

# Application Research of PPP Mode in the International Energy Cooperation Project under the Background of "One Belt and One Road"

Yujie Cui<sup>1, a</sup>

<sup>1</sup>School of Economics and Management, Heilongjiang Bayi Agricultural University, 163319, Daqing, China.

<sup>a</sup>695042007@qq.com

## Abstract

The nineteenth National Congress put forward the requirements for energy reform, and in-depth energy reform is also an inevitable way to solve the contradictions between energy, environment and economy. The "one belt and one way" international energy cooperation project is the trend of energy reform. The PPP mode, with its unique advantages, leads the cooperation of government capital and social capital to complement each other, and is the most powerful support for the "one belt and one way" international energy cooperation project. This paper analyses the rationality of applying PPP model in international energy cooperation projects, introduces the implementation steps of PPP model in international energy cooperation projects, and finds out the possible political risks, completion risks and environmental protection risks in the operation of international energy cooperation projects. In order to effectively ensure the smooth and efficient implementation of the PPP mode under the background of "one belt and one road" in the international energy cooperation project, we put forward measures for participating countries to build collaborative governance mechanism, overall investigation and planning, and training professional talents.

## Keywords

Energy reform; One belt and one road; PPP mode; cooperation project.

## 1. INTRODUCTION

The Nineteenth National Congress of the Communist Party of China (CPC) put forward that energy reform is imminent. On the one hand, it is the requirement of economic transition to high-quality development stage, and on the other hand, it is necessary to solve the current contradiction between environment, energy and economy. Many foreign countries are carrying out energy reform, such as Mexico, the United States and the European Union. The reform of these countries has a common feature: relaxing government supervision and increasing international cooperation. China can take this opportunity to take energy technology, equipment and services to promote the international exchange of energy infrastructure and increase energy resources. Technological and capacity cooperation, take the initiative to participate in global energy governance. In 2018, China's oil imports continued to grow, with imports of 400 million tons of oil rising to 69.8% and natural gas over 40%. International energy cooperation projects can not only solve the high dependence of China's oil and gas imports, but also reduce the cost of energy imports and stabilize economic and trade relations. In the international energy cooperation project, due to the advantages of geographical location and convenient conditions, we should pay special attention to the opportunities of cooperation in

energy production between neighboring countries. The countries along the "one belt and one road" are rich in oil and gas resources, mostly developing countries. Under the conditions, the level of energy development is relatively low, and the energy market has great potential for development. Participation in international energy cooperation projects is preferred. As energy is a capital-intensive industry, international energy project cooperation relies on financial capital, but the low proportion of international trade loans and many additional conditions lead to the lack of funds for energy project cooperation to meet the needs of energy construction. The mode of cooperation between government and social capital (PPP) is the cooperative relationship between government and social capital for the purpose of providing public goods. The basis of cooperation is that the government grants the franchise of social capital to give full play to the advantages of government and social capital. Both benefit-sharing and risk-sharing, PPP mode is to make up for public services. The supply of public services is insufficient, and the quality and efficiency of public services are improved. Taking advantage of PPP model and combining the opening up and cooperation of resources in different countries, a new way to reduce government financial pressure, innovative financing channels and low financing cost will be opened up, which will further promote the in-depth development of international energy cooperation projects.

## 2. IMPLEMENTATION STEPS OF PPP MODEL

PPP model can be roughly divided into four stages in the implementation of international energy cooperation projects: preliminary preparation; project bidding; project implementation; contract termination. First of all, the preparatory stage is the launching and preparation stage of the international energy cooperation project. It is sponsored by other countries along the "one belt and one road", and the participating countries are organized to set up a decision-making organization committee. The scope and contents of implementation, the division of responsibilities and risk allocation of participating countries are clearly defined, and international experts are repeatedly organized to demonstrate the implementation of the international energy cooperation project by the countries along the one belt and one road.

Secondly, in the bidding stage of the project, the eligible social capital companies are mainly selected, including three parts: the first part, the project decision-making organization committee compiles cooperation agreements, which include the division of labor in the construction content of international energy cooperation projects, construction period, supervision measures, and relevant legal documents. Fixed, tender conditions, etc. In the second part, social capital companies participate in the competition. All participating countries and transnational corporations that meet the bidding conditions can participate in the competition. The bidding evaluation working group examines the conditions of the bidding company and finally determines the winning company. In the third part, the project management committee and the bidding company sign the concession contract. The winning company must complete the related matters required in the concession contract and the financing contract signed with the financial institutions within the time limit, otherwise the concession contract will be invalid.

Thirdly, the implementation phase of the project includes the construction and operation of international energy cooperation projects. In the construction stage, because the international energy cooperation projects involve more countries along the "one belt and one road", the successful social capital companies can not be completed alone, and need to be associated with contractors, insurance companies, consulting companies, financial institutions, etc. The company jointly constructs and is responsible for the construction of the whole project. The project management committee established by the international energy cooperation project supervises the development process of the energy project, corrects the problems in time, completes the construction stage, acceptance by project management committee, and enters

the operation stage after meeting the acceptance criteria. The successful social capital company operates the completed energy projects within the concession time limit and operates and maintains the energy project facilities as required. During this period, the project management committee has the power to supervise the energy projects.

Finally, the end of the contract is also the last stage of the international energy cooperation project. After the franchise expires, the social capital company should transfer the management right (or ownership and management right) of the energy project to the government of the cooperating country, which is responsible for inspecting the operation and maintenance of the energy project in order to ensure energy cooperation. Future operation of the project and quality of energy exploitation. After the transfer, the business of the social capital company will be terminated, and the liquidation and cancellation procedures shall be handled according to the requirements of the concession contract.

### **3. RISKS OF PPP MODEL INTERNATIONAL ENERGY COOPERATION PROJECTS**

#### **3.1. Political Risk**

The biggest risk that international energy cooperation projects may encounter is political risk. There are different political systems in the countries along the "one belt and one road", such as the implementation of the people's Congress System in China and Vietnam, the implementation of monarchy in Saudi Arabia, the United Arab Emirates, the implementation of general control in Russia and Iran, and so on. Under the background of different social and political systems, participating countries are prone to frictions and disputes and unfair treatment to developing countries in the process of project cooperation. And the PPP mode of international energy cooperation project has a long cycle, and the political situation of the countries along the "one belt and one road" is different. In recent years, many countries have experienced political turmoil or war. If there are political disputes during the project cooperation, war and other political problems may lead to the bankruptcy of the project.

#### **3.2. Completion Risk**

PPP mode of international energy cooperation project construction cycle is long, involving many participants and other characteristics, in the construction process, it is easy to lead to the normal completion or completion but can not meet the acceptance criteria. Because of the different political and cultural backgrounds of the countries along the "one belt and one road", the factors influencing the risk of completion are different under such circumstances. The main factors affecting the risk are design errors, cost overruns and cultural differences. In terms of design errors, for example, foreign enterprises generally promote the construction period according to the 8-hour system, while Chinese enterprises can implement the 24-hour three-shift system in order to shorten the construction period. If the project is not communicated in advance, the delay will be caused. In the aspect of cost overexpenditure, for example, the complexity of international energy cooperation projects and the change of exchange rate were underestimated in the formulation of cost budget, which resulted in cost overexpenditure in the actual construction process. In terms of cultural differences, staff from different cultural backgrounds will have different opinions on the same issue, which will lead to time delays and affect the construction period.

#### **3.3. Environmental Risk**

With the development of economy, countries pay more and more attention to environmental protection, and the formulation of environmental protection laws is becoming more and more perfect. Traditional energy projects, such as petroleum, natural gas and other energy projects,

have different ways of entering the ecological environment, which can easily cause environmental pollution. For example, in the exploration stage, the movement of exploration equipment, the construction of temporary stations, etc. will pollute the local soil, vegetation and water sources; in the production and transportation stage, it will also cause environmental pollution. Perhaps due to the leakage of energy pollution, affecting the living environment of local residents. The environmental risk of international energy cooperation projects will be more complex. In order to meet the environmental requirements of energy mining countries, social capital companies will increase production costs, while the environmental requirements of different countries will increase the complexity of cost calculation. If the international energy projects do not meet the environmental requirements of the energy host country, they will probably be called off, affecting the duration of the project.

## **4. RISK PREVENTION MEASURES**

### **4.1. The Participating Countries Construct Cooperative Governance Mechanisms**

First of all, the governments of all countries along the "one belt and one road" will improve the energy cooperation investment agreement between China and the participating countries by carrying out multilateral energy conferences, so as to ensure that most participating countries, including China, can enjoy the most favored nation treatment in the energy cooperation projects, and clarify the relevant provisions of the dispute settlement mode of the energy cooperation projects. Secondly, the project management committee should be set up to take the opportunity of the "one belt and one road" international energy cooperation to form an international PPP energy cooperation project management committee. In addition to supervising the construction of the cooperative project, it can also provide guidance and decision for the risk division, dispute settlement system and income distribution of the international energy cooperation project. Finally, we should establish and improve the legal system. Due to the differences in the political system of the countries along the "one belt and one way", there will be differences in the relevant legal provisions of international energy cooperation. For the international energy cooperation projects under the PPP mode, the participating countries including China should perfect the relevant legal system, including not only domestic legislation, but also the relevant laws and regulations. It also includes international cooperation legislation, refinement of legal provisions, establishment of international and domestic dispute settlement mechanism laws and regulations, and providing a good cooperation environment for international energy cooperation projects.

### **4.2. Overall Investigation and Planning to Train Professional Talents**

Before taking part in the project, our country investigated the overall situation of the countries along the "one belt and one road" participating in international energy projects. The survey included: the cultural background of the participating countries, religious belief, past participation in energy project experience etc, and clearly defined the "one belt and one road". In the context of the external environment of the PPP model international energy cooperation project, the overall project plan is formulated based on the survey results to measure the potential benefits and risks in the future. China's social capital participation in international energy cooperation projects under PPP mode should form alliances, negotiate and build together, jointly safeguard legitimate rights and interests, formulate unified systems and feasible measures in income distribution, risk distribution and dispute settlement negotiations. It also pays attention to the training of professionals in PPP projects, cross-border negotiations and international energy exploitation. Assess the strength of China's participating projects as a whole, including the relevant personnel reserve, past experience in participating projects, predict the possible risks in the future, make prudent decisions on participating projects, and screen high-quality projects.

### 4.3. Enhancing Environmental Protection Requirements for Project Development and Increasing Cooperative Development of New Energy Sources

Before the construction project, the social capital company hired a professional environmental consultant to conduct a field trip to the country where the project was located. The environmental requirements for the project construction were higher than the environmental requirements of the country where the project was located, and the participating government should supervise the whole project construction process. The project construction causes unnecessary pollution. In addition to traditional energy sources and new energy sources, the countries along "one belt and one road" will be able to consider the cooperation of new energy projects, such as wind energy, solar energy, water and biofuels, when they choose projects, and these new energy sources can all be international energy cooperation projects. On the basis of protecting the environment, the new energy can realize the sustainable utilization of energy, which can not only meet the demand of energy use, but also protect the ecological environment. Compared with the traditional energy, the advantages of the new energy are prominent in the use process.

### ACKNOWLEDGEMENTS

This paper is the phased research result of a project from "Campus Cultivating Projects Funding Plan" of Heilongjiang Bayi Agricultural University (Project Title: research on the impact of deepening energy supply-side reform on the development of circular economy in Heilongjiang province, Project Number: XRW2017-05). I would like to thank all the supporters from Heilongjiang Bayi Agricultural University, colleagues and friends.

### REFERENCES

- [1] Yan J, Chou S K, Desideri U: Innovative and sustainable solutions of clean energy technologies and policies (Part I). *Applied Energy*, Vol.130(2014), No. 5, p.447-449.
- [2] F. Xu . Risk Analysis of Bidding Decisions in International PPP Projects. *Engineering Construction and Design*, Vol.22(2017),p.10. (In Chinese)
- [3] H. F. Ma, X. X. Ding . Research on Risk Prevention of Construction Enterprises under PPP Mode. *Journal of Jilin Jianzhu University*, Vol.2(2017)No. 6,P.116-120.(In Chinese)
- [4] Solomon Olusola Babatunde, Akintayo Opawole, Olusegun Emmanuel Akinsiku. Critical success factors in public-private partnership on infrastructure delivery in Nigeria. *Journal of Facilities Management*, Vol.3(2012), No. 8, p.51-60.
- [5] Wang Q and Chen Y. Barriers and Opportunities of Using the Clean Development Mechanism to Advance Renewable Energy Development in China. *Renewable & Sustainable Energy Reviews*, Vol.14(2010), No. 7, p.1989-1998.