

RESEARCH ARTICLE

# Terms of Production Sharing Contracts in International Oil and Gas Cooperation and China's Optimization Path

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## Abstract

A production sharing contract refers to an international oil and gas cooperation agreement where the resource country retains ownership of the oil and gas resources, while foreign oil companies develop and produce these resources, with the resulting oil and gas products subject to cost recovery and profit sharing. The production sharing contract has become one of the most widely used contract models by oil and gas resource countries worldwide. In recent years, China has also actively adopted production sharing contracts for cooperative development of international oil and gas resources, playing a crucial role in optimizing the energy structure and ensuring energy security and addressing global energy challenges. The fiscal and tax provisions, stability clauses, and legal provisions of the production sharing contract are crucial for managing risks, controls, and profit-sharing arrangements during the exploration, development, and production of oil and gas resources between resource countries and foreign oil companies. China should enhance the information support for the formulation of fiscal and tax provisions, stabilize clauses appropriately to mitigate sovereign risks, and establish a dynamic and flexible contract communication and coordination mechanism.

**Keywords:** International Oil and Gas Cooperation, Production Sharing Contract, Fiscal and Tax Provisions, Stability Clause, Legal Provisions.

## 1. Introduction

The production sharing contract refers to an international oil and gas cooperation contract in which the resource country retains ownership of the oil and gas resources while foreign oil companies engage in exploration and production, and the resulting oil and gas products are subject to cost recovery and profit sharing. Originating from Indonesia in the 1960s, this contract model has gradually gained acceptance among many countries. At present, it has become the most widely used contract model in oil and gas resource countries worldwide(1). Since the 1980s, China has also signed a number of onshore and offshore production sharing contracts with foreign oil companies, through its national oil companies that hold mining rights. The signing of these production sharing contracts has enabled china to participate

more deeply in the cooperative development of international oil and gas resources, and has played a significant role in optimizing the energy structure and ensuring energy security.

## 2. Overview of International Oil and Gas Cooperation Production Sharing Contracts

### 2.1 Characteristics of International Oil and Gas Cooperation Production Sharing Contracts

There are various types of international oil cooperation contracts, such as risk service contracts, concessions (also known as mining tax system contracts), each with its own unique characteristics. The production sharing contract is characterized by the following: (1) The ownership of oil and gas resources belongs to the resource country, and the foreign oil company is the counterpart of the contract. (2) Foreign oil companies

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first invest in exploration and bear all exploration risks, meaning that if no commercial discovery is made, the foreign oil company bears all losses; and if commercial discoveries are made, the foreign oil company must also bear a corresponding proportion of the development and production costs. (3) After deducting the use fee of the mining area, all oil and gas productions are divided into two parts: cost oil and profit oil. Cost oil is used to recoup production operation costs and investments up to a certain limit; profit oil is shared between the resource country and the foreign oil company as stipulated in the contract, and income tax is paid on this share. (4) Typically, all equipments and facilities related to oil operations within the contract area belong to the resource country.

## **2.2 The Composition of Production Sharing Contracts in International Oil and Gas Cooperation**

The most distinctive features of the production sharing contract are cost recovery limits and profit oil sharing. The process of cost recovery and profit oil division in a production sharing contract can be broadly categorized into the following four levels: the first level is to extract the use fee of the mining area. At the second level, cost recovery is allowed, where resource countries permit foreign oil companies to recover costs from net income prior to production sharing. Most production sharing contracts impose a proportional limit on cost recovery, allowing excess costs to be carried forward to future periods. The third layer is the division of profit oil. The income after deducting the use fee and recovery cost of the mining area is called profit oil, and the foreign oil company and the resource country are divided according to the prescribed proportion. At the fourth level, income tax is paid, where the profit oil allocated to foreign oil companies is subject to income tax at the statutory tax rate.

It can be seen that the income of foreign oil companies is basically composed of two parts: (1) basic income, which is derived from the recovery of foreign oil companies' investments and operating costs; and (2) profit sharing, which represents the distribution of investment profits to foreign oil companies. The income of the resource country primarily consists of three components: the use fee of the mining area, the resource country's share of production, and taxes. In a production sharing contract, the oil and gas products produced first have royalties deducted, and then the current recoverable cost is determined based on the upper limit ratio of cost oil. The remaining part

after deducting cost oil is profit oil. According to the contract, the remaining profit oil will be redistributed between the resource country and the national oil company or foreign oil company based on the agreed-upon proportions. Foreign oil companies will pay income tax on the profits they receive in accordance with local tax laws, and after-tax profits constitute the net benefits for foreign oil companies.

## **2.3 Advantages and Disadvantages of Production Sharing Contracts in International Oil and Gas Cooperation**

The production sharing contract is characterized by the resource country's ownership of resources and the corresponding economic benefits. The initial risk of exploration and development is borne by foreign oil companies. Upon commercial discovery of oil and gas, costs can be recovered and profit oil can be shared with the resource country. Compared with risk service contracts and concession contracts (based on a mining tax system), foreign oil companies enjoy a greater advantage in production sharing contracts, which better deals with the risk, control, and profit-sharing relationship in the exploration, development, and production of oil and gas resources between resource countries and foreign oil companies. The production sharing contract also provides the necessary adaptability and flexibility for both parties. The resource countries retain complete management rights in law, while foreign oil companies exercise control in their daily operations. This flexibility facilitates resource countries to design a production distribution framework on the basis of ensuring a fair rate of return for foreign oil companies, thereby ensuring that the income share of resource countries increases as oil and gas prices rise. More importantly, both parties have the opportunity to obtain oil and gas products, facilitating a win-win arrangement for both resource countries and foreign oil companies.

The disadvantages of production sharing contracts lie in their complex and variable framework and content. There are many factors that need to be determined by the two parties through negotiation, resulting in many uncertainties in the realization of the income of foreign oil companies. In addition, the implementation of production sharing contracts has high technical requirements. Foreign oil companies face not only numerous commercial risks but also political, technical, and other risks that affect their income and introduce uncertainties into their actual earnings.

### 3. Fiscal and Tax Provisions of International Oil and Gas Cooperation Production Sharing Contracts

The fiscal and tax provisions involve the key interests of both parties and constitute the core part of the production sharing contract, mainly encompassing the deposit clause, the mineral royalty clause, the tax clause, and the division clause for cost oil and profit oil. Additionally, resource countries and foreign oil companies will also agree on specific fiscal and tax provisions for the particular development projects.

#### 3.1 Deposit Clause

Production sharing contracts typically stipulate the requirement for deposits. A deposit is a fee paid by a foreign oil company to the resource country or owner for obtaining exploration, development, or production rights, including a signature deposit, a discovery deposit, and a production deposit: (1) A signature deposit is a deposit paid at the time of contract signing, also known as a contract signing fee; (2) A discovery deposit is a deposit paid upon making a commercial discovery; (3) A production deposit is a certain amount of deposit that needs to be paid when the output reaches or accumulates to a certain level within a specific period.

There exist differences in the provisions regarding the recovery of deposits in production sharing contracts across countries. Generally, signature deposits and discovery deposits are not recoverable, while production deposits may be recoverable. Some methods for recovering deposits are one-time recovery, while others are amortized over several years. For non-recoverable deposits, some countries stipulate that they can be deducted from pre-tax profits; for recoverable deposits, some countries stipulate that they can be used as cost recovery. For resource countries, the proportion of deposits to income is generally low. However, at the initial stage of the contract, deposits, especially signing deposits, can provide resource countries with a fund. As far as investors are concerned, the deposit is an additional burden beyond exploration and development investment.

#### 3.2 Mining Area Royalty Clause

Mining Area Royalty Clauses are not only prevalent in Production Sharing Contracts, but also commonly found in Risk Service Contracts and Concession Systems (Mining Tax Systems). It is reported that over 120 countries and regions impose mining royalties on oil and gas resources.

The mining area royalty represents an interest earned by the owner of mineral resources by leasing the resources to others for use. The mining area royalty is collected from the wellhead, with priority given to deductions from total income or total output, typically in the form of oil and gas in kind or cash. The owner of oil and gas resources is usually the state, and the mining area royalty reflects the state's ownership rights over these resources. The payment of royalties by foreign oil companies does not signify the acquisition of full or partial ownership, but rather an acknowledgment of the state's ownership of oil and gas resources. However, individual contracts may omit stipulating a mining area royalty or set it at zero, which does not negate the state's ownership of oil and gas resources. For instance, in Indonesia, the mining area royalty is reflected in the form of first oil, and setting the royalty at zero is merely a manifestation of the country's flexibility in adjusting contract terms. The average mining area royalty rate is approximately 10%, with considerable flexibility in specific rates. Some contracts agree to collect a certain proportion of total income, and the mining area royalty of production sharing contracts mostly slides according to the proportion of production change.

#### 3.3 Tax Clause

The tax clauses in the production sharing contract involve numerous tax items with varying tax rates. Some developed countries have a strong sense of sovereignty over mineral resources, imposing more tax items and higher tax rates for cooperative oil and gas development. In some developing countries, especially African countries, due to their immature oil and gas extraction technology and high extraction costs, they often exempt certain tax items or agree to lower tax rates in production sharing contracts to attract foreign oil companies for investment and development. The production sharing contract typically covers two types of taxes: (1) Oil taxes. Foreign oil companies are required to pay oil taxes, which are calculated based on the remaining amount after deducting mining area use fees (extraction taxes) and operating costs from the sale of crude oil. The tax rate depends on the size of oil field production. (2) Income tax, generally referring to the tax imposed on the portion of crude oil allocated to foreign oil companies after the extraction of cost oil and the division of profit oil. The profit after tax belongs to the foreign oil companies. There are generally two methods for collecting income taxes: (1) According to the same tax rate as general industrial and commercial

enterprises, which is adopted by most industrialized countries; (2) Levying income taxes on oil enterprises that differ from those imposed on general industrial and commercial enterprises, a method commonly adopted by oil-producing countries where oil revenue is the primary source. Furthermore, some production sharing contracts specify various tax items, including local taxes, defense taxes, development taxes, and industrial profit taxes.

### 3.4 Clause on the Division of Cost Oil and Profit Oil

In the early days, production sharing contracts typically stipulated a maximum limit for cost oil within the annual output, generally ranging from 40% to 50%, with cost recovery conducted accordingly. In recent years, the cost oil extraction stipulated in production sharing contracts has shown significant regional variations. Some contracts also specify different cost recovery methods, such as limiting the extraction based on the number of years or using depreciation and amortization as the basis for investment returns.

In summary, the cost oil clause in production sharing contracts is generally determined by both parties through negotiation based on actual production. Regarding profit oil terms, some contracts specify a fixed proportion, while others allocate based on the volume of production or the rate of return. In recent years, to increase profit income, some resource countries have often included provisions in contracts allowing national oil companies to participate in development investments.

## 4. Stability Clause of International Oil and Gas Cooperation Production Sharing Contract

Stabilization clauses were prevalent in natural resource concession agreements concluded by governments or their national entities in developing countries with foreign private investors in the 1960s, and have since been extended to national contracts in the fields of infrastructure construction and services. With the surge of international direct investment liberalization in the 1990s, coupled with localized turmoil in the international environment, the stability clause, as a risk management tool, has been widely adopted in cross-border cooperation contracts across nearly all legal jurisdictions and key industries<sup>(2)</sup>, and it has even become an indispensable clause in production sharing contracts.

The stability clause refers to a commitment made by a country to foreign investors through a contract (or

legislative provision), guaranteeing that the legitimate rights and interests of the parties to the contract will not be adversely affected by changes in national laws or policies<sup>(3)</sup>. The uncertainty and risk associated with cooperative development of oil and gas resources are relatively high. To secure more protections, foreign oil companies often negotiate for the inclusion of a stability clause, encompassing both restrictions on unilateral contract modifications and necessary safeguards for the rights of foreign oil companies.

The fiscal provisions of the host countries are the core of negotiations on the stability clause of the production sharing contract, determining the distribution of profits and revenues between the host countries and foreign oil companies. In most production sharing contracts, the fiscal provisions of the host countries should at least include clauses on the recovery of costs and the distribution of oil profits. Apart from the stability of fiscal regulations, foreign oil companies may also have concerns about investment returns and profits, encompassing issues like contracts and ownership, the sale of resource rights, and export rights. In addition, foreign oil companies usually propose rights that exceed purely fiscal provisions, such as requiring the repatriation of foreign exchange, the retention of offshore export sales income, the absence of compulsory currency exchange, and operational freedom that conforms to international standards.

As the stability clause evolves, three types emerge: freezing clauses, prohibitions against unilateral changes, and renegotiation clauses. The traditional freezing clause ensures that the laws, regulations, policies, and other relevant provisions in force and applicable in the "frozen" host country during the cooperative development of oil and gas resources remain unchanged, unsuspending, and irrevocable without the written consent of both parties, from the contract's effective date to its termination. However, with the enhancement of the legislation and sovereignty awareness of the host countries, it has been less used to prohibit unilateral legal changes after the conclusion of the contract through freezing clauses. Instead, in the event of significant changes in the contract's performance environment, the economic status of the parties at the time of contract signing is restored through renegotiation, thereby safeguarding the investment position of foreign oil companies. According to the provisions of the renegotiation clause, if the host country takes measures after the conclusion of the contract that may cause losses to the economic interests of the original party or both parties, it should be rebalanced. A common feature of

the balanced version is that it does not seek to prevent changes in the laws of the host countries, but rather addresses the economic impact of such individual changes on the original negotiations and establishes a framework for mitigation<sup>(4)</sup>.

## 5. Legal Provisions in International Oil and Gas Cooperation Production Sharing Contracts

The content of production sharing contracts is highly specialized and complex, inevitably leading to disputes that require resolution through legal provisions. Typically, legal provisions are stipulated towards the end of the contract, encompassing clauses on the applicable law and dispute resolution, which are crucial in determining the allocation of rights and obligations between resource countries or their state-owned oil companies and foreign oil companies.

### 5.1 Legal Application Clause

The legal norms of oil and gas cooperative development are obviously different. The application of laws in different countries and regions will produce different or even completely opposite legal effects. Given the complexity, flexibility, and professionalism of production sharing contracts, legal conflicts are inevitable. It is necessary to solve the problem of legal application and contract interpretation in the dispute settlement of the production sharing contract with the applicable provisions of the law. Taking the model contracts and existing contracts of production sharing in some countries or regions as examples, these clauses can specify the applicability of the laws of the resource country, a third country, international conventions, or international practices. Resource countries, based on their own and societal interests, often stipulate that production sharing contracts must adhere to domestic law, excluding the application of foreign law. For example, Article 467, paragraph 2, of the Civil Code stipulates that the legal application of nameless contracts and foreign-related contracts shall apply to the laws of the People's Republic of China for contracts of Sino-foreign joint ventures, contracts of Sino-foreign cooperative ventures, and contracts of Sino-foreign cooperative exploration and development of natural resources. However, solely relying on the law of the resource country to resolve contract disputes may lead to unfairness. In view of this, there are also some production sharing contracts that tend to apply third-country laws to protect the rights and interests of both parties more fairly.

The following considerations should be taken into account when selecting the law in the applicable legal provisions: (1) The choice of law should be express, not implied; (2) The timing of the choice of law should not be restricted; it can occur at the time of contract execution, subsequently, or even after the initial choice has been altered; (3) The choice of law must bear some relevance to the contract, and cannot be entirely unrelated.

When disputes arise between resource countries, national oil companies, and foreign oil companies, if the resource country is a member of an international convention, or there is a gap in the law related to the dispute or a conflict with the law of the resource country, the prevailing practice is to resolve disputes using international law conventions. In the absence of provisions in the laws of resource countries and international conventions, alternatively, oil and gas cooperative development practices may be applied. The so-called oil and gas cooperative development practices should be rational, safe, and effective, and constitute a necessary and widely accepted international norm in oil and gas operations.

### 5.2 Dispute Resolution Clause

The production sharing contract will specifically specify how the two parties will negotiate and address contract disputes in the event of such disputes arising. These are referred to as the dispute resolution clauses of the production sharing contract. The dispute resolution clause possesses a certain degree of independence. Even if the production sharing contract is rendered invalid or revoked due to various circumstances, the dispute resolution clause continues to play a unique role in resolving disputes.

The dispute resolution options for production sharing contracts include mediation, arbitration, and litigation. For instance, Article 25 of the Regulations on Foreign Cooperation in the Exploitation of Onshore Petroleum Resources stipulates that when disputes arise between the parties to a contract concerning the execution of cooperative exploitation of onshore petroleum resources, they shall be resolved through negotiation or mediation. If negotiation or mediation is unwilling or unsuccessful, the parties may submit the dispute to a Chinese arbitration institution or another arbitration institution for arbitration, based on the arbitration clause in the contract or a subsequent written arbitration agreement. If no arbitration clause is included in the contract and no subsequent written arbitration agreement is reached, the parties may file

a lawsuit with the People's Court of China. However, the production sharing contract is characterized by public law principles, resulting in unequal legal status for the two parties. The competent authorities of the resource country or the national oil company under its control serve as a party to the contract, involving the sovereignty of a country. The court of the resource country represents national sovereignty, which often discourages foreign oil companies from filing lawsuits there. Therefore, in disputes involving production sharing contracts, the parties typically opt for third-party arbitration over litigation. For example, Article 24 of the Regulations on Foreign Cooperation in the Exploitation of Marine Petroleum Resources stipulates that in the activities of cooperative exploitation of marine petroleum resources, disputes between foreign enterprises and Chinese enterprises should be resolved through friendly consultation. If it cannot be resolved through negotiation, the arbitration institution of the People's Republic of China shall mediate and arbitrate, or the parties to the contract may agree to arbitrate in other arbitration institutions, without stipulating the option of litigation. Arbitration can be categorized into expert arbitration and arbitration through arbitration institutions, which can further be divided into civil arbitration institutions and international arbitration institutions. Because there are numerous professional and technical challenges in international oil and gas cooperation, the two parties often adopt expert adjudication. They jointly select experts in the relevant field, who apply their professional knowledge and experience to resolve the dispute. Expert arbitration is fast and flexible, especially suitable for addressing professional and time-sensitive disputes in production sharing contracts(6).

## **6. Paths to Optimizing the Terms of China's International Oil and Gas Cooperation Production Sharing Contracts**

### **6.1 Strengthening the Information Support for the Formulation of Fiscal and Taxation Provisions**

At present, China is gradually transitioning from a resource country to an investor country. When Chinese oil companies engage in oil and gas cooperative development as investors, due to the significant differences in the level of economic development, the foundation of the oil industry, trading habits, the extent of closed control over oil and gas resources, and the foreign investment laws and policies across countries, fiscal and taxation clauses are formulated to ensure cost-effective recovery and achieve the expected profits of the project. In addition to

complying with the provisions of contracts and local laws, the formulation of fiscal and tax provisions should also enhance the collection of information and big data analysis on the latest policies, laws, trading habits, international practices, and other relevant project-related information in resource countries. Due to the long cycle of oil and gas cooperative development projects and the substantial uncertainty surrounding oil and gas prices and project output, the formulation of fiscal and taxation provisions often requires more precise calculations and technical information guidance. Besides legal talents, fiscal and taxation professionals, and oil and gas development technicians are also needed to thoroughly analyze all relevant information.

### **6.2 Preventing Sovereign Risks with Appropriate Stability Clauses**

As one of the important components of the production sharing contract between resource countries and foreign oil companies, the stability clause has increasingly embodied the balance between protecting foreign oil companies and respecting the sovereignty of resource countries in recent years. China now finds itself in a dual role as both a resource country and an investment home country. For foreign oil companies or resource countries, the stability clause plays an extremely important role. Regarding the selection and application of stability clauses, the traditional freezing clause serves to constrain the resource country itself, with the core focus being on its legislative sovereignty; the purpose of the renegotiated stability clause is to stabilize the legal system when energy investors sign contracts, excluding the impact of subsequent legislation on contractual relationships. The production sharing contract defines the elements of the stability clause through mutual confirmation by both parties, such as the situation of change, the effect on the contract, the right to produce a renegotiation request, and the goal of renegotiation. To ensure better negotiation between the two parties, there should be some flexibility in the economic conditions of the production sharing contract. Therefore, when signing production sharing contracts, foreign oil companies should thoroughly assess the domestic political risks and the level of rule of law in the resource country. Based on specific factors such as the contractual relationship between the two parties and the prospect of cooperation, they should clearly define the relevant triggers for invoking the stability clause and reasonably select the appropriate stability clause to enhance the flexibility and safeguard features of the production

sharing contract. As a resource country, when signing production sharing contracts with foreign oil companies, China should strictly follow relevant laws and regulations, negotiate stability clauses with foreign oil companies, and strive to attract foreign oil companies to invest in mining operations while maintaining a balance between safeguarding China's energy sovereignty and economic interests.

### 6.3 Establish a Dynamic and Flexible Contract Communication and Coordination Mechanism

Given the complexity and flexibility inherent in oil and gas cooperation and development, when confronted with sudden commercial risks, technological risks and even political risks, resource countries and foreign oil companies need to negotiate and resolve various emerging issues in a timely manner. Thus, the establishment of a dynamic and flexible contract communication and coordination mechanism is urgently needed to provide strong institutional support for preventing risks and avoiding losses. Therefore, China should closely monitor the dispute settlement clauses in the model production sharing contracts of the major resource countries in which it invests. When signing production sharing contracts, China should strive to avoid relying solely on the laws of the resource countries as the basis for dispute settlement, and prevent the dilemma caused by the lack of a legal system and inadequate due process guarantees. When signing production sharing contracts, Chinese oil companies need to intensify their research into the legal policies and potential risks of the resource countries. Regarding the dispute settlement clause, Chinese oil companies should consider adopting an international arbitration scheme acceptable to both parties as the final resolution, and timely propose amendments to the model contracts related to oil and gas development, exploration, and exploitation, as well as common energy sources, in resource countries. They should also select a neutral dispute settlement agency and familiarize themselves with its corresponding rules to safeguard their investment security.

As a resource country, when China signs a production sharing contract with a foreign oil company to determine the dispute settlement method, it should design a diversified dispute settlement approach according to Chinese law, and effectively manage the relationship between various dispute settlement methods such as negotiation, mediation, arbitration, and litigation. Based on the characteristics of different

oil and gas cooperation projects, a more reasonable dispute settlement clause for the production sharing contract should be formulated to maximize its effectiveness, thereby attracting foreign oil companies while safeguarding China's energy interests.

## 7. Conclusion

With the development of international oil and gas cooperation, a series of relatively mature and fixed oil and gas cooperation contract modes have gradually formed. Among them, the production sharing contract has developed into a relatively systematic and well-established system. China should not only pursue market-oriented and internationalized reforms in the oil and gas sector, but also ensure the preservation of state-owned assets and national economic security. It is imperative to not only establish a robust legal system for the oil and gas industry, but also create a market mechanism for allocating oil and gas resources tailored to China's national conditions. Furthermore, there is a need to continually refine the terms and regulations of various oil and gas cooperation contracts, including production sharing contracts, to mitigate risks and foster a market economy system for China's external cooperation in oil and gas resources.

### Funding

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