



Contracts for Petroleum Development - Part 2

Petroleum contracts are long and complex. Production sharing agreements, the type of contracts being signed in Cambodia, are no exception. However, they are important to the country's future economic and development options and hence it would be helpful if the public had a basic understanding of how these contracts work and, in particular, how government revenues are determined. This briefing note, part 2 of a three-part series, describes the terms used in defining payments made by petroleum companies and the order in which they are paid.

Many developing countries around the world use production sharing agreements (PSAs) to govern the relationship between the state and petroleum companies. PSAs in the oil sector were first developed in Indonesia; the Asian governments that have used production sharing include China, India, Malaysia, Pakistan, the Philippines, Timor Leste, and Vietnam. Beginning in 2002, the government of Cambodia has signed a series of PSAs.

Briefing Note No. 7 gave an overview of the legal framework governing the petroleum sector and two types of contractual systems, concessionary and production sharing [1]. This note discusses in more detail different aspects of fiscal terms in production sharing.

There is a fundamental conflict between petroleum companies, referred to as contractors in production sharing, and the government: both want to maximize their respective revenues and minimize risks. The government can potentially increase its revenue by setting tax, royalty, and other rates at high levels, but doing so could deter investment, especially in marginal fields, and reduce, rather than enhance, the government's overall revenue. Judging what would be a reasonable burden on petroleum companies is one of the challenges in setting up an effective fiscal system.

Responding to Market Incentives

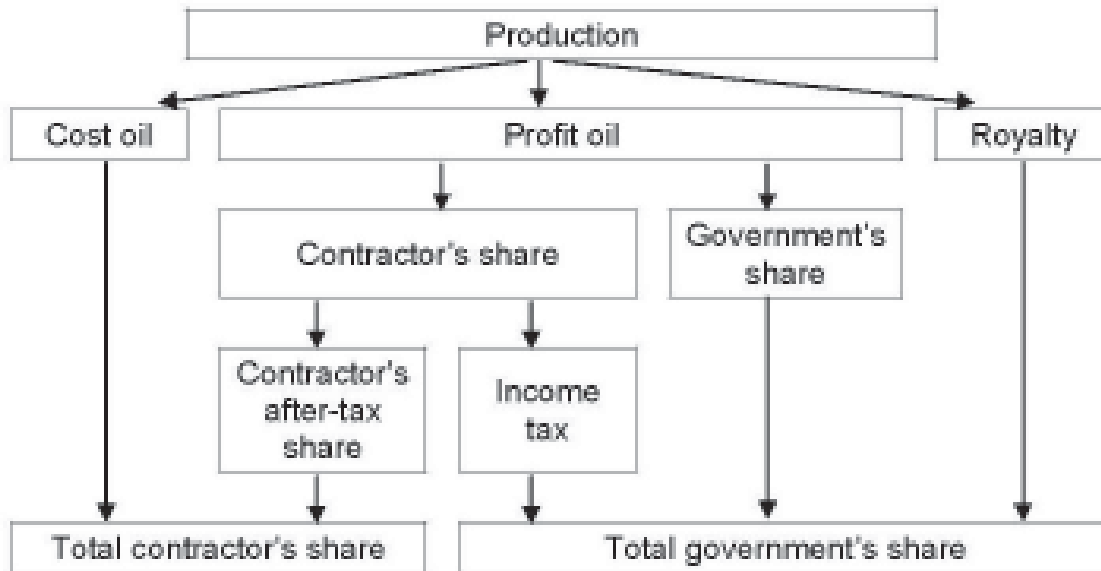
Briefing Note No. 7 explained that some fiscal terms are *regressive* and others are *progressive*. Briefly, if the percentage of the net-of-cost income

flowing to the government increases with increasing income—that is, government income rises at a faster rate than the net-of-cost project income—the fiscal parameter is progressive. Progressive parameters tend to be based on some measure of profitability. To reflect profit elements, two approaches are often used.

- ◆ An *R-factor* is the ratio of cumulative receipts from the sale of petroleum to cumulative expenditures. This ratio is initially zero—during exploration there is no sale of petroleum while there may be considerable expenses—and gradually grows in time. An *R-factor* less than 1 would mean that costs have not been fully recovered yet: total expenditures exceed total receipts. The larger the *R-factor*, the more profitable the operation. The royalty rate or the government's share of production may increase with increasing *R-factor*.
- ◆ In the *rate-of-return* contracts (also referred to as resource rent royalties, resource rent taxes, or trigger taxes), the government receives additional income from the contractor's cash flows in excess of specified thresholds for the internal rate of return. The rate (for royalty, tax, production share) due to the government increases with increasing rate of return—the more profitable the operation, the higher the rate.

Fiscal parameters based on either of these are among the most progressive.

Figure 1 Production Sharing Revenue Flow



Revenue Streams

Typical revenue streams in a PSA are shown in Figure 1. Oil (or gas) produced is split into cost oil, profit oil, and the royalty.

Royalty

Royalties are based on the volume or value of petroleum extracted. Royalties may be paid in cash or in kind; if the latter, specified amounts of oil, gas, or both are delivered to the government. Royalties are paid as soon as commercial production commences, thereby providing early revenue to the government. They also ensure that contractors make a minimal payment. Simple royalties—for example, 10 percent of the value of the oil extracted—are easy to administer, but do not take into account the profitability of the project and hence are regressive. As such, royalties deter investment. One way of redressing this is to make the royalty rate depend on the level of production, increasing it with increasing production. The rationale is that larger production levels lead to greater profitability because of economies of scale (this is not always the case, because many factors other than the scale of production affect a project's profitability). In that case, royalties are said to be on a sliding scale. Some countries have designed the royalty rate to depend on the R-factor.

Cost oil

Cost oil refers to the oil retained by the contrac-

tor to recover the costs of exploration, development, and production. Most PSAs limit the amount of cost oil that can be retained in a given accounting period. Costs that are not recovered are carried forward and recovered later; most PSAs allow virtually unlimited carry forward. The cost oil limit is the only substantive distinction between concessionary systems and production sharing. It is another avenue available to the government to ensure early revenue.

Certain expenses may not be eligible for cost recovery. Examples include bonuses (see below), royalties; interest or other financing related payments and overheads beyond specified limits; and costs outside the budget, unless approved by the government.

Profit oil

Profit oil is the share of production remaining after the royalty is paid and cost oil has been retained by the contractor. Profit oil can be paid in cash or in kind. In its simplest formulation, the agreement may stipulate that the profit oil be split, for example, 40/60—the contractor's share being 40 percent and the government's share 60 percent—irrespective of the world oil price or production level. Production sharing can also be on a sliding scale: the percent share of the government can increase with increasing production level, cumulative production, R-factor, or rate of return.

Income tax

In Figure 1, the contractor is subject to income

tax based on taxable income. Income tax is paid after production is shared in this figure; it is also possible to write a PSA in which income tax is paid before production sharing (see Briefing Note No. 9). APSA does not have to provide for the actual payment of taxes, and instead can include the tax equivalent portion in the government's share. Known as a pay-on-behalf scheme, it assures stability with respect to income tax. The tax equivalent portion is subtracted before production sharing.

Bonuse

Bonuses are the most regressive fiscal parameters and give early revenue to the government. *Signature* bonuses are paid when the contract becomes effective, and can be considerable in highly prospective areas. For example, the first financial report for the Nigeria Extractive Industries Transparency Initiative showed that Shell Nigeria Ultra Deep Limited in 2003 paid US\$210 million as a signature bonus [2]. In 2006, a new record was set when Sonangol-Sinopec International, a joint venture between two national oil companies from Angola and China, bid a total of US\$2.4 billion for the relinquished parts of two blocks in Angola [3]. *Production* bonuses are paid at the start of commercial production and when production reaches specified levels. Bonuses are generally not recognized as cost-recoverable expenses.

Surface rental and other fees

Contractors pay annually for acreage covered by a PSA. Surface rental fees are often given in monetary units per square kilometer, so that the overall flow to the government declines with each relinquishment. There are other fees, such as fees paid by bidders in licensing rounds or contributions to the training of government personnel which, if not spent, are payable in cash.

Other taxes

Other taxes include withholding tax, foreign national and sub-contractor income tax, value added tax, and customs duties.

Payments in kind

Contractors may undertake social programs (such as building schools and clinics) and infrastructure de-

velopment (such as building roads) on a voluntary basis. Training of local employees is another example. Training of government officials is normally a contractual obligation.

Accounting Rules

Accounting rules also affect how much and when the government will receive revenues from contractors. It is not the intention of this note to explain these rules, but they are mentioned to give a sense of what contractors look for. They include ring-fencing by contract (or sometimes by field), depreciation rates, allowance for accelerated depreciation, loss carry forward, treatment of pre-production expenses, uplifting of costs, rules against thin capitalization, and treatment of abandonment costs.

Foreign Tax Credit Considerations

Foreign petroleum companies must pay income tax to their home governments. Foreign companies are allowed to credit taxes paid to the host government (the government of the country in which petroleum operations are being conducted) against tax liabilities in their home countries, provided that the tax in question is an income/profit tax and a tax certificate is issued by the host government.¹ In pay-on-behalf schemes, to enable foreign tax credits, the host country taxes are still calculated and the host government issues a tax certificate.

Everything else being equal, it does not make sense to set the income tax rate markedly lower than those prevailing in the countries where contractors are headquartered, because that would likely mean that the difference would be paid to foreign tax authorities - the host government would be sacrificing tax revenue to foreign governments when doing so offers no additional incentives for investment.

How Payments Are Made

Signature bonuses, as explained above, are paid before any work starts. Surface rental fees and a few other fees and taxes are paid prior to production, but they are relatively small. Once commercial production starts, Figure 1 gives an illustration of what happens to receipts from petroleum sale. The royalty is paid first. The contractor is next allowed to recover costs, often up to a specified limit, in the form of cost

¹ To avoid double taxation, there are often, but not always, formal agreements between governments to coordinate taxation provisions so that the net income is not taxed twice. Cambodia has no bilateral tax treaties. However, income tax paid in Cambodia can be credited if it meets the criteria of income tax in the home country. In the United States, for example, foreign income tax is creditable against U.S. income tax liabilities if it is a tax on net income.

oil. Revenues remaining after royalty and cost recovery constitute profit oil (or gas), and are shared between the government and the contractor. In Figure 1, the contractor is further required to pay income tax on its share of profit oil.

While bonuses and royalties start flowing early on, corporate taxes and the government's share of production usually do not start flowing in significant amounts until costs are substantially recovered. Because upfront investment costs in oil and gas may be very large, it could take several years from the start of production before the government receives any sizeable revenue.

Illustration

A very simplified case is given in Figure 2 to illustrate how the system in Figure 1 may work. For simplicity, only the royalty, production share, and income tax are considered; bonuses, depreciation and loss carry forward rules, surface rental and other fees, and other taxes and payments due are not considered.

Figure 2 Revenue Flow From Two Barrels of Oil

Contractor		Government	
	Royalty 10%	→	\$10
\$25 ←	Cost oil 60% limit		
\$26 ←	Profit oil 40/60	→	\$39
-\$7.8	Tax 30%	→	\$7.8
\$43.2 ←	Total	→	\$56.8

Figure 2 considers the proceeds from the sale of two barrels of oil at US\$50 each, giving a total of \$100 in gross revenue to be shared between the contractor and the government. In accordance with Figure 1, the royalty is paid first. At 10 percent, this amounts to \$10 going to the government. Out of the remaining \$90, the contractor recovers costs to the limit permitted, in this case 60 percent of the gross revenue or US\$60. The total expenses incurred (including pre-production expenses) amount to US\$25

for these two barrels, and the contractor can take as cost oil the full cash expenditures incurred because US\$25 is less than the maximum allowable limit of US\$60.

This leaves profit oil of US\$65. The production split in the PSA is 40 percent for the contractor and 60 percent for the government. The government takes 60 percent of US\$65, or US\$39, and the remaining US\$26 goes to the contractor. The contractor has to pay income tax out of its share of profit oil. For paying income tax, there are no limits on deductible expenses in the way there are limits on cost oil. (In this example, however, costs recovered in this accounting period happens to be the same for both cost oil and for income tax purposes.) The taxable income is US\$26 (100–10–25–39), giving an income tax of US\$7.8. The end result is that the contractor retains US\$43 and the government takes \$57.

In practice, calculations of revenue streams are more complex because of depreciation, loss carry forward, and the determination of deductible costs (for tax purposes) which normally differ from recoverable costs (for computing cost oil). The next briefing note will illustrate how different fiscal terms can affect revenue flows to the government over the life of a contract.

References

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- [2] Hart Group. 2006. "Nigeria Extractive Industry Transparency Initiative Financial Audit. Financial Flows 1999–2004." www.neiti.org/files-pdf/FARFinFlowsUpload.pdf.
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