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# LEGAL AND ECONOMIC MECHANISMS FOR BALANCING STATE AND INVESTOR INTERESTS IN OIL AND GAS PROJECTS

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## Abstract

The article analyzes the legal and economic mechanisms for balancing the interests of the state and the investor in oil and gas projects, with an emphasis on production sharing agreements (PSA). The legal nature of PSAs, their differences from concessions, the stabilization clause, tax and customs regimes are examined. The cost recovery mechanism, the problems of cost overstatement (gold plating) and transfer pricing, as well as modern solutions based on artificial intelligence and digital reporting technology (RHT, DLT) are studied. Based on the analysis of international models (Azerbaijan, Malaysia, Norway), proposals have been developed to optimize investor costs, which makes it possible to increase the state's share and profit tax revenues.

**Keywords:** Production sharing agreement, PSA, legal nature, concession, tax regime, cost recovery, gold plating, transfer pricing, artificial intelligence, RHT, DLT, stabilization clause.

## INTRODUCTION

The oil and gas industry is of strategic importance for any national economy. More than 100 countries around the world use the mechanism of production sharing agreements (PSA) to attract foreign investment. Uzbekistan, as a resource-rich state, has significant experience in applying this mechanism. A PSA is a contract between the state (resource owner) and the investor (producer), according to which the investor carries out the search, extraction and production of minerals, after which the investor's costs are reimbursed from the



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produced products, and the remaining part is distributed between the state and the investor in established shares [1].

The effectiveness of a PSA is determined, first of all, by the volume and structure of the investor's costs, as well as the legal framework regulating tax, customs and reporting systems.

## **1. LITERATURE REVIEW**

The economic nature of PSAs is widely covered in international literature. Daniel Johnston (2008) in his work "International Petroleum Fiscal Systems and Production Sharing Contracts" emphasizes that the most negative factor in PSA practice is the lack of transparency of the cost recovery mechanism. The investor-operator has an economic incentive to inflate costs, thereby increasing the share of "cost oil" [2, p. 112].

Research from the Oxford Institute for Energy Studies shows that the phenomenon of cost overstatement (gold plating) – the use of more expensive technologies, equipment and standards than minimally necessary – can artificially increase costs by 20-30% [3].

In Uzbekistan, PSAs are regulated by the Law "On Production Sharing Agreements" (2001). According to Article 14, the investor has the right to recover allowable costs [1].

## **2. RESEARCH METHODOLOGY**

The research methodology is based on the application of comparative legal, analytical and systemic approaches. The information base includes normative legal acts of the Republic of Uzbekistan, international production sharing agreements, statistical data and scientific publications. The analysis uses methods of content analysis, legal modeling and expert assessment.

## **3. RESULTS AND DISCUSSION**

### **3.1. Legal Nature of PSA and Differences from Concessions**

According to Article 3 of the Law on PSA, a production sharing agreement is a contract under which the Republic of Uzbekistan grants a foreign investor, on a fee basis and for a certain period, exclusive rights to identify, explore and extract



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minerals on a specified subsoil plot, and the investor undertakes to carry out these works at its own expense and risk [1].

An analysis of the legal nature of PSAs shows that they are fundamentally different from concessions. Under a concession, the investor is granted ownership rights to the subsoil, whereas under a PSA, the investor only receives the right to use them. This difference is the main factor in the formation of a separate taxation and reporting system for PSAs.

Article 3 of the Law includes among the mandatory terms of the agreement "terms of taxation and payment of other fees" and "procedure for accounting and reporting." These norms constitute the legal basis for establishing a special tax regime and a separate reporting system for PSAs.

### **3.2. Economic Advantages of PSAs**

PSAs provide the state with a number of economic advantages [2; 6]:

**Firstly**, attracting significant amounts of foreign investment and minimizing their risks on a shared basis with the state, without attracting budget funds.

**Secondly**, creating a long-term and stable source of budget revenue. The duration of PSAs is 20-30 years, during which the state regularly receives royalties, profit tax, the state's share and bonus payments.

**Thirdly**, providing access to advanced technologies and management experience.

**Fourthly**, direct assistance in the development of local personnel, projects and infrastructure, including the creation of jobs (80% for the local population) and the development of social infrastructure.

### **3.3. Tax and Customs Regulation of PSAs**

The object of profit tax on income received from the performance of work under a production sharing agreement is the value of the profit oil belonging to the foreign investor under the terms of the agreement, without making deductions [4].

According to Article 264 of the Tax Code (as amended in 2020), taxpayers purchasing goods (services) under a PSA are subject to VAT at a zero rate by offsetting (refunding) the tax paid. Paragraph 12 of Article 297 of the Customs



Code exempts goods intended for carrying out work under a PSA from customs duties [5].

### 3.4. Stability of PSA Terms (Stabilization Clause)

Article 24 of the Law on PSA guarantees the stability of the terms of the agreement. According to this norm, the terms of the agreement remain in force throughout its entire duration. Changes can only be made with the consent of the parties. If legislation introduces norms that worsen the commercial results of the investor's activities, the terms provided for in the agreement apply. This provision is known in international practice as a "stabilization clause" [1].

### 3.5. Comparative Analysis of International PSA Models

To identify the most effective approaches, a comparative analysis of PSA models in Uzbekistan, Azerbaijan, Malaysia and Norway was carried out.

Parameter	Uzbekistan	Azerbaijan (ACG)	Malaysia	Norway
<b>Main model</b>	PSA	PSA	PSA (Production Sharing Contract - PSC)	Licensing + high taxes
<b>Profit tax</b>	Determined by PSA	20% (standard) or under PSA terms	38% (special regime for PETRONAS)	78% (22% + 56%)
<b>State share</b>	Determined by PSA (50-80%)	ACG: ~80% of profit oil; SOCAR 31.6%	PETRONAS: more than 70%	Equinor + high taxes (78-91%)
<b>Royalty</b>	Determined by PSA	Absent (replaced by state share)	10% (for offshore fields)	Absent
<b>Stabilization clause</b>	Yes	Yes	Yes (through PETRONAS)	No
<b>System stability</b>	Medium	Medium	High (political and economic)	Very high



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*Source: compiled by the author based on analysis of international agreements, legislation and reports of international organizations [2; 6; 7; 8].*

**Key features of the Malaysian model:**

- PETRONAS (state oil company) exercises direct control through PSC.
- The system has been operating successfully since 1974.
- No major arbitration disputes (unlike Kazakhstan).
- PETRONAS is among the top 10 largest oil companies in the world.

If we examine the Norwegian oil taxation system in detail (9), the tax system for the oil industry is based on the rules of ordinary corporate taxation and is set out in the "Petroleum Taxation Act" (Act of 13 June 1975 No. 35 relating to the taxation of subsea petroleum deposits, etc.). Due to the exceptionally high profitability from the extraction of petroleum resources, oil companies are subject to an additional special tax. The ordinary corporate tax rate is 22%. To ensure a neutral tax system, the corporate tax paid is deductible when calculating the special tax base. This results in a special tax rate of 71.8% to maintain a combined marginal tax rate of 78%. Total estimated tax revenues from activities in the oil and gas sector in 2025 will amount to approximately 374 billion Norwegian kroner.

The oil industry tax system is designed to be neutral so that an investment project that is profitable for the investor before tax remains profitable after tax. This generates substantial revenues for Norwegian society while simultaneously incentivizing companies to implement all profitable projects. As a rule, only the company's net profit is taxed. Levies such as royalties are no longer part of the tax system. Deductions are allowed for all relevant expenses, including expenses related to exploration, research and development, financing (ordinary tax), operations, and decommissioning.

Consolidation between fields is permitted. This means that losses from one field or exploration costs can be written off against the company's income from operations elsewhere on the Norwegian continental shelf.



### Calculation of tax on petroleum products (9)

Ordinary Corporate Tax	Special Tax
Operating profit (based on normalized oil prices)	Operating profit (based on normalized oil prices)
Operating expenses	- Operating expenses
Straight-line depreciation of investments (6 years)	Depreciation of investments (100%)
Exploration, R&D, and decommissioning expenses	- Exploration, R&D, and decommissioning expenses
- Environmental taxes and area usage fees	Environmental taxes and area usage fees
Net financial costs	Calculated ordinary tax
(Loss carry-forwards)	
<b>= Corporate tax base (22%)</b>	<b>= Special tax base (71.8%)</b>

### 3.6. Cost Recovery Mechanism

According to Article 14 of the Law, allowable costs are understood as the costs of the investor or operator provided for in the budget for the performance of work in the next year, approved in accordance with the established procedure [1].

#### Non-recoverable costs include:

- fines and penalties for violation of legislation;
- costs incurred as a result of violation of technologies;
- voluntary charitable contributions;
- costs for items exceeding the limits established by the agreement.

### 3.7. Problems of Cost Overstatement and Solutions

#### 3.7.1. Gold plating

**Essence:** Using more expensive technologies, equipment and standards than minimally necessary for the project.

#### Solutions:

- establishing technically and economically justified minimum requirements;
- checking the economic justification of each cost item;



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- implementation of mechanisms for analyzing alternative proposals based on price-quality ratio.

### **3.7.2. Transfer pricing problem**

**Essence:** The investor attracts affiliated service companies instead of using transparent market mechanisms, which allows setting non-market prices for services within the framework of internal corporate policy [2].

**Solutions:**

- engaging international audit companies to verify compliance with market prices of all major contracts;
- imposing the obligation to conduct open international tenders;
- legislative consolidation of the state's right to reject unjustified costs or affiliated contracts.

### **3.8. Innovative Technologies: Artificial Intelligence and Digital Reporting Technology (RHT)**

At a video conference meeting chaired by President Shavkat Mirziyoyev (October 21, 2025), the importance of artificial intelligence in eliminating "corruption, uncertain situations and gaps" was emphasized.

**"Smart contracts" based on AI for PSA:**

1. **Automated tax calculations** – AI automatically calculates the state's share and tax payments after determining the volume and price of products produced.
2. **Cost auto-correction** – AI analyzes tariffs and inflation indicators to adjust the mechanism for reimbursing operating costs.
3. **Cost reality assessment** – AI analyzes international market prices to verify the compliance of proposed cost estimates with average market indicators.

**Digital reporting technology (RHT) to ensure transparency:**

- **Initial recording of costs** – all operations are pre-recorded in a blockchain-based digital system, which prevents subsequent changes.
- **Real-time monitoring** – government agencies can monitor the status of the project in real time.
- **Environmental monitoring** – AI monitors the environmental situation around the field using satellite data and sensors.



Digital Transformation of PSA Based on Distributed Ledger Technology (DLT)  
One of the promising innovations capable of fundamentally changing the mechanism for balancing state and investor interests in PSAs is Distributed Ledger Technology (DLT). Traditional PSAs are characterized by high dependence on data reliability (production volumes, costs, prices) and a fundamental conflict of interests between the parties. The main problem is insufficient trust in data and lack of transparency in calculations. DLT offers a fundamentally different solution: the transition from a contractual trust model to a **technological trust model**. Within the proposed "DLT-enabled PSA" model, data from IoT sensors is recorded in a distributed ledger, eliminating disputes over production volumes. Smart contracts automate cost recovery and profit oil distribution calculations, eliminating human error and manipulation. Each cost is recorded in the ledger linked to contract categories, reducing the risks of cost overstatement and transfer pricing. In addition, DLT enables real-time auditing and automatic verification of limits. The economic effect of DLT implementation is expressed in an increase in NPV (by reducing the risk premium), an increase in investor IRR (by accelerating cost recovery), and an increase in the state's share (Government Take) by reducing revenue leakage and increasing accounting accuracy. The proposed model is particularly relevant for countries with high resource potential and institutional risks (Uzbekistan, Kazakhstan, Iraq).

### 3.9. Optimization of Investor Costs and Increase in State Revenues

Indicator	Baseline Scenario	Optimized Scenario	Difference
Total revenue	100	100	0
Royalty (30%)	30	30	0
Cost oil	40	25	-15
Profit oil	30	45	+15
State share (50%)	15	22.5	+7.5
Profit tax (20%)	3	4.5	+1.5
<b>Total state revenue</b>	<b>48</b>	<b>57</b>	<b>+9 (+18.75%)</b>



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The table shows that optimizing costs by 15% can increase state revenues by 18.75%.

#### **4. CONCLUSION AND PROPOSALS**

Based on the results of the study, the following conclusions were drawn:

- 1. A separate tax and customs regime has been established for PSAs.** According to the legislation of Uzbekistan, PSA participants are completely exempt from taxes during the period of exploration work, profit tax is calculated separately (from the cost of profit oil), VAT is applied at a zero rate, and customs duties are not charged.
- 2. PSAs operate within the framework of a special tax regime.** Article 18 of the Tax Code establishes a "special taxation procedure for PSA participants," which guarantees their non-classification as payers of the single tax, exemption from rent tax and the right to accelerated tax refund.
- 3. The cost recovery mechanism is a key factor determining the effectiveness of PSAs.** Reducing costs to a reasonable minimum directly increases the state's share and tax revenues.
- 4. To solve the problems of gold plating and transfer pricing, it is necessary to introduce modern technologies (AI, RHT) and independent international audit mechanisms.**
- 5. The stabilization clause (Article 24 of the Law on PSA)** guarantees investors legal and tax stability, providing the opportunity for long-term planning.
- 6. International experience (Azerbaijan, Malaysia, Norway)** shows that the most effective models are those with a high state share (70-90%), a stable tax system and the absence of major arbitration disputes. The Malaysian model (PETRONAS + PSC) is a benchmark for countries with developing economies.

#### **Practical proposals:**

- 1. Make changes to legislation:**
  - legislatively consolidate the state's right to reject unjustified costs or affiliated contracts;
  - establish mandatory independent international audit.



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**2. Implement technological mechanisms:**

- create an automated tax calculation system based on AI;
- introduce digital reporting technology (RHT) based on blockchain for initial recording of costs and monitoring in real time.

**3. Improve personnel policy:**

- introduce targeted training programs with a mandatory work period of 3-5 years;
- develop a mechanism for proportional compensation (based on the refinancing rate) in case of early dismissal of employees who have undergone training at the operator's expense.

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