



# An operational risk analysis of Iran Buyback contract and its policy implication



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## ARTICLE INFO

### Article history:

Received 2 January 2016

Received in revised form

7 February 2017

Accepted 10 February 2017

Available online 11 March 2017

### Keywords:

Iran buyback

Operational risks

Economic evaluation

New Iran petroleum contract

## ABSTRACT

Buyback contract has played a key role in utilizing foreign investment on Iran's oil and gas industry from the inception. However, the success of buyback has been rarely proved, and there are very limited studies on theoretical risks without digging into operational analysis. Risks are identified by qualitative analysis, and four novel operational risk scenarios are simulated and evaluated by economic evaluation. It is concluded that the risks embedded in Buyback contract should be duly eliminated in new Iranian petroleum contract. The philosophy of integrated managerial system for reservoir in long term, improved policy structuring and coordination between Iranian ministries, solutions for contractual defects, governance structure for higher efficiency, and specific technical details are recommended.

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## 1. Introduction

Due to the constitutional ban on foreign investors' property right to oil and gas reserves, Iran has applied an exclusive service contract pattern to attract the investment from international oil and gas corporations ("IOCs") in upstream sector ever since the early 1990's [1]. Under such contract, IOCs shall carry out all activities by their own financial resources and at its sole risk during the development period, and upon the production National Iranian Oil Company ("NIOC") will reimburse the accepted costs plus certain remuneration fee. Since generally the reimbursement from NIOC is in-kind, it seems that IOC is committed to buying back the oil or gas produced from the project, so this kind of service contract got another name as "Buyback Contract."

Though at least 25 Buyback contracts have been engaged for the development of Iranian oil and gas upstream projects from the inception, their performance and result are not so desirable. The indicator is that nearly all the Buyback projects have suffered the delay in different levels, and accordingly the significant economic loss, and there is rare report regarding the success of any of them. Wood Mackenzie [2] reported in 2015 that only one of eight

buybacks has reached the expected rate of return (ROR). More strikingly, with the withdrawal of western IOCs from Iranian market in fear of the ever-worsening US-led sanctions since 2009, only two Chinese oil companies as foreign investors remained in Iran. But the Buyback regime seemed fail in retaining such survivors or tapping their initiatives given that one of Chinese projects was withdrawn by investor [3] while another was prematurely terminated by NIOC at the excuse of delay [4].

Recognizing the undesirability and inherent drawbacks of Buyback framework and driven by the thirst for foreign investment on its energy sector [5], [6] and great dependence on revenue generated from oil sector [7,8], Iranian government is determined in introducing a new Iran Petroleum Contract ("IPC") to replace the unpopular Buyback one [9,10]. The relative low production level [11–13] in contrast with its tremendous reserves [14] is expected to be altered via IPC regime. In such circumstance, the critical analysis of the defects and limits of Buyback scheme will help shape the IPC model and avoid the similar failures in future, which entails the in-depth studies from both theoretical and operational viewpoints. When speaking of the contract structuring and its subsequent implementation, what really counts is not the logic but the practice.

Actually, rather limited studies have been conducted [15–21] on the Iran Buyback contract. Among these publications, four of them were made before 2006, and one is the case analysis in 2012. The ongoing projects (including the early abandoned or terminated ones) after 2009 have never been studied. Although Ghandi and Lin

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in 2013 [17] performed fruitful analysis on risk factors of Buyback contracts, which shares common concerns presented in this paper, the coverage of risks and the methods to evaluate the risk factor is rather one-dimensional. Therefore, while previous research has enhanced our general understanding of the Iran Buyback contract, very few works were involved to reflect its most updated development.

Unprecedentedly, an overall operational risk analysis, which has not been elaborated on previously, will be performed in this paper, and a systematic updated understanding of Buyback contracts can be achieved. This will be enlightening for IOCs and pragmatic Iranian elites to remedy current defects and facilitate the success of proposed IPC through policy restructuring. It is believed the experience and lessons from the practical operation are usually as important as and sometimes even overweighing the observations from pure theoretical deduction.

This article will extend in below path: Section 2 will update the overview of Iran Buyback contract, and risks factors are identified in Section 3. The method for quantitative analysis, data, results and discussion are given in Section 4 and Conclusions are presented in Section 5.

## 2. Updated review of buyback contract

Under an Iranian Buyback contract, an IOC will spend its own money to develop one oil/gas project and then get repaid for the cost plus margin from the revenues of the same project after production. The project will be handed over to NIOC after production, and IOC's entitlement will end either when the recovery is accomplished or the contract term expires, whichever is earlier. A typical Iranian Buyback contract can be characterized briefly as (1) within a certain period, (2) to spend a certain capped investment, (3) accomplish a certain workload, (4) achieve a certain production level and then (5) to earn a certain ROR as the maximum. In addition to previous researches [15,19,20], each of said "certain" element will be further discussed which constitutes the base for the analysis in Section 3 and 4.

Fig. 1-fishbone diagram (Fig. 1) shows the cause and effect relation among those five elements, in which ROR is the expected effect and the other four are causes.

First, the concept of investment under Buyback contract is understood from the perspective of IOCs, and in practice all expenditures thereunder are considered as Petroleum Costs, including five first-level costs, that is, Capital Cost (Capex), Non-Capital Cost (Non-Capex), Bank Charges, Operation Cost before handover and Production Support and Assistance Cost after handover if any.

Capex includes direct capital costs and project management costs (PMC), and PMC is limited to a certain percentage (e.g. 10%) of direct capital cost, and any excess is not allowed for recovery. Once a Capex ceiling (CCC) stipulated in Buyback contract is set, it can only be amended upon the approval by NIOC. Non-capex refers to Iranian charges and levies imposed on IOCs, which mainly include Iranian custom duties, Iranian withholding tax, Value Added Tax ("VAT") paid during development period and social security premium, etc. Iranian corporate income tax paid by IOCs during recovery period will be reimbursed by NIOC. It has to be noted that the role and treatment for VAT during development and recovery period has not been instructed clearly, and NIOC has not been able to achieve such clarification from Iranian tax authorities, related risks will be further discussed in Section 3.

Bank charges will be accrued after the Capex and Non-Capex are incurred and paid. Bank Charges show the financing costs for the expenditures, and is calculated based on the London Inter Bank Offer Rate ("LIBOR") plus certain premium. It is noteworthy that normally such premium is less than 0.75%, which is in compliance

with the requirement from Iranian tax regulations on the financing costs from parent company. It also should be noted that the role of Bank Charge under Buyback contract should be carefully reviewed. Although Bank Charge is classified as one type of Petroleum Cost, in nature it is part of margin over historical costs to be received by IOCs; therefore, Bank Charge is the cost for NIOC while the profit for IOCs.

Second, a Buyback contract has the limited term. Fig. 2-life span (Fig. 2) illustrates the whole life of one project, and inspires the application of total quality management philosophy from the perspective of IOCs. Fig. 3-milestone of contract term (Fig. 3) contains most contractual timing points, excluding exploration. Effective Date is the starting point of the Contract Term always declared by NIOC, and costs incurred before Effective Date are not recoverable. All development activities have to be accomplished within certain period, and after successful production test approved by NIOC, the project will be handed over to NIOC, which will be the end of Development Period, and also the start of cost recovery period. All accepted Capex, Non-Capex after being audited by NIOC plus accrued Bank Charges and Remuneration will be paid to IOCs during recovery period. Contract term may be longer than Development plus Recovery Period, and can only be extended as mutually agreed after tough negotiation.

Third, the main workload will be agreed through Master Development Plan ("MDP") and then related Front End Engineering Design ("FEED"). Changes to MDP will be construed as amendment to the scope of Buyback contract. The excessive costs over CCC without the additional work will not be recoverable.

Fourth, a period for target production level will also be stipulated. Before the handover to NIOC, a production test has to be performed and accepted by NIOC. The actual production deviating from the target will result in the adjustment to the Remuneration.

Fifth, ROR is the utmost IOCs can earn, and may be adjusted in certain circumstances. Bank Charges together with Remuneration are the margins over the total historical costs and contribute to the realization of ROR. Remuneration will be calculated in equal monthly installment when the Capex ceiling is determined, and will be paid on quarterly basis during recovery period. In addition, as dual control to restrain the total remuneration fee, the ratio of remuneration against Capex (R/C factor) will also be used as one benchmark to cap the recoverable.

Fig. 4-revenue allocation (Fig. 4) illustrates how the gross revenue will be allocated between IOCs and NIOC. Normally, according to Wood Mackenzie [2], 40% of revenue will be taken by NIOC as government priority oil, and the remaining 60% will be used as source for recovery (Recovery Pool). All entitlements of IOCs will be paid out of recovery pool, and the remaining, if any, belongs to NIOC. The remaining unrecovered part can be postponed in succeeding period, and the sufficiency of recovery pool will be evaluated during the whole contract period, and IOCs will suffer from such insufficiency of Recovery Pool.

## 3. Qualitative analysis

Risks for IOCs [20] include lower oil price than the agreed upon threshold, cost overrun, delay in construction, lower production profile and higher operation and maintenance costs. NIOC also faces risks such as sub-optimality in engineering to achieve higher production profile, overestimation of capital expenditure to increase Remuneration and Bank Charges and non-integration of up-and-downstream activities.

The IOCs will not be entitled to benefit from higher oil price than the threshold price; and in return, IOCs will not suffer decrease in profit provided that the actual price is higher than the threshold. This fact is impressive especially in year 2015 and 2016 when the oil

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