WORLD BANK GROUP

Workshop Working Paper

Petroleum Legislative Frameworks and Contracts in a Federation: Issues for Constitutions and Petroleum Laws, Regulations, and Contracts

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"Building Knowledge on Petroleum Resources Management"

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1 Background and Introduction

1.1 Background

In August, 2012, following a prolonged period of internal conflict and insecurity, the Federal Government of Somalia ("**FGS**") was brought to power, together with a provisional constitution and a parliament. The establishment of the FGS represented an important step in laying the foundations for sustainable peace in the Somali Peninsula. Significant challenges remain, however, in order to help ensure that such a result can be achieved. These challenges are both political (e.g., clearly defining the wealth- and power-sharing arrangements that are vital to the success of a federal system and establishing institutions capable of providing basic services) and economic (e.g., generating sufficient revenue to develop infrastructure and to provide essential public services) in nature.

Recent oil and gas discoveries in East Africa provide a potential opportunity to meet the economic challenges facing the Somali Peninsula, but those same discoveries underscore the need to adequately address the political challenges described above. Significant petroleum revenue streams have transformative potential. But the road from initial discovery to a flourishing, well-managed oil and gas sector is challenging to navigate, and many countries have for a variety of reasons failed to successfully realize the promises of petroleum potential. Indeed, without adequate foresight and planning, nations seeking to capitalize on resource wealth instead frequently find themselves to be less developed and less prosperous than similar countries that have not discovered natural resources.

A number of mechanisms exist that can help countries avoid this so-called "Resource Curse" phenomenon. The linchpin of each of these mechanisms is the adoption of a transparent and robust legal, regulatory, and fiscal framework that optimizes the exploitation of oil and gas in light of a country's particular circumstances. The World Bank has embarked on a technical assistance program to help achieve this result. Among the first steps in this process is to encourage collaborative dialogue within the Somali Peninsula by (i) identifying and seeking participation of all relevant federal, regional, and clan stakeholders, and (ii) seeking to establish a level playing field of knowledge related to the petroleum sector and its development. This knowledge base will serve as a platform in advance of planned high-level consultative meetings between regional and federal authorities aimed at achieving, as part of the ongoing constitutional process, agreement on ownership, control, and revenues sharing of petroleum resources.

1.2 Introduction

As part of the process outlined above, the World Bank has engaged Hunton & Williams as one of a number of consultants that will contribute to a series of workshops and corresponding articles on certain technical aspects of the petroleum sector. This article will discuss two fundamental petroleum sector concepts: (i) petroleum sector legislative

frameworks in a federation, and (ii) petroleum agreements and associated fiscal regimes. Properly structuring both the legislative framework that will govern a country's petroleum sector and the petroleum agreements and fiscal regime that will establish the parameters for particular investments are essential components in attracting foreign petroleum investment funds while at the same time ensuring that the host country maximizes its return on its natural resources. The following sections will discuss the key characteristics of successful petroleum sector legal and regulatory frameworks, petroleum agreements, and fiscal regimes, including issues of particular importance in federal systems.

2 Petroleum Legislative Frameworks in a Federation[1]

2.1 Overview

All countries with petroleum resources face the challenge of establishing a clear, robust, and effective petroleum legal and regulatory framework. But meeting this challenge is an essential aspect to ensuring that a particular country and its citizens reap appropriate rewards from those resources. Petroleum legal and regulatory frameworks that clearly address all of the key issues that typically arise in connection with the development of petroleum resources help to reduce the potential for disagreements and conflicts, both with foreign investors and within the country itself. Foreign investors in particular will require comfort that each of these key issues is adequately addressed. To the extent a country's framework lacks clarity on, or is substantially inconsistent with international best practices on, these key issues, such foreign investors will likely require higher risk premiums on any investments in that country.

Beyond the general need for clarity in the petroleum legal and regulatory framework, countries with federal systems face an additional layer of complexity—namely, balancing sub-national rights and autonomy with the need for national development, policy coordination, and regional equity. Setting aside the need to have clarity in order to attract investment in the petroleum sector, this additional complexity requires careful analysis and negotiation among national and sub-national stakeholders to ensure that all stakeholders are in agreement on how the petroleum framework should be structured.

A clear, well-thought out petroleum sector framework that has the support of all stakeholders can form the foundation for equitable distribution of the many benefits that can flow from the development of petroleum resources. Petroleum frameworks that lack clarity and/or support from key stakeholders, however, run the risk of creating or exacerbating conflict among interested parties.

The first step in achieving this goal is for each of the stakeholders to have a common base of understanding of how successful petroleum legal and regulatory frameworks are structured. There is no one right answer for creating these frameworks, but there are a number of general principles that will help to ensure that a framework will provide sufficient clarity, both for domestic stakeholders (helping to reduce the potential for internal conflict once petroleum revenues begin to flow) and for foreign investors (helping to attract investment so that petroleum revenues will begin flowing in the first instance).

[1] Note: we understand that the World Bank team is in the process of developing a strategic view on the issue of the interplay between the petroleum sector legislative framework and the petroleum policy framework that is reflected in the constitution. Accordingly, the treatment of this issue in this draft article is subject to revision for consistency with the World Bank team's strategic view, to ensure consistency on this issue across the various articles and presentations that constitute this project.

The key considerations relating to each of the principal components of a petroleum sector legal and regulatory framework—typically, constitutions, petroleum laws and regulations, and model petroleum agreements—are discussed below.

2.2 Key Constitutional Issues

A country's constitution typically establishes fundamental, bedrock principles and other high-level considerations that are unlikely to be disturbed once enshrined. The most important consideration in ensuring an equitable and stable petroleum sector—particularly in federations with potentially conflicting local and national interests—is a clear and robust regime for allocating petroleum revenues.

The topic of petroleum revenue allocation presents a number of inherent tensions that are often difficult to resolve. These tensions, which are frequently resolved at the constitutional level, range in character from geographic (allocation as between central, regional, and local bodies), to temporal (allocation as between applying funds in the present for development and poverty reduction and preserving funds for use by future generations), to other policy-based objectives (allocation to general budgets or to one of the various types of management funds that are frequently employed, such as stabilization, development, and sovereign wealth funds).

2.2.1 Geographic Considerations

Petroleum resources are often unevenly distributed from a geographic perspective, which raises the question of how to determine an equitable allocation among sub-national entities and as between national and sub-national interests. One approach to balancing national interests and the need for national development with sub-national interests is to establish fixed percentages of petroleum revenue that will accrue to the various national and sub-national stakeholders. This approach, which is used in Indonesia, has the virtue of clarity, but it is also inflexible—particularly if the percentages are prescribed in the constitution and if the constitution is difficult to amend. Other countries, such as Nigeria, call for sharing based on percentages, but reserve for the legislature the determination of the percentages at prescribed intervals.

In terms of allocation between sub-national entities, many states, such as Sudan, allocate to regional governments to some extent based on whether the region is a petroleum producing or non-producing region. Some regimes call for distribution only to producing regions; others, such as Nigeria, may take other factors into account, such as equality of states, land mass, and similar considerations.[2]

An issue associated with geographical allocation is the capacity of sub-national bodies to appropriately handle the extremely large cash inflows that can result from fixed-percentage or similar allocation in the event of large petroleum finds. If a fixed-percentage allocation (or, indeed, any allocation that may result in cash flows to sub-national bodies that are greatly in excess of what those bodies are used to managing) is selected, measures should be taken to ensure that such funds are managed properly.

[2] *See generally* EI Sourcebook, *available at* http://www.eisourcebook.org/699_87RevenueAllocation.html.

Such measures could include sub-national capacity building for managing sums on the scale anticipated to be received, and requiring sub-national bodies to identify appropriate uses of funds prior to allocation. In other words, the capacity of the proposed recipient of funds to properly manage those funds should be taken into account when determining the approach to allocating petroleum revenues; capacity building should be undertaken in order to align the management capabilities of the various entities that will receive petroleum revenues with the scale of those entities' projected revenue allocations.

2.2.2 Temporal Considerations

In terms of temporal allocation, countries face a choice as to whether to apply petroleum revenues to address the needs of the present, or to preserve some or all of those revenues for use by future generations. Developing countries often face acute, pressing needs in the present, including infrastructure development, poverty reduction, and education. Such countries may elect to invest petroleum revenues in these areas immediately to improve the lives of its current citizens, rather than diverting revenues into a savings fund for use in the future alone—in part on the theory that improvements in these areas would benefit not only the current but also future generations.

Well-developed countries, on the other hand, might not have significant, immediate domestic needs that could be addressed by petroleum revenues. Such countries may be more inclined to invest a substantial portion of their petroleum revenues in a sovereign wealth fund ("**SWF**") that can be designed to preserve revenues for the benefit of future generations.

2.2.3 Other Policy Considerations in Revenue Allocation

Petroleum revenues can also be allocated and managed through the use of various types of funds that are targeted at achieving certain policy objectives. Aside from the geographic and temporal allocation considerations described above, there are a number of other policy objectives that countries may seek to achieve via the use of management funds. These policy objectives include (i) smoothing the effects of revenue volatility that may arise due to fluctuating oil prices via oil revenue stabilization accounts ("**ORSAs**"); (ii) mitigation of exchange rate pressures to avoid the so-called "Dutch Disease"; (iii) diversification of industry; and (iv) earmarking funds for specific objectives. In some cases, a single fund is used in an attempt to address multiple objectives. Norway's SWF, for example, combines a temporal allocation (to preserve oil revenues for use by future generations) with stabilization and exchange rate mitigation objectives.

Regardless of allocation choices, secure collection of petroleum revenues is essential. Petroleum revenues will often be initially collected centrally to ensure resource rents are securely collected and accounted for, prior to allocation pursuant to a country's chosen regime.

The common thread to all of these petroleum revenue allocation considerations is the need to undertake a broad consultative process involving all key stakeholders in order

to achieve consensus on the appropriate allocation approach for a country's particular circumstances—ideally, this consensus would be achieved before petroleum revenues begin flowing.

2.2.4 Ownership of Petroleum and Other Issues

Constitutions frequently address other petroleum-related issues in addition to revenue allocation, which considerations frequently include defining the ownership of petroleum and certain transparency issues. In terms of petroleum ownership, some countries have adopted an approach that grants ownership to the individual or company that holds the surface rights over the petroleum deposit (e.g., the United States). Some constitutions, however, provide that ownership of petroleum resources vests in the state, whether that be with the federal or regional government or some combination thereof. Canada, for example, provides for ownership of natural resources by the provinces in which the deposits are located; Nigeria vests title to natural resources in the federal government.

The issue of ownership can be treated distinctly from control of revenues flowing from petroleum resources—for example, North Sudan and South Sudan agreed on a revenue allocation mechanism without an agreement as to ownership in the 2005 Comprehensive Peace Agreement. But ambiguity in terms of ownership in federal systems can be a source of dispute between national and sub-national governments, and can be a source of significant political risk for investors (which, in turn, could adversely affect petroleum revenues realized by the country). Accordingly, it is important that, whether enshrined in the Constitution or addressed elsewhere within a country's petroleum legal and regulatory framework, these issues are clearly addressed to avoid potential confusion and conflict.

Constitutions may also include specific transparency requirements to help ensure appropriate levels of accountability in the petroleum sector. Kenya's constitution, for example, includes a requirement that petroleum agreements be ratified by the legislature before taking effect. Under this approach, the terms of petroleum agreements are made public (at least to some extent), limiting the potential for corruption.

2.3 Key Considerations for Petroleum Laws and Regulations

In addition to the petroleum-related provisions in a constitution, petroleum legal and regulatory frameworks typically consist of several components: (i) a petroleum law, which is broad sector legislation that establishes the general rules for participation in the sector, (ii) petroleum regulations, which set out the detailed mechanisms for implementing the rules established in the petroleum law, and (iii) other related legislation that is not petroleum-specific, but nonetheless impacts petroleum-related issues. These other pieces of legislation frequently include overarching energy sector legislation, which can assign many of the sector roles and responsibilities (to the extent such roles and responsibilities are not assigned in the petroleum law or in the constitution), as well as other laws of general application (e.g., land laws that govern

acquisition of and compensation for land required in connection with petroleum development).

2.3.1 Petroleum Sector Roles and Responsibilities

Regardless of the specific location within the legal and regulatory framework, all such frameworks should clearly assign responsibility for each petroleum sector function (policy-making, upstream, and midstream/downstream, each of which is discussed below). Delineation of roles avoids inefficient overlap of responsibility and inconsistent treatment of similar issues. Lack of clarity with respect to roles and responsibility could result in, among other things, conflicts of interest, reduced accountability, costly delays in decision-making, and perceived higher risk by the investment community, requiring correspondingly higher return expectations. Failure to address these issues will thus lead to reduced benefits of petroleum resources accruing to the host country.

(a) Policymaking

In many countries, the policymaking function is reserved for the ministry responsible for energy—including Norway's Ministry of Petroleum and Energy, Ghana's Ministry of Energy, Mozambique's Ministry of Mineral Resources, Tanzania's Ministry of Energy and Minerals, and Indonesia's Ministry of Energy and Mineral Resources, among many others. In federal systems, however, the legal and regulatory framework needs to establish the nature and extent of input in the policymaking process that will be reserved for sub-national entities. In Iraq, for example, the federal government and the relevant regional and provincial governments have shared responsibility for setting strategic policy for developing petroleum resources for the benefit of the Iraqi people.

As is the case with the question of allocation of revenues, the crucial lesson from international experience is that the policymaking role be clearly assigned, so that all parties (including domestic stakeholders and foreign investors) can have a definitive understanding of the country's petroleum sector policy.

(b) Upstream Roles

Upstream petroleum sector roles include conducting public tenders for awarding petroleum agreements, negotiation of petroleum agreements, contract compliance and administration (including ensuring compliance with commercial, technical, health, safety, and environmental aspects of petroleum agreements and applicable laws), and state participation (whether as an operator or as a government representative in commercial ventures).

These roles are often divided in some fashion between the relevant ministry, potentially a statutory authority reporting to the ministry, and the state-owned oil company. In the Netherlands, for example, the State Supervision of Mines is an executive agency of the Ministry of Economic Affairs, and is tasked with upstream petroleum oversight responsibility (including health, safety, and environmental oversight). The Ministry of Economic Affairs itself, however, is responsible for petroleum licensing.

In Mozambique, the Ministry of Mineral Resources is tasked with granting concessions, but responsibility for ensuring that petroleum operations are conducted in accordance with applicable laws and contractual commitments is delegated to the National Petroleum Institute (or "**INP**").

On the other hand, Ghana's Petroleum Regulatory Authority—responsible for regulation, oversight, and monitoring of activities in the petroleum upstream and midstream sectors—and Mexico's National Hydrocarbons Commission—which regulates and supervises exploration and production of hydrocarbons, as well as hydrocarbon storage, transportation, and processing activities—are independent upstream regulatory entities, rather than agencies reporting to the relevant petroleum ministry.

Once again, federal systems need to consider whether these roles will be filled entirely by federal entities, entirely by regional or local entities, or some combination of the two. Often these decisions turn on a number of considerations, such as (i) what level(s) of government has (or can be built to have) the capacity to carry out the relevant function(s); (ii) what level of consistency across the country is desired with respect to rules, regulations, contract terms, etc.; and (iii) what level(s) of government can most effectively be held accountable for their management of upstream petroleum responsibilities.

Whichever approach is adopted, the framework again needs to be clear—for example, investors will be much more likely to invest on reasonable terms when there is a degree of certainty as to which entity has the authority to conduct tenders and enter into petroleum agreements.

(c) Midstream and Downstream Roles

Key midstream and downstream roles typically assigned in petroleum frameworks include regulation of tariffs for midstream assets such as pipelines and LNG facilities, ensuring efficient use of midstream transportation and downstream distribution capacity, pipeline and LNG safety, environmental oversight, and state participation in midstream and downstream infrastructure. It is important to ensure that regulator and operator functions of public entities are clearly separated, as per best practices in the world. Where regulation of prices is involved (such as in the midstream and downstream context), independence of the regulatory entity regulating those prices is essential in order to prevent undue political influence on market mechanisms.

Tanzania's independent Energy and Water Utilities Regulatory Authority, for example, has authority to regulate rates and charges, but its authority over the petroleum sector is limited to transportation and distribution. Indonesia's regulator is responsible for midstream and downstream aspects of the petroleum sector, and for setting transportation tariffs and prices of natural gas to households and small customers.

In terms of state participation in pipelines, Mozambique's CMG (an 80% subsidiary of state-owned ENH, with the other 20% owned by the state itself) participates in natural

gas pipelines. Tanzania's TPDC is also involved in various pipeline projects. Pipeline projects are also frequently developed as public-private partnerships ("**PPPs**") throughout the world.

2.3.2 Other Key Structural Aspects of Petroleum Frameworks

In addition to assigning roles and responsibilities within the petroleum sector, petroleum laws and regulations also establish key structural aspects of the sector, ranging from licensing and contract award, to environmental matters, to local content and transparency requirements.

(a) Licensing and Contract Award

In countries that have not previously had any petroleum discoveries, petroleum legal frameworks often award petroleum licenses or contracts without using competitive bidding processes—given that comparatively fewer contractors are interested in exploration in a country without prior discoveries, there is unlikely to be sufficient competition for exploration licenses to warrant the institution of a competitive bidding process for granting such licenses.

As countries experience more petroleum discoveries, however, more contractors become interested in exploring in those countries. More interest yields a more competitive environment, which implies that the government will likely be able to secure more favorable terms by introducing competition to the contract award process. This process typically involves awarding contracts on the basis of public tenders (except under specific circumstances).

Angola and Mozambique, for example, each conduct public tenders for contract award, but permit other methods in particular circumstances, e.g., direct or simultaneous negotiations following a public tender that failed due to the lack of bids.

Public tenders for petroleum licenses or contracts are conducted using a variety of parameters, and there is no particular set of parameters that is considered to be "best." There are, however, a number of common approaches, many of which in some form involve bidding profit sharing rates, exploration work programs, and signature bonuses. For example, Suriname's January 2013 bidding round was based on phase 1 exploration work program obligations and fixed minimum R-Factor sharing percentages, for which contractors bid an additional percentage to be added to each such minimum rate.[3]

(b) Environmental Matters

Most petroleum sector legislation will at minimum require contractors to carry out their obligations in accordance with industry accepted notions of environmental responsibility, frequently referred to as "good oilfield practices," or similar terminology—though the degree to which the scope of that term is defined varies considerably.

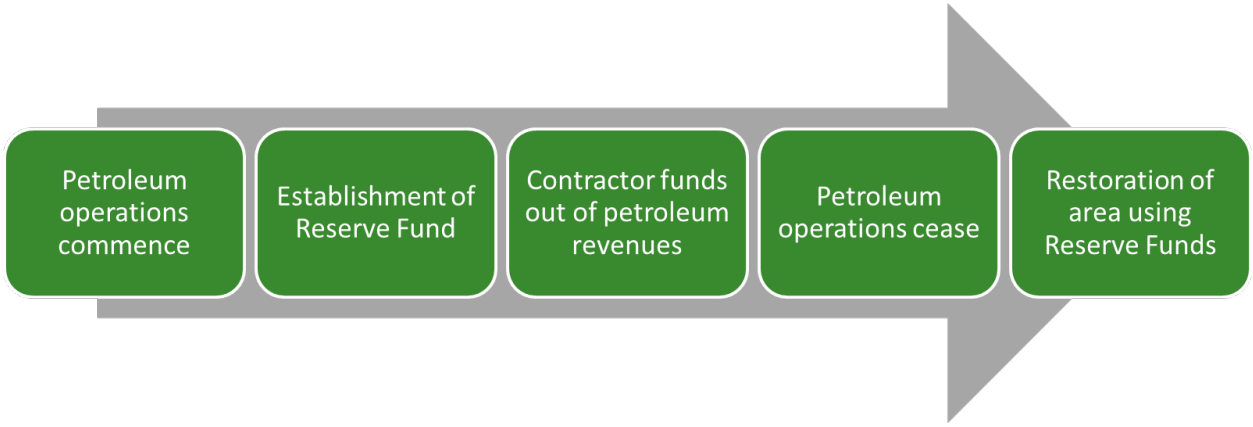
[3] See below for a discussion of the "R-Factor" sharing mechanism.

It is also fairly common for sector legislation to require contractors to comply with generally applicable domestic environmental laws and regulation. More comprehensive regimes also require contractors to submit environmental and social impact assessments and environmental management plans for avoiding environmental damage, and remediation plans for addressing any environmental incidents that occur (sometimes including a requirement to pre-fund an environmental remediation fund).

Many regimes specifically assign responsibility for payment for environmental damage arising out of petroleum operations to the contractor, or require the contractor to carry insurance to cover such damage.

Modern petroleum legal frameworks also require that, once petroleum operations cease in a given area, the area be restored to its original state. This can be a costly process, and presents a risk that contractors may avoid carrying out appropriate decommissioning at the end of the terms of their license. To address this risk, some jurisdictions call for the establishment of reserve funds to be used to pay for decommissioning.

Figure 2.1: Using a Reserve Fund for PSC Decommissioning Obligations



Natural gas flaring is another significant environmental issue that is frequently accounted for in petroleum legislative frameworks. Best practices regionally and internationally generally impose a ban on gas flaring except in a narrow set of specific circumstances, such as facility or well testing or for safety reasons. Such flaring is also typically carefully regulated and monitored. Angola, Ghana, Mozambique, Nigeria, Tanzania, and Uganda are among the countries that have adopted this approach.

In addition, the World Bank leads a Global Gas Flaring Reduction (GGFR) partnership, which is aimed at reducing the flaring of associated natural gas worldwide. The GGFR recommends clear, comprehensive, and unambiguous legislative treatment of the flaring issue, including regulation, monitoring, and fiscal terms to provide incentives for the use of associated gas and/or penalties for gas flaring. The GGFR also recommends, among other things, that access to gas infrastructure—pipelines and processing facilities—be open and non-discriminatory to enable associated gas usage.

(c) Local Content

Successful implementation of local content requirements—those that ultimately result in substantial technology transfer, knowledge transfer, capacity building of local industry, and generation of local employment opportunities—are difficult to achieve due to the many variables at play. Experiences around the world have shown that appropriate balancing of local content requirements with current and projected domestic institutional capacity is essential, as is unified stakeholder support.

Perhaps the best route to ensuring that local content requirements imposed on contractors are balanced to take into account all relevant factors, and capable of evolving over time as institutional capacity increases, is for the petroleum legislation to be less prescriptive (at least initially) and provide for oversight of local content progress by stakeholders. Nigeria, for example, has established a separate board to monitor and implement its local content provision (although, given the long history of Nigeria's petroleum sector, Nigeria also has rather prescriptive local content legislation). Nigeria's recent legislation also includes a clear definition of what constitutes "local content," which definition is widely accepted in the industry: "the quantum of composite value added to or created in Nigeria through utilization of Nigerian resources and services in the petroleum industry resulting in the development of indigenous capability without compromising quality, health, safety and environmental standards."

Successful local content implementation—that which creates opportunities of entrepreneurship, utilizes and expands on existing capacity and capabilities, and both adds value and creates an environment for sustained value additions—will almost certainly be a gradual process, and thus the key concept in any legislation on this topic is flexibility.

Establishment of specialized training funds—into which funds raised by contractors, in the amounts specified in their petroleum agreements, are to be contributed and subsequently withdrawn as authorized by the relevant authority and used for training purposes—is also common.

(d) Transparency Requirements

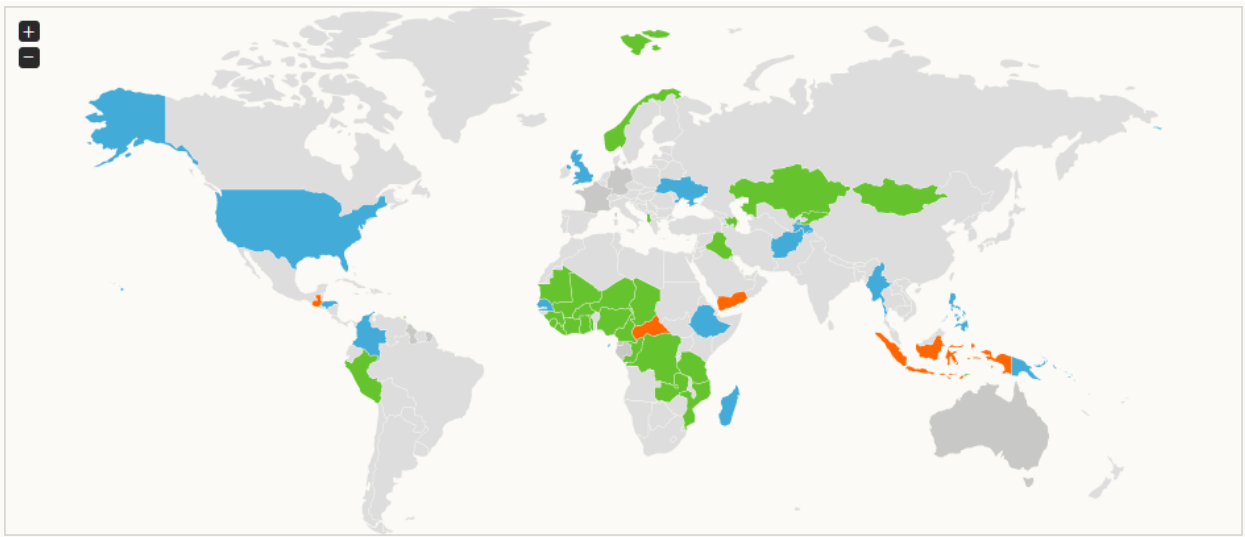
There is growing international consensus on the importance of transparency in promoting good governance in the petroleum sector. Improving transparency and accountability requires multiple measures, both voluntary, multiple-stakeholder efforts—such as compliance with the Extractive Industries Transparency Initiative ("**EITI**"), which broadly requires extractive industry companies to publish what they pay to governments, and governments to publish what they receive in an EITI Report—and mandatory, regulatory measures spelled out in the petroleum legal and regulatory framework.

Figure 2.2: Structure of EITI Reports

Source: EITI.org

Currently, 32 countries (including well as Ghana, Mozambique, Nigeria, Tanzania, and Zambia) are EITI-compliant, with another 16 countries in the processing of implementing EITI's requirements.

Figure 2.3: EITI Countries



Source: EITI.org (as of 24 March 2015)

As part of the need to ensure transparency and accountability across the petroleum value chain, petroleum legal and regulatory frameworks can (i) impose transparent and competitive procedures for issuing licenses and petroleum exploration and production

rights; (ii) establish competent and non-corrupt institutions with clear and non-overlapping mandates in the regulation and monitoring of operations; (iii) require publicly reported, equitable, and progressive fiscal regimes that avoid non-published special deals and minimize tax avoidance and evasion; and (iv) prescribe transparent revenue management. A lack of transparency at any one point in the petroleum value chain may result in a spread of misinformation and growing mistrust, and appropriate legal framework provisions can help to ensure that this does not occur. When countries increase their level of transparency in the petroleum sector, particularly by achieving compliance with the EITI, they send a signal to investors that they are intent on avoiding the Resource Curse, and they help to demonstrate that the country has a sound business climate that would be attractive to investors.

2.4 Structure and Use of Model Petroleum Agreements

Petroleum agreements—discussed in greater detail in Section 3—are an important component in a government's efforts to reap the benefits of its natural resources. Because of this important role, governments frequently seek to standardize certain terms for contractors investing in the petroleum sector through the use of model petroleum agreements. This approach can be used under various fiscal regimes (e.g., model service contracts under a service contract regime, or model concession agreements under a tax and royalty approach). Production sharing contracts are the most common form of petroleum agreement, and thus this section will focus on model production sharing contracts (or "**PSCs**"), but the general principles apply to the other forms of model agreements used under other fiscal regimes.

One key to successful employment of model PSCs is ensuring that the host country has the requisite resources to ensure that contractors are complying with their legal and contractual obligations—contract compliance is always important, but particularly so under certain petroleum sharing mechanisms. Using model PSCs can go a long way toward achieving that goal, by standardizing most of the contractual obligations that will apply to contractors.

Model PSCs work hand-in-hand with the host country's mechanism for contract award, as the model petroleum agreement will set out all of the common terms that will be applicable to all petroleum contractors, such as:

(i) general standards of conduct applicable to the contractor;

(ii) contract area relinquishment obligations;

(iii) ring-fencing (the extent to which contractors are permitted to offset costs from one exploration/contract area against revenues from another);

(iv) stabilization clauses (the extent to which contractors will be protected against changes in law/tax during the term of the contract);

(v) environmental obligations;

(vi) production sharing mechanism; and

(vii) dispute resolution/arbitration provisions.

The model agreement will typically leave placeholders for the bid parameters specified in the contract award procedures established under the petroleum law and regulations. The winning bidder's petroleum contract will then reflect the common terms from the model PSC and the bid parameters from the contractor's bid, together with any other negotiable items (which are typically limited in scope).

3 Petroleum Agreements and Fiscal Regimes

3.1 Overview

Countries with petroleum resources—particularly those without a long history of petroleum development—typically seek to engage foreign companies to develop those resources. These countries face an inherent tension between the desire on one hand to establish a fiscal regime that will provide the most revenue for the country and its citizens, while on the other hand establishing a fiscal regime that will be attractive to investors to develop those resources.

Resolving this tension requires striking an appropriate balance between attracting investment and maximizing revenue. Fiscal terms that are nominally very favorable to governments can have a chilling effect on investment. In the most extreme case, fiscal terms that provide for 100% of petroleum revenues flowing to government sound favorable, but no contractors would invest on those terms—100% of $0 of petroleum production would result in $0 for the government and its citizens. Yet fiscal terms that are overly generous to contractors would likely yield vast investment, but would limit the benefits flowing to the host country. Again, taking the most extreme example, fiscal terms that provide for 100% of petroleum revenues going to contractors would result in overwhelming contractor interest and investment, but the host country would not see any benefits from its natural resources—0% of any revenue stream would result in $0 for the host country.

The key to striking an appropriate balance between these two extremes is to adhere to a few basic principles for designing fiscal regimes, and to choose an appropriate type of petroleum agreement for implementing that fiscal regime.

3.2 Fundamental Principles of Petroleum Fiscal Regimes

The three most important principles for designing a successful petroleum fiscal regime are (i) sanctity of contract; (ii) attractiveness to investors; and (iii) establishment of manageable contracts with robust contract compliance.

3.2.1 Sanctity of Contract

Respecting the sanctity of contract is essential for attracting foreign investment. Petroleum resource development is by its nature a long-term business, as significant revenues under a petroleum agreement might not begin flowing for 5-10 years after the agreement is signed, and it will be sometime after that before the investor's costs are recovered. Accordingly contractors are far more likely to invest in a country when they are comfortable with the stability of the contractual and fiscal regime.

Contract terms should therefore not be altered in the absence of agreement by all parties to the contract. Such a commitment implies that host countries should exercise diligence and care in executing petroleum agreements that will be acceptable over the long run.

3.2.2 Attractiveness to Investors

As a general matter, progressive fiscal regimes are more attractive to investors. A fiscal regime is "progressive" if it is one in which the government take increases in proportion to profits—that is, the greater a contractor's profits, the larger the share of the petroleum revenues derived under that contractor's petroleum agreement that flows to the government. This characteristic ensures that the framework is responsive to windfall situations where either the volumes of oil or gas, or the realized oil or gas prices, are higher than expected.

Fiscal regimes should also be established on the basis of competitiveness with alternative investment decisions. Each country with petroleum reserves presents investors with a risk/reward calculation (essentially, weighing the prospectivity of the country—or the relevant block(s) within the country—against the contractor's proposed share of petroleum revenues). Investors will not view a country's fiscal regime in isolation, but will instead compare it with the risk/reward proposition of other countries. This requires governments to analyze the risks of investing in comparable countries and the rewards offered by those countries, and to structure their fiscal regimes accordingly.

3.2.3 Contract Compliance

Contract compliance is of utmost importance in ensuring that governments receive the benefits to which they are entitled, and that petroleum operations are conducted properly and in accordance with the petroleum agreement and with the broader petroleum legal and regulatory framework. This includes compliance with all of the commercial, technical, health, safety, and environmental aspects of petroleum agreements and applicable laws.

Petroleum agreements are usually very high-value contracts that create strong incentives on both sides—contractors will seek to maximize the value of a contract for their shareholders, while governments have a responsibility to their citizens to ensure that the government's rights under the contract are being enforced.

Some types of petroleum agreements, as discussed in more detail below, are easier to administrate than others. Countries with developing petroleum sectors often have scarce contract compliance and administrative resources. Thus, the easier a fiscal regime is to administrate and audit, the easier it is to ensure that contractors are operating within the rules of the agreement.

3.3 Common Types of Petroleum Agreements

Petroleum agreements determine the manner in which a country's petroleum resources will be developed—and how the revenues from the development of those resources will be allocated as between the investor and the government. The three most common types of petroleum agreements are

(i) tax and royalty;

(ii) production sharing; and

(iii) service contracts,

though only the first two of these are widely used. A brief overview of the benefits and drawbacks of these approaches is provided below.

3.3.1 Tax and Royalty

Under this approach, contractors pay royalties to the government in the form of a payment per unit of production or, more commonly, a percentage of gross revenues, and taxes on the remaining income of the contractor. The primary advantages of a tax and royalty approach are (i) it applies universally, eliminating the need to negotiate profit splits on a case-by-case basis, (ii) it ensures early and dependable revenues to government, and (iii) it is a relatively easy regime to administer.

Although a number of jurisdictions apply a tax and royalty scheme in the petroleum sector (e.g., the UK, Norway, Brazil), this structure is more commonly used in the mining sector, primarily due to its significant drawbacks: first, royalties on gross revenues constitute an addition to the contractor's costs, and may cause the contractor to not develop certain fields that might otherwise be viable, or to prematurely abandon production at a given field if costs rise and profits fall in that field. Second, royalties do not factor in costs, and are thus regressive. This may result in a politically problematic situation in relation to highly profitable fields, where the contractor may be viewed as obtaining windfall profits from the development. This situation frequently requires the implementation of an "additional profits tax" to attempt to capture such windfall profits, which makes the overall regime more complex—indeed, each of UK, Norway, and Brazil pairs its tax and royalty system with some form of additional profits or windfall profits tax.

Furthermore, significant royalties are a deterrent to contractors, as in many jurisdiction they are not creditable for foreign tax credit purposes. The United States' Internal Revenue Code, for example, allows U.S. entities to claim a credit for income taxes paid to foreign governments on income earned outside the U.S., but does not permit such a credit for royalty payments.

3.3.2 Service Contracts

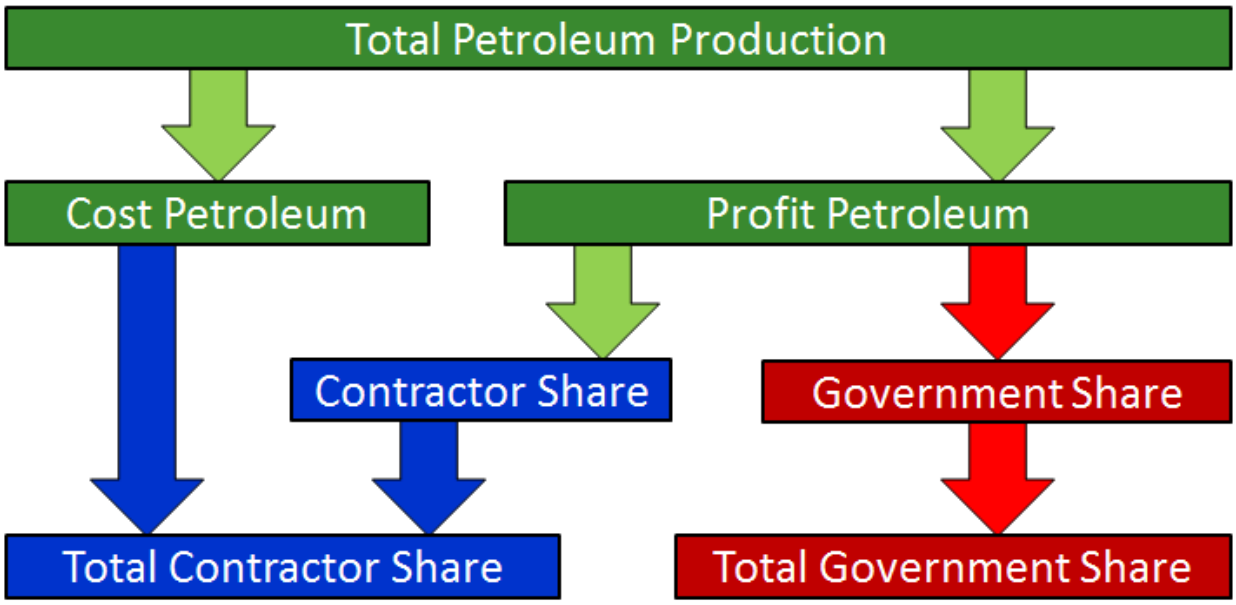
This approach involves the government paying contractors an agreed fee for the service of extracting petroleum, and is generally employed where a state oil company has full control of petroleum rights and production. The fee may be a fixed amount of money (i.e., a pure service contract in which the contractor does not assume exploration risk), or a fixed return on investment (i.e., a risk service contract, in which the contractor assumes some measure of exploration risk). In certain circumstances, particularly in countries with extremely low technical risk, service contracts may result in high returns to the government. On the other hand, the project risk falls primarily on the government (especially in the case of pure service contracts), and service contracts may offer insufficient performance incentives to adequately promote efficient resource extraction.

Service contracts also severely limit the potential return to investors (again, especially pure service contracts), and thus are not attractive in cases where there is reasonable uncertainty as to the size of available reserves and any substantial amount of geological risk.

3.3.3 Production Sharing

Production sharing mechanisms are widely used in the petroleum sector. Countries using PSCs include, among many others, Algeria, Brazil, Cameroon, Chad, Colombia, Democratic Republic of Congo, Libya, Kurdistan, Malaysia, Nigeria, Qatar, and Trinidad & Tobago. Under a production sharing approach, contractors (rather than the government as in a service contract) bear the risk of exploration. Once production begins, the contractor retains a certain percentage of the revenues as cost hydrocarbons until its capital expenditures are recovered, and the remaining profit hydrocarbons are shared between the contractor and government.

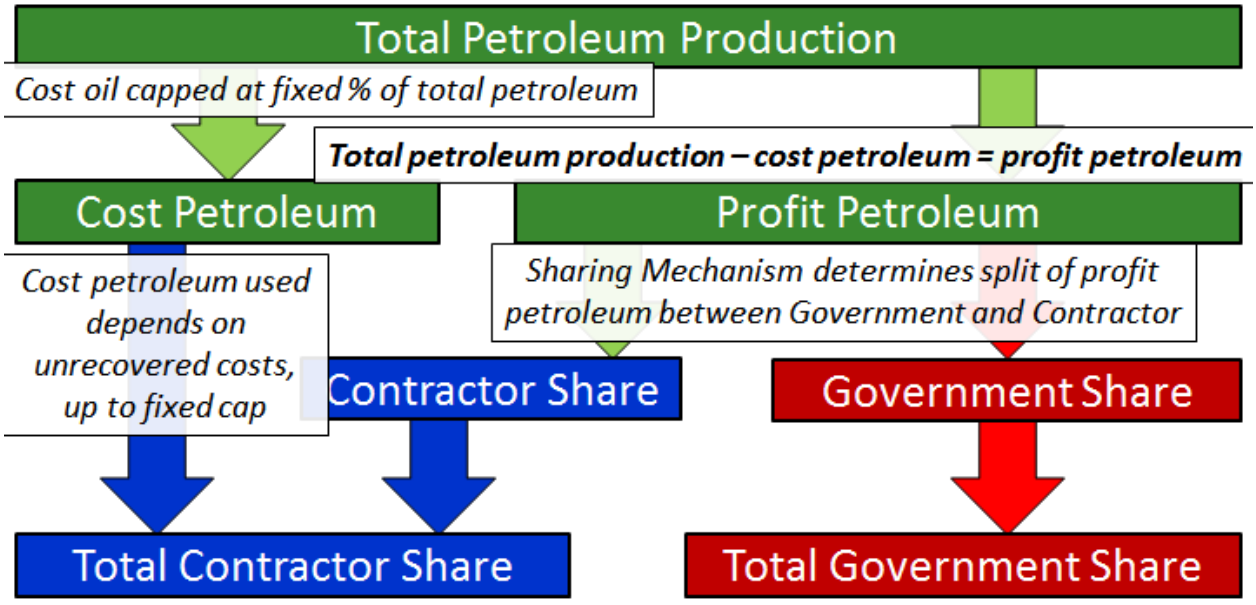
Figure 3.1: Flow of Revenues under a PSC—Overview



There are a number of forms of production sharing, but most have the common advantage of being progressive—the government's share increases as profitability increases—and thus would generally be more attractive to investors than a tax and royalty or service contract approach. Furthermore, provided that the cost oil percentage is less than 100%, the production sharing approach provides one of the advantages of a royalty approach—early cash flows to the government upon the commencement of production. Indeed, such a cost oil limit in effect functions to a degree as a royalty flowing to the government. The primary drawback to production sharing is that, in

certain forms, they can be difficult to administer—although some PSC mechanisms can be fairly easy to administer.

Figure 3.2: Flow of Revenues under a PSC—Detailed



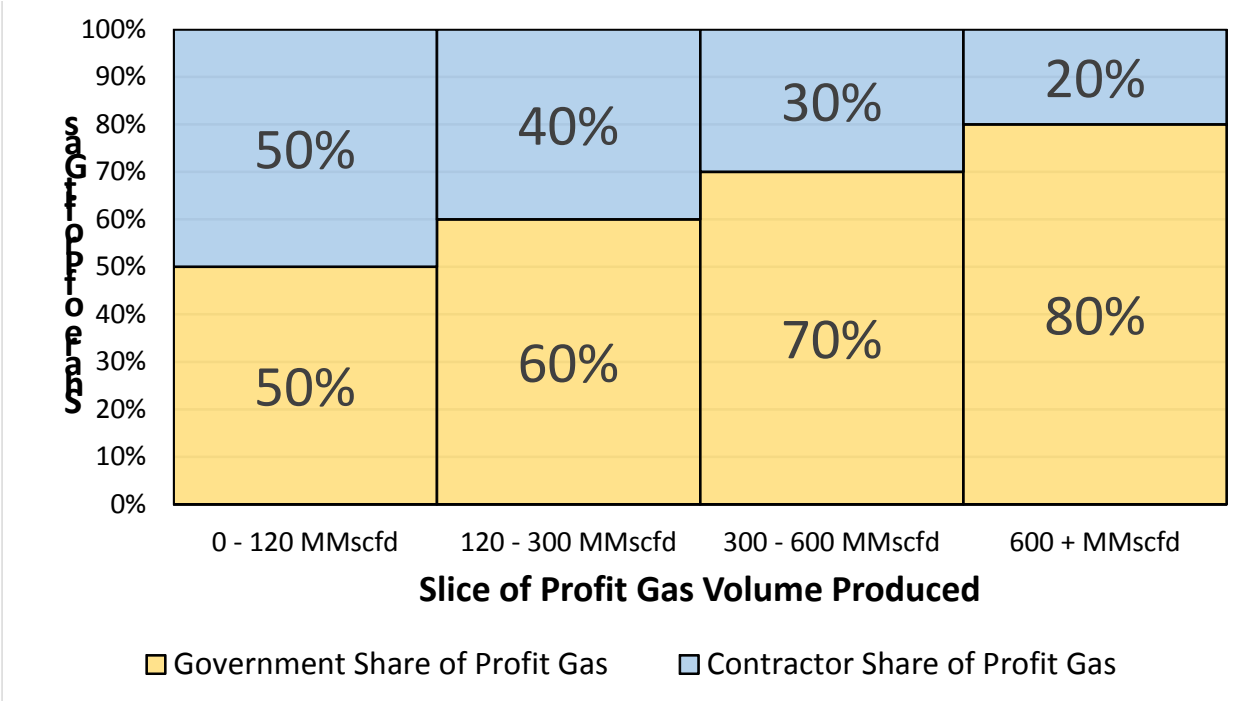
3.4 Production Sharing Mechanisms

Within the most common type of petroleum agreement—the production sharing contract—there are a number of mechanisms for determining how the revenues from petroleum production are shared between government and contractors. These mechanisms include daily rate of production, or ("**DROP**"), cumulative production, rate of return or ("**ROR**"), and the "**R-Factor**."

3.4.1 Daily Rate of Production

Under a DROP approach, government's share of profit petroleum increases as the daily rate of production from a contract area increases. This approach does not directly take into account either the price of petroleum or the costs of production from a given contract area, and thus acts to curb progressivity. Some countries use a variation on this approach to determine the respective contractor and government shares based on the rate of production of profit oil, and not total volume. This sub-genre, employed in Egypt and Kenya, is somewhat more progressive than the standard DROP mechanism based on total volume. Some form of the DROP mechanism is also used in Tanzania, Uganda, Equatorial Guinea, and Ethiopia.

Figure 3.3: Volume-Based Sharing Illustration



3.4.2 Cumulative Production

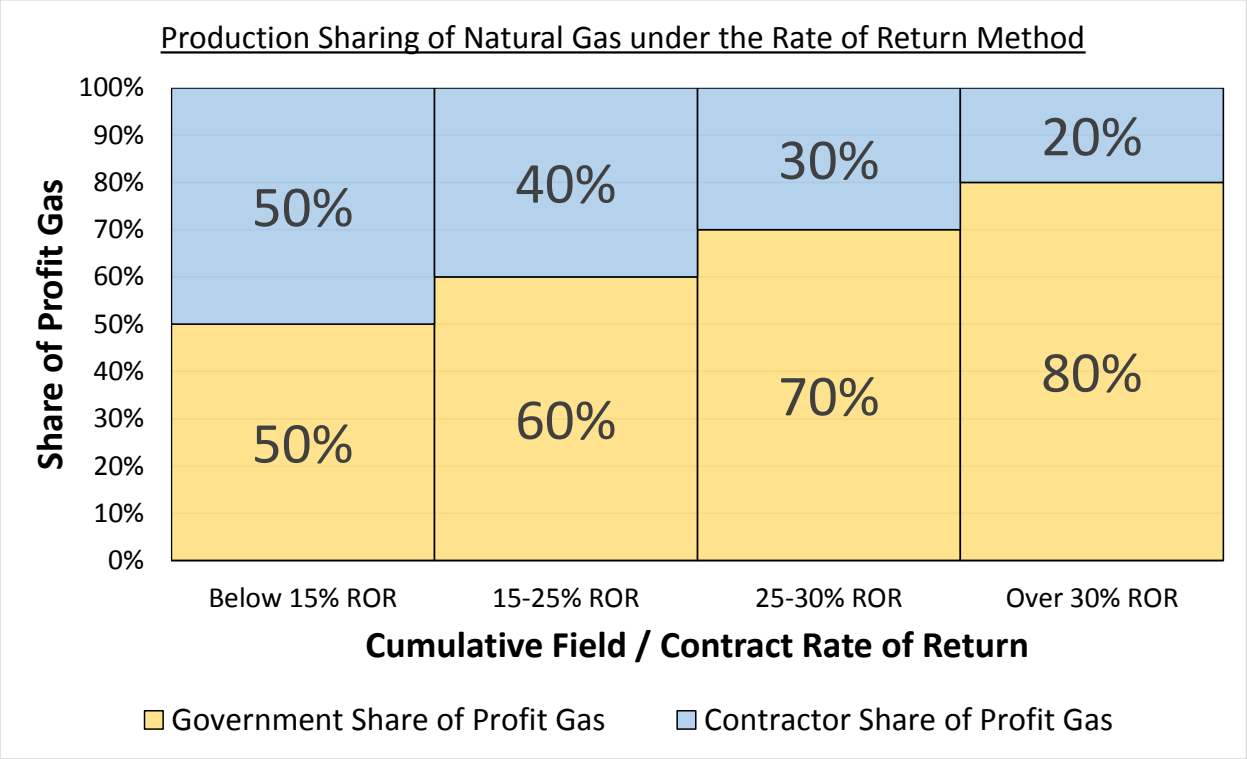
Another potential approach is the "cumulative production" approach, whereby government's share of profit petroleum increases as the total cumulative production increases. As with the DROP approach, cumulative production attempts to serve as a proxy for profitability, but again does not account for commodity price or production costs.

There are, however, two further approaches that more accurately track profitability, and thus produce progressive results.

3.4.3 Rate of Return

The first of these is "rate of return" or "ROR" based sharing, which is essentially a resource rent tax. This approach calculates the contractor's rate of return using discounted cash flows, and the government's share increases as the contractor's rate of return increases. Angola, Russia, Uzbekistan, and Tanzania (for its Additional Profits Tax) are among the countries that use the ROR method.

Figure 3.4: Rate of Return Sharing Illustration



3.4.4 R-Factor

Similarly, the so-called "R-Factor" approach would determine government's share based on the ratio of the contractor's cumulative revenues to cumulative expenditures. As the ratio (and therefore the profitability of a contract area) increases, so does government's share.

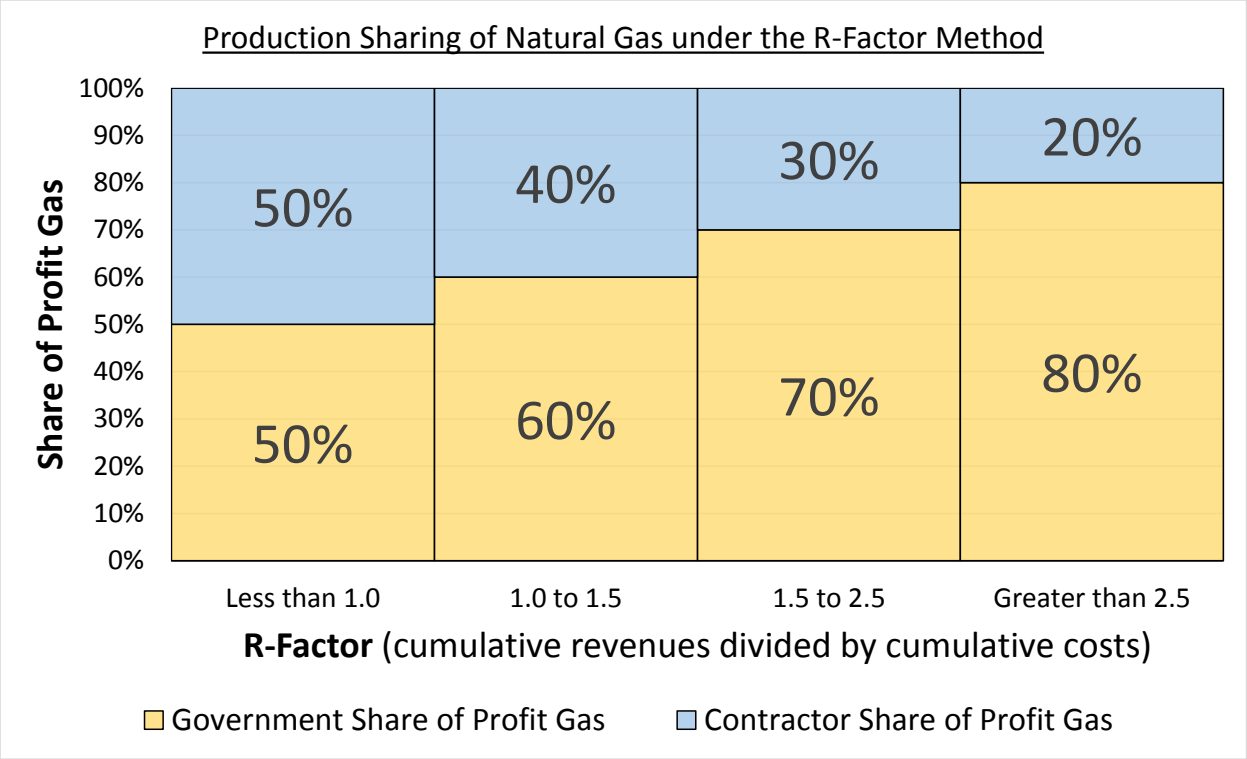
Thus, either an ROR approach or an R-Factor approach would be highly progressive, provided that appropriate parameters are selected. In addition to inherent progressivity, these regimes eliminate the need to establish different DROP tables applicable to oil and gas. Because these regimes are determined based on positive and negative cash flows (in the ROR case) or on revenues and costs (in the R-Factor case), the same regime can be applied to both oil and gas equally. Furthermore, either of these approaches would eliminate the need for an additional profits tax to address potential windfalls, as discussed above with respect to tax and royalty systems.

As between ROR and R-Factor, ROR has the advantage of taking into account the time value of money, whereas an R-Factor approach is conceptually more simple and is less sensitive to the timing of cash flows or issues such as "gold plating" of costs[4]—in either

[4] The ROR method takes into account the time value of money, which means the ROR calculation is more sensitive to the timing and size of initial investments relative to first production. The timing of pre-production expenditure has no impact on the calculation of the R-Factor production shares.

case, however, strong contract compliance is important. The R-Factor does not require a rate of return to be explicitly factored into the terms, which reduces the risk of setting parameters that are unacceptable to investors or that could complicate licensing negotiations.

Figure 3.5: R-Factor Sharing Illustration



4 Summary and Conclusions

As highlighted by the discussion above, there are a few key considerations for properly structuring both the legislative framework that will govern a country's petroleum sector and the petroleum agreements and fiscal regime that will establish the parameters for particular investments. Each of these goals is an essential component in attracting foreign petroleum investment funds while at the same time ensuring that the host country maximizes its return on its natural resources.

Well-structured petroleum legal and regulatory frameworks feature a number of key components. First, a constitution that addresses fundamental concerns such as revenue allocation and ownership of petroleum resources, which are of critical importance in federal systems. Reaching agreement upon these bedrock principles and enshrining them in a constitution helps to establish a common understanding among stakeholders and to reduce the potential for disagreements and conflicts, both with foreign investors and within the country itself.

Second, petroleum laws and petroleum regulations work together to (i) broadly sketch the rules of participation in the sector, and (ii) provide a flexible means for filling in the details, many of which will need to evolve over time as the sector matures.

Finally, model petroleum agreements set out standardized terms applicable to all contractors, which eases the administrative burdens on the entity(ies) responsible for contract compliance, which in turn helps to ensure that the country and its citizens receive the contractual benefits from the petroleum resources to which they are entitled.

In short, effective petroleum legal and regulatory frameworks can be characterized by a few fundamental constitutional principles, a broad, flexible petroleum law with enabling regulations, and a model petroleum agreement establishing standardized terms for petroleum sector contractors, which collectively provide clarity to potential investors on all of the important issues relevant to sector participation.

In terms of engaging contractors to develop petroleum resources, establishing an appropriate fiscal regime is essential in striking the proper balance between attracting investment and getting the best deal for the host country. Selecting the appropriate type of petroleum agreement based on the host country's particular circumstances is a key aspect of implementing the country's fiscal regime. Production sharing contracts are the most common form of petroleum agreement, especially in countries with developing petroleum sectors, as they allow for progressive revenue sharing and relatively simple administration. Within production sharing contracts, there are a number of sharing mechanism options, with ROR and R-Factor offering the highest degree of progressivity.

Appendix A
Acronyms and Glossary of Terms

The following terms have the meanings set forth below when used in this report.

"**DROP**" means daily rate of production.

"**EITI**" means Extractive Industries Transparency Initiative.

"**FGS**" means Federal Government of Somalia.

"**INP**" means National Petroleum Institute.

"**ORSA**" means oil revenue stabilization account.

"**LNG**" means liquefied natural gas.

"**PPP**" mean public-private partnership.

"**PSC**" means production sharing contract.

"**R-Factor**" has the meaning given in Section 3.4.

"**ROR**" means rate of return.

"**SWF**" means sovereign wealth fund.

Appendix B
About the Consultants

Hunton & Williams is a full-service international law firm of nearly 800 lawyers. The firm's 19 offices in the United States, Europe and Asia serve clients around the world. We provide our clients with broad industry knowledge and experience covering nearly every discipline of the law. Upon its founding in 1901, Hunton & Williams declared it our mission to provide clients with a full-service law firm that competed with the best in the nation. Since then, our scope has widened, but our commitment to providing clients with superior legal services across an expansive range of practice areas and industries has remained. Of the nearly 800 lawyers, Hunton & Williams has more than 150 in 19 offices around the world who are dedicated full time to advising clients on a broad range of energy and infrastructure matters, including engineering, procurement and construction, project development and acquisition financing, regulatory and environmental issues, corporate transactions and financial restructuring.

Lawyers with Hunton & Williams have received *The Chambers Global Guide's* highest ranking for advising on Projects & Energy Law and General Business Law on the African continent, among other awards. Global Energy and Infrastructure lawyers, from both U.S. and U.K. legal traditions, focus full time on matters in this area with the full support of the firm's worldwide resources. Clients include underwriters and private equity funds, unregulated power companies, regulated electric and gas utilities, multinational banks and institutional lenders, coal and transportation companies, regional transmission organizations, independent system operators, power marketers, and independent electric transmission companies, as well as federal, state, and local governments on every continent. Projects range from major coal- and gas-fired power plants, gas storage and LNG facilities, traditional oil and gas pipelines and toll roads, and large desalination and wastewater treatment plants, to smaller renewable energy facilities using a wide variety of nonconventional fuels.

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