Problems and suggestions on environmental protection of International Power Plant Investment

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Abstract. With The Belt and Road Initiative strategy, international power investment has become a major business area, and environmental protection has become one of the important restricting risks. Based on the systematic analysis of the severe challenges faced by the current international power investment, this study provides five major suggestions to deal with the environmental protection problems including: (1) strictly abiding by laws and regulations, (2) strictly implementing the environmental protection agreements, (3) improving the environmental management system, (4) focusing on the whole life cycle management and control, (5) doing a good job in territorial integration. It means to provide a reference for the green development of the international power project investment.

1. Introduction
With the continuous improvement of global attention to the ecological environment, international project investment is increasingly restricted by environmental protection, and environmental problems caused by investment behavior are more likely to attract the attention of the country, people and even the international community where the investment is located [1]. Environmental protection has become an important risk faced by international investment [2], and ecological environment risk has become one of the main risk factors determining the success or failure of hydropower project investment [3].

Especially for international investment construction operation integration project, environmental protection risk runs through the whole life cycle of the project. At any stage, environmental problems may have a huge impact on the smooth progress of the investment project. The approval of environmental impact assessment results in the termination of the project in the investment stage, and the pollution discharge results in the shutdown of the project in the construction and operation stage. To do a good job in environmental protection management of international power projects has become an inevitable trend and prerequisite for enterprises to go global and develop the "belt and road" market.

2. Environmental protection challenges faced by international power investment
2.1. Government control becomes more strict
China's international power investment is still dominated by developing countries. With the improvement of public awareness, governments of various countries have paid more and more attention to environmental protection management and control, environmental protection standards have been gradually improved, and management requirements of investment projects have become increasingly strict. It is more difficult compared with the environmental protection management of early international project contracting projects.
In the reply document of environmental assessment, the government lists the environmental protection matters that should be implemented by the investor in detail, and lists the matters such as the formulation of environmental and social management plan and ecological compensation plan in the government agreement; and strengthens the supervision of the investment project by employing a third-party consulting agency. The above fully reflects the government’s attention to environmental protection of investment projects.

2.2. Non-governmental organizations pay more attention
The public’s attention to the environmental problems caused by the power development has spawned a large number of local and global non-governmental organizations. If the local environment is damaged, it will face the risk of being sued by local people and public organizations. Due to the intervention of non-governmental organizations, the hydropower project has been delayed and cancelled \[4\]. Many power stations in Cambodia invested and built by Chinese enterprises were terminated due to the involvement of non-governmental organizations.

2.3. Environmental protection runs through the whole life cycle of the project
Environmental protection runs through the whole life cycle of power project. Environmental impact assessment in the investment stage is the precondition for approval of investment projects in many countries; the implementation of environmental protection measures in the process of construction and operation is an important part of government supervision. In order to avoid the construction and operation risks, the environmental protection management and control task of the investment construction unit is more arduous.

2.4. Enterprises needs to improved environmental protection awareness
The principle of “investment follows the principle of territoriality” reduced the supervision of the Chinese government and international investment enterprises, resulting in the reduction of the environmental self-restraint of various industries in foreign investment. On the other hand, there are some problems of some enterprises in international investment, such as the enterprise fails to fulfill the main responsibility of environmental protection, the management of environmental protection is poor, and the communication with the host country is insufficient, which eventually leads to environmental protection becoming one of the important risks restricting the promotion of investment projects \[5\].

3. Suggestions for environmental protection management of international power investment
Combined with the characteristics and practice of international power investment, environmental protection measures should be implemented from five aspects.

3.1. Adhere to the law and regulations
Laws and regulations are an insurmountable red line to carry out environmental protection work, environmental protection agreement is the bottom line that environmental protection of international projects must adhere to. The implementation of laws and regulations and environmental protection agreements is the key for international investment enterprises to implement the main responsibility of environmental protection.

International investment should comprehensively consider the environmental protection laws and regulations of China, territorial countries and international conventions, and strive to apply high standards to international investment projects, realize green development, and lead the construction of global ecological civilization.

3.2. Strictly implement the environmental protection agreement.
The agreement signed between the international power investment project and the territorial government is the basis for project implementation.
It is necessary to analyze the implementation terms of environmental protection agreements and carry out training on the terms of environmental protection agreements, so as to ensure that the management personnel at all levels grasp the matters of environmental agreement and provide guarantee for the performance of investment projects.

3.3. Improve the environmental management system.

The construction of environmental management system is the requirement for international power BOT projects to achieve green development and sustainable development. According to the cyclic improvement mode of ‘Plan-Do-Check-Act (PDCA)’, the preventive risk assessment is adopted to identify and assess the environmental impact factors in each link of the investment project, and then the preventive and control measures are formulated and implemented to avoid the occurrence of environmental emergencies to minimize the environmental impact.

3.4. Focus on entire life cycle management and control.

Environmental protection runs through the entire life cycle of investment, construction and operation of BOT investment projects. Combined with this feature, taking the project construction stage as the basic unit, the key elements of environmental protection in each stage are systematically clarified to achieve the entire life cycle environmental protection management.

In the investment stage, we should focus on environmental protection due diligence, environmental impact assessment and EIA approval, laying a good foundation for the pre-approval of environmental protection of investment projects.

In the construction stage, we should focus on the environmental protection facilities and main projects ‘simultaneous design, construction, and production’ to ensure the implementation of
environmental protection engineering measures, to provide support for environmental protection compliance.

In the operation stage, we should focus on the operation and maintenance of environmental protection facilities and environmental monitoring to ensure that the pollution during operation is controlled and emissions meet standards.

3.5. *Good territorial integration*

In each stage of the investment project, environmental monitoring and environmental supervision can be carried out by employing a third-party professional consulting agency, and good support can be provided for the territorial integration of project’s environmental protection work by deploying territorial environmental officers.

The entire life cycle of the project will always maintain a smooth linkage and communication mechanism with governments of territorial countries to provide important guarantees for the legal compliance of environmental protection of the project.

4. **Conclusions**

The Belt and Road Initiative’s strategy of going global has provided broad space and numerous opportunities for Chinese enterprises to invest internationally. Sustainable development has become the consensus of various countries in the world. It is an inevitable trend to give consideration to ecological environment protection in international investment, fulfill the main responsibility of environmental protection of investment enterprises, and adhere to green development. Ecological environment protection has become the key support for China's "Belt and Road" global strategy.

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