation Paths of Cross-border Power Trade and Financial Mechanism Design.

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