
**From the Changes in the Characteristics of International Oil and Gas Business Models to the
Guidance of Oil and Gas Policies in Resource Countries**

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Abstract: With the increasing importance of oil and gas resources in the development of the world economy, international oil and gas cooperation is also on the rise, becoming an important component of international economic cooperation. International oil and gas cooperation began in the early 20th century with the signing of lease agreements in the Middle East and Persia, and has a history of a hundred years. The initial agreement stipulated that foreign oil companies were only required to pay a mining fee, and they had full control over the oil resources, with all the crude oil produced ultimately belonging to them.

Keywords: International oil and gas business model; Resource country; Oil and gas policy

With the collapse of the colonial system in the 1950s, concession agreements were considered extremely unfair by resource countries. By the mid-1950s, the agreement was basically no longer signed and gradually evolved into a mining fee tax system contract. In 1966, I-IAPCO Company signed the first product sharing contract with Indonesian National Oil Company. Subsequently, mining fee tax contracts and product sharing contracts gradually became popular business models among many resource countries. At the end of 1997, Iran launched repurchase contracts for 42 blocks during public bidding, which were later adopted by the Iraqi government in its foreign cooperation. In 2007, the Iraqi President visited China to restart negotiations on the contract for the Ahdab oilfield signed between the former government and China National Petroleum Corporation, and officially signed the development and production service contract at the end of 2008. Throughout the development history of international oil and gas exploration and development business models, there are mainly four models: mining fee tax contracts, product sharing contracts, repurchase contracts, and service contracts.

1. Overview of Business Models for International Oil and Gas Cooperation Projects

(1) Mining fee tax system model

The mining fee tax system contract, also known as a license contract, is an evolution from traditional license agreements. Its characteristic is that foreign oil companies obtain physical crude oil and natural gas and pay mining area usage fees and income taxes to the government of the resource country. For an oilfield development project, a mining fee tax system contract can ensure that foreign oil companies receive net crude oil income during each production period, which is used to pay the total cost of oil and gas production, pay taxes, and obtain post tax profit distribution. Therefore, the level of production, in other words, the reserves and reservoir risks, have a significant impact on the benefits of investors. Investors must bear the risk of project losses caused by lower than expected production, but can also enjoy the excess profits brought by excellent oil and gas reservoir resources. This model belongs to a business model with high risk and high returns. Currently, the countries that adopt a mining fee tax system contract mainly include the United States, Canada, Russia, Kazakhstan, Thailand, China, Pakistan, Australia, New Zealand, and Papua New Guinea.

(2) Product sharing mode

Foreign oil companies invest and recover costs by utilizing the produced crude oil through operations, while the remaining oil and gas products are shared between foreign oil companies

and resource countries. Foreign oil companies obtain physical crude oil and natural gas. For a long-term oil and gas field development project, a product sharing contract can ensure that foreign oil companies obtain a share of oil and gas during each production period, which is used to recover investment, cost expenses, and obtain profit sharing. For oil fields with high reservoir potential, foreign oil companies can obtain excess profits from the mid to late stage production of the field. On the contrary, if the reservoir potential is poor, foreign oil companies will suffer significant losses. The product sharing contract model is widely adopted in international oil and gas cooperation and is a relatively mature business model. Currently, the resource countries that adopt product sharing contracts mainly include Sudan, Syria, Niger, Indonesia, Malaysia, Azerbaijan, Vietnam, Myanmar, Laos, India, and Libya.

(3) Repurchase model

By adopting this model, foreign oil companies do not achieve profits by acquiring products, but rather obtain fixed returns through contracted construction. Repurchase contracts are similar to engineering contracting contracts (turnkey projects), where resource countries can clearly predict the profits and recovery costs of foreign oil companies, with the total profit being the actual total investment multiplied by a fixed return index. The profits from foreign oil companies investing their own funds in projects are only concentrated in the first few years. With the transfer of projects, foreign oil companies will not be able to obtain the high profits brought by the production in the middle and later stages of oilfield development. Therefore, the size of investment and the level of return index have a significant impact on foreign oil companies. Currently, the only resource country using repurchase contracts is Iran.

2. Development characteristics of business models

On the stage of international oil and gas cooperation, a variety of business models have emerged, evolving from the early single contract system of mining fee taxation to the current multiple contract systems. The flexible and diverse terms of various contract models have attracted a large number of investors with diverse characteristics. Summarizing the international oil and gas business model, there are four prominent characteristics:

(1) Diverse contract models with low sharing ratios

With the continuous development of world oil and gas resources, the bargaining power of resource countries has further improved, and they are all trying new business models. More and more resource countries have combined various models to create complex and diversified models. The diversified contract models all stipulate lower oil and gas revenue sharing ratios for foreign oil companies, resulting in lower overall revenue levels for foreign oil companies in projects.

(2) The contract model is complex with multiple regulatory factors

At present, in mining fee tax contracts and product sharing contracts, the government of resource countries often strictly controls the income of foreign oil companies through some adjustment factors, which greatly reduces the income obtained by foreign oil companies. In most contracts, the cost recovery ratio, profit sharing ratio, and various tax and fee ratios are all related to the production step adjustment factor (the equity income of different foreign oil companies corresponding to daily oil and gas production) and the R factor (the ratio of cumulative income to cumulative expenses of foreign oil companies), as well as more factors. Resource country governments use these factors to regulate the income of foreign oil companies.

(3) The contract terms are harsh and the contract period is short

For the financial and tax terms of repurchase contracts, their harshness is mainly reflected in the short contract term, usually six to eight years. Foreign companies mainly operate oil and gas fields through engineering and technical services, and obtain cost recovery and compensation through oil and gas products in the short term. When the foreign oil company fully recovers its investment and receives compensation, the contract will terminate. This model enables project investment returns and returns to be achieved in the short term, while foreign oil companies will not be able to enjoy the potential excess profits of the oil and gas field in the future.

3.Resource oriented oil and gas cooperation

The governments of resource countries use business contracts to achieve the goal of playing games with foreign oil companies, while also achieving the goal of controlling the profits of foreign oil companies and maximizing the interests of resource countries in the development of oil and gas resources. Through comprehensive research, the main directions for oil and gas cooperation among resource countries are as follows:

(1) Adding factors to control overall returns

The government of the resource country will apply complex formulas and numerous factors in the contract, closely linked to the revenue of foreign oil companies. The core factors in the formula have a curved relationship with output, investment, and operating costs, and their changing trends have extreme values and inflection points, leading to the complexity of income calculation methods and the trend towards modeling. At present, the output step adjustment factor and R factor are widely used in mining fee tax rates, cost recovery, and profit sharing, as well as in the calculation of various taxes and expenses; In recent years, resource countries have proposed using oil price adjustment factors and internal rate of return factors to control the revenue of foreign oil companies. This further strengthens the government's control over contracts in resource countries and imposes strict restrictions on the overall profits of foreign oil companies.

(2) Add conditions and transfer investment risks

In early contracts, foreign oil companies were burdened with the possibility of not being able to recover investments and receive corresponding profits at the end of the contract due to low international oil prices or project production not meeting expectations. In the repurchase model, the actual investment size of the project also directly affects the income of foreign oil companies. Therefore, the risks of production, oil prices, investment, cost and expenses, as well as the political and economic risks of resource countries, are transferred to foreign oil companies through new models. This undoubtedly further increases the difficulty for foreign oil companies to engage in oil and gas cooperation.

4. Summary

International oil and gas cooperation has a hundred year history, and four models including mining fee tax system, product sharing, repurchase, and service are widely used in current international oil and gas cooperation. Understanding the specific content of different modes, mastering the four main characteristics of different modes, studying the three directions of oil and gas cooperation in resource countries, is crucial for business personnel engaged in this business, and provides theoretical and practical support for extensive participation in international oil and gas cooperation projects and competition with multinational corporations. Xiang, this is crucial for business personnel engaged in this business and provides theoretical and practical support for extensive participation in international oil and gas cooperation projects and

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