

more equitably spread around the world. Since nationalization, the full responsibility for trimming output to meet lower demand has been borne by OPEC, with only minor exceptions when other producing governments have agreed to make what were largely token cuts.

Bilateral arrangements based on improving markets, ensuring energy security, and guaranteeing investments and trade on a mutual, reciprocal, and non-discriminatory basis could also form the core of a future multilateral agreement. The benefits first captured by the United States and Saudi Arabia could be enlarged with similar bilateral agreements signed by the kingdom, other interested importing countries, Washington, and other exporters. Saudi Arabia could make deals with Japan, Korea, and the European Communities. Venezuela could strike its own accord with Washington, and so on.

Building new international institutional arrangements during the course of the 1990s will not be easy. But it is probably inevitable. The United States and Saudi Arabia appear to have lost a major opportunity to create a new order from above. And, the European Charter also might, in the end, turn out to be a winner, although at this stage that seems far from likely. But a new regime seems to be in the offing in any event. It will not likely require the dismantling of OPEC or the IEA. Equally important, it need not require a politically difficult dialogue between the two organizations, a broader United Nations forum, or another setting for grand discussions. Yet over time, it could supersede both, providing the foundation for a kind of General Agreement on Petroleum and Petroleum Products, much as the GATT emerged from bilateral trade agreements based on the extension of most-favored-nation treatment to a broad array of countries. Then the rule of law will truly have its day in this sector.

FROM CONCESSIONS TO SERVICE CONTRACTS*

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I. INTRODUCTION

The public and private arrangements under which oil production is authorized have gone through a variety of phases since the emergence of petroleum as an internationally traded commodity in the middle decades of the last century. Historically, rights in oil were granted by means of "concessions" which authorized a company to explore, develop, and market petroleum for a specified number of years. The earliest grants, such as those made by various sovereigns in the Middle East, often covered an entire country and lasted several decades. In exchange for an initial payment and a right to some fraction of the value of any oil produced, the country or its ruler transferred all managerial and decision-making rights over oil exploration and production to the company or consortium of companies that received the grant. Decisions over when, or even whether, to explore and drill for oil were left entirely to the company. Alternatively, a company might acquire what it deemed to be the equivalent of fee simple ownership in much of a country's oil reserves, as Standard Oil argued it had done in Mexico.

Such sweeping grants of power over what was often a country's single most valuable asset rarely endured unscathed for the originally stated duration. In an effort to regain control over their mineral resources, some countries, such as Mexico and Iran, resorted to a single dramatic act of expropriation; others turned to less drastic means of altering the

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original agreements. In Venezuela, for example, expropriation of oil company assets occurred as a relatively gradual process lasting several decades. In Saudi Arabia and several other Middle Eastern countries, the original concessions were modified by on-going renegotiations that resulted in significantly different arrangements. The formation and growing power of the Organization of Petroleum Exporting Countries (OPEC), which represented the interests of several similarly-situated countries, helped significantly to expedite the process.¹

These historical developments do not mean that concessions are no longer in use. Virtually all publicly and privately owned oil reserves in the United States and Canada are developed under oil and gas leases that are first cousins to traditional concessions. Other countries, especially Western European nations with significant North Sea reserves, use similar arrangements, although they usually refer to them as licenses. The duration of the modern concession is typically far shorter than that of the early concessions, and modern concessions impose development schemes upon the licensee. Other types of agreements provide for a significant degree of participation in decision making by the host government or its state-owned oil company. Alternatively, a country wishing to have its resources developed but lacking the capital or technical expertise to carry out the program itself and unwilling to grant extensive rights over its minerals to foreign corporations, may enter into a service contract with a foreign company. The company agrees to explore a specific area and, if productive, develop it in exchange for a payment based upon production. The foreign company bears the financial risk of the operation, but receives no property right in the host country's territory or its minerals.

This paper will examine the original types of arrangements used to authorize petroleum development and describe the basic format of the variety of arrangements that are in use today.

II. THE EARLY PETROLEUM ARRANGEMENTS

For most of this century, the oil industry has been characterized by the concentration of control in a relatively few companies or entities. In the earliest period, Standard Oil of New Jersey exerted near monopoly control on oil supply and price. Although "trust busting" legislation, such as the Sherman Act and the United States District Court decision in

1. A description of these developments can be found in DANIEL YERGIN, *THE PRIZE* (1991). See also ALBERT L. DANIELSEN, *THE EVOLUTION OF OPEC* (1982).

United States v. Standard Oil Co. of New Jersey,² led to the eventual break-up of Standard Oil, control over the market merely shifted to a group of large, vertically integrated oil companies known collectively as the "Seven Sisters" or simply "the Majors."³

A. The "Classic" Concession

During this early period the typical international arrangement for authorizing petroleum development was the concession. Several characteristics of these early arrangements are especially noteworthy. For example, many of the Middle Eastern concessions were apparently granted directly by the ruler of the sheikdom or sultanate or by a minister acting directly on his behalf. In many instances, the process seems to have been analogous to that engaged in by an American landowner negotiating with a company over an oil and gas lease. The recipients of the concessions were almost invariably consortia with partially overlapping membership. This interrelationship of the major oil companies in almost all of the concessions resulted in joint offtake agreements which limited the total amount of production from the major concessions.⁴ Because these agreements essentially limited each company to a set amount of oil which it could market, the incentive to drill new wells into an established and proven reservoir might be relatively slight. Nothing in the early concessions or the oil companies' agreements with the sovereigns prohibited such conduct.

The scope of rights granted was enormous. Geographically, concessions usually covered immense areas. For example, the concession which William D'Arcy obtained from the Shah of Persia in 1901 covered 500,000 square miles;⁵ concessions granted by the rulers of Abu Dhabi⁶

2. 253 F. Supp. 196 (1966).

3. The names, and to a lesser extent the identities, of these companies have changed over time. In the 1950s when the designation "Seven Sisters" came into wide use, the companies were Humble (now Exxon), Texaco, Mobil, British Petroleum, Royal Dutch Shell, and Socal (formerly Standard Oil of California and later Chevron).

4. See Note, *Fram Concession to Participation: Restructuring the Middle East Oil Industry*, 48 N.Y.U. L. REV. 774, 779-80 (1973).

5. ROBERT O. ANDERSON, *FUNDAMENTALS OF THE PETROLEUM INDUSTRY* 40 (1984). The company formed to exploit D'Arcy's concession was the forerunner of British Petroleum. In 1933, negotiations between the country and the Anglo-Persian Oil Company reduced the area covered by the concession to 10,000 square miles and extended its term to 1933. See Note, *supra* note 4, at 776 n.5.

6. Atef Suleiman, *The Oil Experience of the Middle East Emirates*, 6 J. ENERGY & NAT. RESOURCES L. 1, 3 (1988).

and Kuwait⁷ covered their entire countries. The government of Mexico gave S. Pearson & Son, predecessor of the British controlled Mexican Eagle Oil Company, a concession embracing almost all federally owned lands along the Gulf of Mexico.⁸

The grants were similarly sweeping in terms of the operational rights transferred to the companies. The companies were free to drill or not to drill on any of the lands granted. Production of any oil discovered was left to the option of the grantee which was under no obligation to release unexplored and undeveloped territory.⁹ The host countries retained no right to participate in managerial decisions,¹⁰ including decisions on drilling and development, even though the only financial benefit received by the countries or their rulers after the initial consideration had been paid was the right to royalty.

As indicated earlier, the concessions were intended to last a long time. Generally they were for fixed time periods that were rarely less than sixty years. The 1933 concession that the King of Saudi Arabia granted to Standard Oil of California for 50,000 pounds of gold was for a sixty-six year term and ultimately covered as much territory as the D'Arcy grant.¹¹ The Abu Dhabi¹² and Kuwaiti¹³ concessions were both for seventy-five years. There were always some exceptions, of course. The concessions granted in the period following the 1911 Mexican revolution were for a period that could not exceed thirty years and contained cancellation clauses in the event the company failed to comply with its obligations.¹⁴

Perhaps most striking, especially when viewed from the vantage point of the last decade of the twentieth century, the "government take" under the old concessions was extremely small. The host country, or ruler, usually received an initial consideration, roughly analogous to the

7. See KEITH W. BLINN ET AL., INTERNATIONAL PETROLEUM EXPLORATION & EXPLOITATION AGREEMENTS, LEGAL, ECONOMIC, AND POLICY ASPECTS 56 (1986).

8. For discussions of oil company rights in Mexico, see GEORGE D. PHILIP, OIL AND POLITICS IN LATIN AMERICA (1982) and J. SILVA HERZOG FLORES, HISTORIA DE LAS EMPRESAS PETROLERAS 18-32 (1964).

9. Note, *supra* note 4, at 776-77.

10. Suleiman, *supra* note 6, at 3.

11. See GOVERNMENT OF SAUDI ARABIA, DEVELOPMENT OF RESOURCES DOCUMENT (1972) (on file with the *Texas International Law Journal*).

12. Suleiman, *supra* note 6, at 3.

13. See BLINN ET AL., *supra* note 7, at 56.

14. See ROSCOE B. GAITHER, EXPROPRIATION IN MEXICO: THE FACTS AND THE LAW 4 (1949).

modern oil lease bonus, and some form of royalty. Under some concessions, the royalty was a specified fraction of production. The original D'Arcy concession in Persia provided for a sixteen percent royalty.¹⁵ Few others were that generous to the host country. The concessions that the Mexican government granted over its own publicly-owned territory prior to the Revolution generally set the royalty at ten percent.¹⁶ Other arrangements provided for a royalty calculated as a flat rate per ton rather than as a percentage of production or the value of the sale price of production. Thus, both the Ruler of Abu Dhabi and the Sultan of Muscat and Oman received three rupees per ton of oil produced from their respective concessions.¹⁷ The Arabian concession set the royalty at twenty-one gold shillings per ton.¹⁸

Today, when even the least sophisticated United States landowner is likely to end up with a royalty no smaller than 16.667% (1/6th) of the gross production, the minimal nature of government "take" under the old concessions is startling. It is made even more so when other aspects of the concessions are considered. The 1901 Mexican petroleum law which authorized granting concessions on public land gave the companies liberal tax exemptions, the right to import machinery, equipment and material duty-free, and other special privileges including the right to "expropriate" land necessary for their oil operations.¹⁹ Some of the Middle East concessions freed the companies from all tax obligations that were not specifically set out in the agreement.²⁰

Perhaps the following comment provides the best perspective on the concession system, especially as it existed in the Middle East:

It must be recalled that in those days, concessions were granted by Sovereigns with sometimes little authority, often under foreign political dominance. Also, the countries concerned were backward, sometimes nomadic, and in no case possessed a legal framework liable to govern such things as petroleum operations. Therefore, in order to fill that void, concessions were not only tilted in favor of [multi-national

15. See ANDERSON, *supra* note 5, at 40.

16. FLORES, *supra* note 8, at 27. The Mexican royalty was apparently computed on a net profits rather than a gross production basis and was divided between the federal government which received seven percent and the government of the producing state. The state, commonly Veracruz, received the remaining three percent. *Id.* at 32.

17. Suleiman, *supra* note 6, at 2; BLINN ET AL., *supra* note 7, at 57. This has been estimated to equal approximately eight cents per barrel. *Id.*

18. See IRVINE H. ANDERSON, ARAMCO, THE UNITED STATES, AND SAUDI ARABIA 25 (1981).

19. For a description of these special rights, see FLORES, *supra* note 8, at 26.

20. RAYMOND F. MIKESSELL, PETROLEUM COMPANY OPERATIONS AND AGREEMENTS IN THE DEVELOPING COUNTRIES 20-21 (1984).

corporations] but also written in such a way that they constituted self-sufficient charters for those areas of the world where [there] existed no infrastructure of any kind, nor any government control or capabilities of any sort. Hence, it is hardly surprising that the word "concession" became mentally associated with "underdevelopment" and "political dominance;" this explains from a psychological standpoint, the hostility shown toward this type of agreements [sic].²¹

B. Other Development Arrangements

Although the concession was the typical form used to authorize oil development, other types of arrangements were also in use. In many instances, deviation from the concession format was the result of differences in legal regimes. By the turn of the century, the concept that ownership of subsurface minerals, including petroleum, inhered in the sovereign was widespread, but it had not reached the degree of near universal acceptance afforded it today. Hence, in many parts of the world, private ownership of petroleum in place was still possible, and the concession, which had been developed as an agreement between a sovereign and an oil company, was often not appropriate for an agreement between purely private parties. Therefore, where private ownership was possible, the arrangement used was likely to be either the oil and gas lease, which is a variant of the traditional concession,²² or the outright sale of underground minerals, which was the basis for extensive oil company claims in Mexico.²³

21. BLINN ET AL., *supra* note 7, at 60-61 (citing 4 AHMED S. EL-KOSHERI, LE RÉGIME JURIDIQUE CRÉÉ PAR LES ACCORDS DE PARTICIPATION PÉTROLIÈRE DANS LE PÉTROLIER, RECUEIL DES COURS DE L'ACADÉMIE DE LA HAYE (1975)).

22. In many ways the early concessions and early oil and gas leases were strikingly similar. This was especially true with respect to the scope of rights granted and the size of land-owner's "take." It often held true for duration. Fixed term leases, varying in length from 50 to 99 years, were common in the late nineteenth and early twentieth centuries. See *Gulf Oil Corp. v. Southland Royalty Co.*, 496 S.W.2d 547 (Tex. 1973) (regarding a lease executed in 1925 which contained a maximum term of 50 years); James A. Veasey, *The Law of Oil and Gas* (pt. 2), 18 MICH. L. REV. 652, 653-56 (1920). These leases were not used exclusively, however. Other common lease forms included the "no term" lease and variants of today's "unless" and "or" lease. The "no term" lease permitted the lessee to maintain the lease in effect indefinitely by the payment of an annual rental. For an example of a "no term" lease, see the instrument described in *Consumer's Gas Trust v. Littler*, 70 N.E. 363 (Ind. 1904).

23. See Ernest E. Smith & John S. Dzienkowski, *A Fifty-Year Perspective on World Petroleum Arrangements*, 24 TEX. INT'L L.J. 13, 23-30 (1989) (discussing the legal basis for oil company claims to ownership of oil "in place" in Mexico and an account of the dispute between the companies and government that resulted in expropriation of oil company assets).

III. CURRENT ARRANGEMENTS FOR AUTHORIZING OIL PRODUCTION

The process by which the early arrangements were modified or terminated have been described in detail elsewhere.²⁴ For our purposes it is sufficient to point out that the two principal methods used by sovereigns to accomplish these ends were expropriation and renegotiation. These methods are not, of course, exclusive. A request to renegotiate a concession usually carries with it some express or implied political threat; and, as the Aminoil controversy illustrates,²⁵ failed renegotiations may lead to expropriation. Conversely, expropriation need not come swiftly. In Venezuela, for example, nationalization occurred gradually over a period spanning three and a half decades.²⁶ Typically, however, there have been significant differences in how these two methods of changing petroleum arrangements have been carried out and in what changes they have accomplished.²⁷

Today, of course, few countries are willing to transfer to oil companies the virtually unfettered control over petroleum reserves which was found in early arrangements. One reason is the recognition of the importance of petroleum to a country's economy. Countries, such as Saudi Arabia, the United Arab Emirates—or even Norway—may correctly view oil as their most valuable export; others, such as the United Kingdom or Brazil, may view domestic production as an important element in

24. See, e.g. DANIELSEN, *supra* note 1; HENRY G. CATTAN, THE EVOLUTION OF OIL CONCESSIONS IN THE MIDDLE EAST AND NORTH AFRICA 4-26 (1967); WENDELL C. GORDON, EXPROPRIATION OF FOREIGN-OWNED PROPERTY IN MEXICO (1941); MIKESSELL, *supra* note 20; YERGIN, *supra* note 1; Smith & Dzienkowski, *supra* note 23, at 24; Note, *supra* note 4.

25. See Fernando R. Tesón, *State Contracts and Oil Expropriations: The Aminoil-Kuwait Arbitration*, 24 VA. J. INT'L L. 323 (1984).

26. Beginning in 1938 the Venezuelan government started imposing more onerous terms in its concessions and then increased taxes on oil company income. By 1948, the government was insisting on a 50% share of oil company profits from Venezuelan operations. The government further weakened the position of Exxon, Shell, and other majors, which had theretofore received all Venezuelan concessions, by encouraging independent oil companies to participate in new concessions. In 1960, the government took several additional steps that strengthened its hand against the oil companies. It formed a state oil company, announced that no new concessions would be granted, and joined the Persian Gulf countries to organize OPEC. Over the next decade, Venezuela transferred its retail market in oil to its state oil company, raised taxes on the oil companies once again, and nationalized the gas industry and the iron ore industry. Formal nationalization of the oil industry, which occurred in 1975, had been long expected and came as no surprise to the companies. See, Ewell E. Murphy, Jr., *Latin American Oil and Gas Law: Outline and Methodology*, 1983 INST. ON INT'L OIL & GAS L. Paper B.

For discussions on the concept of "creeping expropriation," see Burns H. Weston, "Constructive Takings" Under International Law: A Modest Foray into the Problem of "Creeping Expropriation," 16 VA. J. INT'L L. 103 (1975); Note, *Unilateral Action by Oil-Producing Countries: Possible Contractual Remedies of Foreign Petroleum Companies*, 9 FORDHAM INT'L L.J. 63 (1985-86).

27. See Smith & Dzienkowski, *supra* note 23, at 26-46.

achieving or maintaining a degree of energy self-sufficiency which is essential to the welfare of an industrialized or industrializing economy. In either event, the country will insist upon retaining some degree of control over development of reserves.

A second and even more compelling reason why many countries refuse to grant traditional concessions—or, indeed, even to call development arrangements concessions—is closely connected with concepts of national sovereignty. The United Nations Resolution on Permanent Sovereignty over Natural Resources,²⁸ the Declaration on the Establishment of a New International Economic Order,²⁹ and the Charter of Economic Rights and Duties of States³⁰ reflect a view widely held throughout the Third World that sovereignty is compromised if control over domestic oil reserves and other minerals is placed in the hands of foreign corporations.

There are different methods of exercising control. It may be done directly through a governmental agency that attempts to develop reserves itself or indirectly through the means of authorizing development. Thus, a concession or license may impose a work program upon the foreign corporation granted the concession and require a specified amount of drilling within a specified time. Alternatively, control may be exerted through a state oil company which either holds the concession or is a required participant in it. As always, there are exceptions. The typical U.S. oil and gas lease retains the same basic format which it acquired in the 1930s. Private landowners as well as federal and state governments use this type of lease to authorize exploration and development of their extensive holdings. This type of lease, however, does not place an emphasis on the right to control production, development, and pricing which has characterized the development of international petroleum arrangements.³¹

This section offers a brief survey of the principal forms of arrangements for developing petroleum currently in use around the world.³² It

28. G.A. Res. 1803, U.N. GAOR, 17th Sess., Supp. No. 17, at 15, U.N. Doc. A/5217 (1962); G.A. Res. 3171, U.N. GAOR, 28th Sess., Supp. No. 30, at 52, U.N. Doc. A/9400 (1973), reprinted in 2 INT'L LEGAL MAT. 223 (1963).

29. G.A. Res. 3201, U.N. GAOR, 6th Special Sess., Supp. No. 1, at 3, U.N. Doc. A/9559 (1974), reprinted in 13 INT'L LEGAL MAT. 715 (1974).

30. G.A. Res. 3281, U.N. GAOR, 29th Sess., Supp. No. 31, at 50, U.N. Doc. A/9631 (1974), reprinted in 14 INT'L LEGAL MAT. 251 (1975).

31. See generally David E. Pierce, *Rethinking the Oil and Gas Lease*, 22 TULSA L.J. 445 (1987).

32. See generally HINNEN ET AL., *supra* note 7 (describing a more comprehensive treatment of international petroleum arrangements).

focuses on the structure of the arrangement, including the parties, the process for entering into the arrangement, the duration, the scope of rights granted, and the methods of stating and determining the size of government takes.

A. *The Modern Concession, License, and Oil and Gas Lease*

The modern concession differs in important details from its 1930s prototype. Even the name may be different. The term "concession" implies that rights have been "conceded" or given away. Additionally, the traditional notion of multi-national corporations trampling on the rights and interests of native populations has come into some disfavor in the modern world. Hence, a modern concession is likely to be labeled a "license," and the terms will hereafter be used interchangeably. At a more basic level, however, the fundamental concept remains unchanged. Thus, a company or consortium of companies has been authorized to develop a country's petroleum reserves and allowed considerable discretion over the details of that development.

To appreciate both the retention of the basic structure and the changes in the details of the structuring, it might be helpful to examine the modern concession in light of the elements which characterized the classic concession. These elements include the parties to the agreement, the method of awarding the concession, the scope of rights granted, the duration of the agreement, and the government take.³³

1. Parties

The fundamental identity of the "grantor" remains the same. It is the sovereign of the country. Today, however, the head of government is not likely to deal directly with the company obtaining the license. In virtually all countries, power has been delegated to an agency or ministry. In Ghana, for example, it is the Secretary for Fuel and Power, and not the President, who is authorized to negotiate for and enter into petroleum arrangements.³⁴

The point made is not solely pedantic. If a company is not dealing with the correct government ministry, it will be wasting its time. Even more importantly, if it does not receive requisite approvals from all relevant agencies, it may not receive a concession recognized as binding by

33. The term "government take" reflects the oil company's view of the division of benefits; however, in the host country's perspective, the issue is the size of the "oil company take."

34. See Ghana Petroleum (Exploration and Production) Law (1984).

expenses). The ultimate size of the state company's share is determined by a sliding scale based on the magnitude of production.³⁸

Requirements that a state oil company be a participant obviously limit the desirability of a concession in many areas. Nonetheless, if political risk is low or nonexistent, many companies are willing and able to join in a consortium receiving licenses with such strictures. For example, in Norway's twelfth licensing round, which occurred in 1988, participants ranged from relatively small independents to Conoco, Esso and Elf Aquitaine. In each of the sixteen blocks licensed, Statoil, the Norwegian state oil company, was a fifty percent participant.

2. Method of Awarding a Concession

Some countries still engage in direct negotiations with potential licensees when granting a concession. Although this system is frequently alleged to be subject to undue influence and corruption, such problems may be partially avoided through the use of a model agreement that contains the basic provisions of the arrangement and also expressly sets forth the negotiable issues in the agreement.

Direct negotiation seems especially appropriate in two specialized situations. The first is where a country wishes to make an immediate grant of a license to develop proven reserves. Countries such as the Russian Republic and Argentina, which are in the midst of extensive plans for privatizing petroleum development, might find this system preferable to an auction system because companies offering bids would have to accumulate such detailed information on past field performance and current field conditions that the auction might be delayed for some time. The second situation is where special technology is needed. It is quite possible that many of the older, depleting fields in the former Soviet Union and Venezuela can best be revived through enhanced recovery operations based on technology specially developed for the conditions in individual fields. Awards for licenses for such fields might better be accomplished through negotiations with companies willing and able to develop the needed technology than through an auction system based on the amount of "government take" offered.

The most common method of awarding concessions is probably competitive bidding or auctioning. All provisions of the agreement,

38. See, e.g., Anita Rønne & Michael Budtz, *The Legal Framework for Exploration for and Production of Oil and Natural Gas in Denmark*, 3 J. ENERGY & NAT. RESOURCES L. 153, 162-63 (1985).

domestic law. The latter possibility poses a special problem when dealing with new governments, such as those which are emerging after the break-up of the old Soviet Union, or with sovereigns whose organizational structure differs markedly from that of traditional western governments. As several companies dealing with Native American tribes in the United States have discovered, determining who is authorized to grant an oil or mining lease may be fully as important as negotiating the terms of the lease.

As in earlier years, the party granted the concession is an oil company or consortium, but its identity or composition may now be prescribed by law or regulation. In some states, only the country's state oil company can receive a concession.³⁵ In these countries, participation by foreign corporations in exploration and drilling, to the extent allowed,³⁶ must be through some other type of arrangement, such as the risk service contract discussed later. Most countries are not this restrictive, however, and permit grants of concessions or licenses to private corporations. A commonly encountered requirement is that the license be incorporated under the laws of the host country.³⁷ Thus, a multinational company will be required to function through a subsidiary created under local laws. Even more significantly, the state oil company may have mandated participation in the venture. In other words, it automatically receives a share of the concession. This may be a specified, unchanging percentage, or it may vary in accordance with how the work progresses. For example, under the Danish scheme the state company's share of the license is relatively small during the exploratory phase when it is not liable for costs, but the share can be increased if producible discoveries are made (and the company becomes obligated to pay its share of development

35. State-owned oil companies are more prevalent in the OPEC and lesser developed countries than elsewhere, but are also found in some Western nations. For example Statoil, the oil company owned by Norway, has played a major role in the development of North Sea oil fields. Although several state companies, such as the British National Oil Corporation, have now been privatized and others may soon follow, it appears certain that government companies will continue to be actively engaged in petroleum exploration and production in many parts of the world, especially the Middle East.

Richard Bentham and William Smith, *State Petroleum Corporations: Corporates Forms, Powers and Control* (1986).

36. In a few countries, all aspects of the industry are closed to all but the state company. In Mexico, for example, Pemex has a monopoly on all exploration, production, refining, storing, and marketing activities. See Reglamento de la Ley Reglamentaria del artículo 27 constitucional en el Ramo del Petróleo, arts. 31, 16, Nov. 29, 1958, D.O. Aug. 25, 1959, as amended.

37. See, e.g., Article 8 of Norway's Act pertaining to petroleum activities, Act of 22 March 1985, no. 11.

other than the term to be bid, are established in advance. Applicants may be required to meet certain minimum requirements of financial stability and past experience to participate in the bidding process, but the licenses on specific blocks are awarded solely on the basis of competitive sealed bids.³⁹ The bidding may be based upon any of a variety of factors. For example, the Outer Continental Shelf Lands Act,⁴⁰ which governs the leasing of U.S. offshore lands, provides that the Secretary of the Interior may offer a sale of leases on any one of the following basis for bidding purposes:

- (1) a cash bonus with a royalty of 12 1/2 percent or more;
- (2) a variable royalty with either a fixed work commitment or a fixed cash bonus;
- (3) a cash bonus bid or a work commitment bid with a fixed cash bonus, and a diminishing or sliding scale royalty, but not less than 12 1/2 percent at the beginning of the lease;
- (4) a fixed cash bonus with a net profit share reserved as the bid variable;
- (5) a cash bonus with a royalty at no less than 12 1/2 percent, and a fixed share of net profits at no less than 30 percent;
- (6) a work commitment bid with a fixed cash bonus and a fixed royalty; or
- (7) any other bidding system with variables, terms, and conditions that the Secretary of Energy determines to be useful to accomplish the purposes and policies of the Act, except that no such bidding system shall have more than one bid variable.⁴¹

A successful bidder under the U.S. offshore system receives a standard oil and gas lease as defined in the statute and the regulations.

An alternative to both the competitive bidding process and individualized negotiations is a "tender" or "discretionary licensing" system that allows the sovereign to take a variety of factors, other than the high bid, into account in making an award. Most North Sea countries use this system,⁴² and the United Kingdom's ninth round of licensing, which took place in 1985, provides a good example of the system's adaptability to specific goals. The Thatcher administration was interested in encouraging exploration in especially hostile deepwater areas, such as the

39. For a good example of this system, see TEX. NAT. RES. CODE ANN. §§ 34.001-34.185 (West Supp. 1992) (authorizing leases of land owned by the State of Texas).

40. 43 U.S.C. § 1801 (1988). See generally OWEN L. ANDERSON, FEDERAL OIL AND GAS LANDS MANAGEMENT IN THE UNITED STATES 139 (1986).

41. 43 U.S.C. § 1337(a)(1)(H) (1988). In most of the recent offerings by the Department of Interior, the bonus was the only variable for awarding the offshore lease.

42. See Peter Cameron, *North Sea Oil Licensing: Comparisons and Contrasts*, 3 OIL & GAS L. TAX'N REV. 99 (1984-85).

Faroes Trough. An announced basis for evaluating applications for development blocks in proven areas was the applicants' willingness "also to apply for, and explore, a block or blocks listed under frontier areas . . . particularly in depths of water exceeding 200 metres." Since the exploration and development of deepwater frontier areas would require large outlays of capital as well as special expertise, it was clear that the participation of smaller companies, including the relatively few British independents, would be limited. In an effort to improve British participation, an additional criterion for making awards was:

[T]he extent to which the applicant has involved, or plans to involve U.K. owned and controlled organizations in his exploration, development, and production activities on the U.K. Continental Shelf through the generation of new technology, the placement of research and development contracts and the provision of opportunities for the design, demonstration, and testing of products and techniques.⁴³

In some countries, the tender system raises the same concerns of undue influence that may be presented by the system of direct negotiation. Additionally, since licenses are not necessarily granted to the highest bidder, the system has been criticized as not providing the optimal financial benefits to the host country.⁴⁴ Whether these objections outweigh the benefits of choosing licenses on bases other than simple high bid depends upon the specific goals which the sovereign is seeking to attain.

3. Scope of Rights Granted

Measured by the early concessions, the scope of rights granted by modern licenses is quite limited. The most obvious difference is geographic. In most countries, licenses are issued for defined areas, commonly termed "blocks." The size of the block offered for a concession will vary considerably, depending upon the country, the type of license granted, and the type of area covered. In areas that are relatively unexplored and technically difficult to develop, the blocks may be quite large. Conversely, governmental interest in retaining some degree of control over mining and oil producing activities will dictate some restriction on the ultimate size of the block. In any event, the block should be large enough to make it reasonably likely that exploration and production will be profitable.

43. For a description of the licensing process in the United Kingdom, see DAINITH & WILLOUGHBY'S UNITED KINGDOM OIL AND GAS LAW (Terence Dainith & Adrian Hill eds., Supp. 1990) [hereinafter UNITED KINGDOM OIL & GAS LAW].

44. See KENNETH W. DAM, OIL RESOURCES: WHO GETS WHAT HOW? 33-34 (1976).

The rights granted are also restricted. First, many countries distinguish between two principal types of licenses: an investigatory or exploratory license and a production license.⁴⁵ A preliminary exploratory license may be granted which authorizes seismic, geologic, and geochemical surveys. Such licenses cover a specified area but are usually non-exclusive. Other companies may obtain licenses and conduct exploratory work in the same area. The licensee receives no right to produce and, under some codes, no assurance that it will have any priority in obtaining a production license over the area explored. Americans will be familiar with such licenses since landowner-authorized seismic surveys are based on an almost identical concept.

Second, the production license or concession that authorizes drilling and actual production typically imposes stringent requirements upon exploration and drilling activities. Occasionally, they contain rather sweeping language. Thus, the 1980 Abu Dhabi concession grants "the exclusive rights to explore, search, and drill for, produce, store, transport, and sell petroleum" within the designated concession area.⁴⁶ The grant of unfettered discretion is more apparent than real. Unlike the earlier agreements, the modern concession specifically contains clauses imposing a scheme of development based upon a monetary commitment for each year of the term.⁴⁷ A company holding the concession is obligated to a work program as well as a requirement to relinquish a portion of the acreage on a specific schedule.⁴⁸

This development has a partial parallel in some modern oil and gas leases which have incorporated provisions imposing development obligations upon the lessee. Such provisions which are often added to printed form leases by the lessor are of two basic types. The retained acreage clause provides that a well will maintain the lease only as to a specified

45. Røenne & Budtz, *supra* note 38, at 156-57 (containing a brief explanation of the difference between these two types of licenses under the Danish petroleum law regime). However, in terms of general concepts, the description of the two types of licenses can apply equally well to the petroleum regimes of countries as diverse as the United Kingdom and Turkey.

46. See Abu Dhabi Concession, art. 2 (1980). The concession can be found in DETLEV VAGTS, *TRANSNATIONAL BUSINESS PROBLEMS* 448-65 (1986).

47. In the original concessions, the company was obligated to "conduct its operations in a workmanlike manner and by appropriate scientific methods." Agreement Between Petroleum Concessions, Ltd. and Sultan of Muscat and Aman, art. 9 (1937). The new concessions contain clauses that require a contribution of a certain dollar amount during specific periods. See, e.g., Abu Dhabi Concession, art. 6. A failure to pay such amounts can result in forfeiture of the concession. *Id.* art. 36.

48. See, e.g., Abu Dhabi Concession, art. 12 (relinquishment terms of 25% within three years and another 25% within eight years).

number of acres.⁴⁹ The continuous drilling clause is a more complex provision that commits the lessee to a drilling program and terminates the lease as to undrilled acreage if a specified time period elapses without any drilling being done.⁵⁰ The use of both types of clauses in oil and gas leases is far from universal and their scope is relatively limited compared with the work programs imposed upon oil companies under modern concessions. Moreover, they rarely provide for an on-going reassessment of the originally specified plan of development.

By way of contrast, the "third term" introduced into the post-1988 U.K. licenses permits just such an evaluation. The license will expire at the end of eighteen years unless the licensee (1) has the approval of the Secretary to develop a field lying within the licensed area, or (2) has been given a development program by the Secretary, or (3) the Secretary exercises his sole discretion to continue the license. Suggested factors which might prompt an exercise of that discretion include active discussions by the licensee toward working out a further development program and active work on technology that would allow further field development within the reasonably near future.⁵¹

Finally, the licensee or concessionaire's discretion is further limited by the requirement that the host country's state oil company participate in the license. Although the state company is not likely to be the operator, it will be a party to the joint operating agreement covering the licensed area and will be able to participate in operational and developmental decisions.

4. Duration

The duration of the modern concession is usually in the thirty-five to forty year range, rather than the six or seven decades characteristic of the early concessions. For example, Article 3 of the 1980 Abu Dhabi concession provides for a thirty-five year term. The Turkish Petroleum Code, Article 65, specifies that a license is to be granted for twenty years

49. See, e.g., the retained acreage clause litigated in *Humphrey v. Seale*, 716 S.W.2d 620 (Tex. App.—Corpus Christi 1986, no writ).

50. See, e.g., the clause in *Modern Exploration, Inc. v. Maddison*, 708 S.W.2d 872 (Tex. App.—Corpus Christi 1986, no writ). For a discussion of these types of clauses, see Tervis Herd, *Continuous Development and Retained Acreage Clauses*, STATE B. TEX. NEWSLETTER, (Oil, Gas & Mineral Law Section) April 1986 and Ernest E. Smith, *Developments in Nonregulatory Oil and Gas Law*, 38 INST. ON OIL & GAS L. & TAX'N 1-1, 1-22 to 1-23 (1987).

51. See Letter From Department Of Energy To United Kingdom Offshore Operators Association, Ltd. (July 29, 1988), reprinted in UNITED KINGDOM OIL & GAS LAW, *supra* note 43, at 6022-24.

with a possibility of two extensions for no more than ten years each if certain conditions have been met. The Nigerian Oil Mining Lease is also for a twenty year term, with the possibility of a renewal prior to expiration.⁵² Licenses granted by Norway during the licensing rounds of the 1980s provided for a six-year term with a "period of prolongation" of thirty years.⁵³ Most U.K. licenses during this decade were for the same length.⁵⁴

The "two-terms" technique exemplified by the Norwegian and British licenses serves much the same purpose as the primary term/secondary term division of the American oil and gas lease. An initial, relatively short period is granted to permit the licensee to do exploratory testing and begin the work program. The license is then continued into the further term only if the initial work conditions have been met.

The British model clauses that apply to licenses granted after August 4, 1988, go even further and divide the duration into three terms. Clause 3 provides as follows:

3. This license unless sooner determined under any of the provisions hereof shall be and continue in force for the term of six years after (hereinafter called "the initial term"); but if the terms and conditions of this license are duly performed and observed and, in particular, if the work programme described in Schedule 4 to this license has been duly performed, it may be continued for a further term of twelve years as provided by clause 4 of this license and, if the terms and conditions of this license continue to be duly performed and observed, thereafter as provided by clause 5 (and subject to the provisions of clause 6) of this license for a further maximum period of eighteen years.⁵⁵

The "further term" of thirty years used in the 1990 U.K. licensing rounds was split into a second term of twelve years and a third discretionary term of eighteen years in an attempt to ensure that significant amounts of acreage were not left unexplored and undeveloped for long periods, as apparently had occasionally happened in the past.

There are some situations in which countries grant licenses for periods approximating those of the early concessions. In instances where countries wish to encourage development in areas requiring expensive

technology or presenting difficult engineering, meteorological, or geographical problems, terms approaching fifty years have been granted. Licenses granted by the United Kingdom in 1984 for the "deep-water frontier areas" north and west of Scotland provided for an eight year initial term followed by a further term of forty years.⁵⁶ More recently, there has been a move to a three-term license in these areas: an initial eight year term, a sixteen year second term, and a discretionary twenty-four year term. By way of contrast, the U.S. oil and gas lease, whether granted by a private landowner, a state, or the federal government, retains its traditional format. The primary term, during which the lessee has discretion whether to drill, has generally been shortened to three years; but if production is obtained, the lease will last for so long as oil or gas is produced in paying quantities,⁵⁷ thus deferring the lessor's resumption of control for an indefinite period of time.⁵⁸

5. Government Take

The modern concessions' provisions for compensation to the host country vary widely. A common, although not universal, form of payment is the royalty. Typically, it entitles the government to a specified fraction of gross production as soon as production commences.

Where the government wishes to encourage exploration and development in an uncertain and unproved area, the government take may be relatively modest. An example is the provision of the Turkish Petroleum Code applicable to on-shore licenses. It merely requires the payment of the traditional one-eighth (12.5%) royalty on gross production. It imposes an escalating yearly rental per hectare of area under lease, but the rentals may be reduced by as much as fifty percent by deducting from them annual expenditures incurred for exploration and drilling.⁵⁹

56. *Id.* at 5203.

57. This standard does not require that the lessee have a reasonable expectation of recovering drilling and completion costs, but that revenue exceeds operating expenses. The test is not a mechanical one. Rather, it is "whether or not under all the relevant circumstances a reasonably prudent operator would, for the purpose of making a profit and not merely for speculation, continue to operate a well" *Clifton v. Kootz*, 325 S.W.2d 684, 691 (Tex. 1959). A good, brief discussion of the "paying quantities" concept can be found in JOHN S. LOWE, OIL AND GAS IN A NUTSHELL 194-201 (2d ed. 1988).

58. See EUGENE O. KUNTZ ET AL., OIL AND GAS LAW (2d ed., 1992).

59. See arts. 60-69, Turkish Petroleum Code, Law No. 6326 (1954), as amended by Law Nos. 6558 (1955), 6987 (1957), 1702 (1973), and 2808 (1983) (translated by Mr. Murat Ozsumay, M.C.J., Texas Law School, May 1988, and Ms. Kadriye Tombus, LL.M., Tulane Law School, May 1987).

52. See Kassim-Momodou, *Notes and Comments: The Duration of Oil Mining Leases in Nigeria*, 7 J. ENERGY & NAT. RESOURCES L. 103 (1988).

53. See Cameron, *supra* note 42, at 102.

54. See UNITED KINGDOM OIL & GAS LAW, *supra* note 43, at 5357.

55. *Id.*

Variable royalties are probably more common today than fixed royalties. The royalty is usually set as a sliding scale, based on levels of production. The initial royalty may be based on a very low percentage of production to encourage interest in otherwise unencouraging areas. The U.K. onshore licenses granted before the effective date of the Petroleum (Production) Regulations of 1982 were payable under the following scale:

# OF TONES PRODUCED & SAVED	ROYALTY RATE
First 100,000	5%
Next 50,000	7½%
Next 50,000	10%
Thereafter	12½% ⁶⁰

Alternatively, where oil company interest in development is great and profitable production appears assured, the scale will be much higher and all other portions of the government take will be much greater. A good example is the 1980 Abu Dhabi concession⁶¹ which combines a rather typical "classic" concession format with a government take based on payments analogous to the bonus, delay rental, and royalty payments found in the standard U.S. oil and gas leases. Entered into at a time when oil prices were near their peak, it uses a more sophisticated method for determining royalty payments than is found in most modern U.S. leases. The relevant provision is as follows:

Article 13. Royalty Payments

(A) The Company shall pay to the Government a (fully expensed) royalty equal to twelve and one half (12-1/2%) percent of the Posted Price of Crude Oil produced and saved in the Concession Area each year, excluding Crude Oil used by the Company in its operation hereunder, as gauged at the point of export after deducting the basic sediments and water. If the production of Crude Oil during a calendar year shall reach an average rate of one hundred thousand (100,000) barrels per day, the Company shall pay a (fully expensed) royalty of sixteen (16%) percent of the Posted Price. If the production of Crude Oil during a calendar year shall reach an average rate of two hundred thousand (200,000) barrels per day the Company shall pay a fully expensed royalty of twenty (20%) percent of the Posted Price. The royalty herein provided shall be paid in whole or in part in kind or in cash at the election of the Government, the election of the Government to take its royalty wholly or partly in kind shall be given by notice in writing to the Company not less than three calendar months prior to the beginning of the calendar year to which such notice applies and shall cover a minimum period of one calendar year. Deliveries in kind

60. See UNITED KINGDOM OIL & GAS LAW, *supra* note 43, at 1-1194.

61. The concession is set out in full in VAGTS, *supra* note 46, at 448-65 (1986).

hereunder shall be credited against royalties at the prevailing Posted Price.⁶²

Sliding scales can also be based on factors other than levels of production. The Algerian mineral law regime fixes a base royalty rate of twenty percent, but reduces the percentage to 16.25% and 12.5% in areas which present exceptional difficulties for exploration and development.⁶³ The lease form used in the October 1989 and subsequent lease sales by the Texas General Land Office uses a sliding scale based upon time of development. It provides as follows:

(A) As a royalty on oil, which is defined as including all hydrocarbons produced in a liquid form at the mouth of the well and also all condensate, distillate, and other liquid hydrocarbons recovered from oil or gas run through a separator or other equipment, as hereinafter provided, 1/4 part of the gross production or the market value thereof, at the option of the lessor. . . .

(E) VARIABLE ROYALTY: (1) Subject to the other provisions of this lease, it is hereby provided that in the event production in paying quantities is established pursuant to the terms of this lease and such production is brought on line and sales thereof are commenced within () months of the effective date hereof, the royalty rate provided in paragraph 3 shall be reduced to 20%, and shall apply to each subsequent well drilled and produced on the land covered by this lease. . . . In the event production in paying quantities is established pursuant to the terms of this lease and such production is brought on line and sales thereof are commenced after the expiration of () months from the effective date hereof but prior to the expiration of () months from the effective date hereof, the royalty rate provided in paragraph 3 shall be reduced to 22.5% and shall apply to each subsequent well drilled and produced on the land covered by this lease.⁶⁴

At a time of depressed oil prices, these provisions were intended to make leases on public lands more attractive to oil companies.

As a general rule, governments reserve the right to take royalty either in cash or in kind. Under the first alternative, some method of determining the value of the petroleum must be specified. The sale price is one obvious possibility, but few, if any, governments are willing to let the sale price be the sole determinant of value. The past history of offset agreements and modern sales to affiliates may render the actual sale price suspect. Conversely, "market value," if undefined, is an almost

62. Abu Dhabi Concession, art. 13 (1980), reprinted in VAGTS, *supra* note 46, at 448-65.

63. See Nour E. Terki, Comment, *The Algerian Act of 1986 and the Encouragement of Foreign Investment in the Area of Hydrocarbons*, 3 OIL & GAS L. TAX'N REV. 80 (1987-88).

64. Texas General Land Office Lease Form (Oct. 1989 revision).

meaningless term, for it fails to indicate what type of contract one looks to in determining market value.⁶⁵ The fixed price of a long-term contract, in the few instances where such arrangements still exist, will exceed current spot prices in a down market, or fall below them in a rising market. Spot prices themselves are unstable, and futures prices show incredibly wide fluctuations from day-to-day and even minute-to-minute.⁶⁶ Hence, setting a value for oil other than the actual sale price requires specific reference points.

If there are several potential purchasers in actual competition with each other, the technique used by the Texas General Land office is a possibility. The Texas Land Office lease stipulates that payments shall be based on the highest of the following three prices: (1) the highest posted price, plus premium, if any, offered or paid for oil, condensate, distillate, or other liquid hydrocarbons of a like type in the general area where the oil is produced, (2) the highest price offered or paid in the general area, or (3) the gross proceeds actually received from sale of the oil. If competitive prices are suspect or nonexistent, as will be the case with some state marketing requirements, some other reference is necessary. The Algerian Act, for example, bases royalty value on the higher of the actual sale price or a statutory price formula which is tied to OPEC resolutions concerning price.

Valuation of oil is necessary not just for determining in-cash royalty, but also for assessing taxes. As mentioned previously, the early concessions specified the oil company's tax liability, and the 1980 Abu Dhabi concession follows the same format. It imposes an income tax of fifty-five percent on net income, which increases to sixty-five percent if production reaches a yearly average of 100,000 barrels per day, and eighty-five percent if the average is 200,000 barrels. Such contractual impositions are unlikely to be encountered outside of the Arab Emirates. In most countries, the tax rate is established by legislation which may even be distinct from the relevant petroleum code, even though taxes frequently constitute the greatest source of government take on a profitable operation. Indeed, in the United Kingdom, the Petroleum Royalties (Relief) Act of 1983 eliminated royalty payments on petroleum from most

65. Description of the types of agreements under which oil is sold today can be found in SAMIR MANKABADY, *ENERGY LAW* (1990).

66. The structure and volatility of the futures market in petroleum is the subject of an interesting and entertaining two part series in the *Washington Post*. See Thomas W. Lippman & Mark Potts, *Oil Traders: Turning on a Dime: OPEC, Energy Firms Now Lesser Players in the Pricing of Crude*, *WASH. POST*, Jan. 11-12, 1991, at A1.

new offshore fields. Except for licensing fees and other bonus-like payments, taxes were almost the sole source of government take. Because of widely varying tax regimes, any meaningful generalization about the government tax take is virtually impossible. Consider, for example, the difficulty of even a short-hand explanation of either the U.S. Internal Revenue Code or the plethora of tax provisions applicable to British petroleum production.⁶⁷

There are many forms of "government take" in addition to royalty and taxes. Some licenses may provide for direct payments closely analogous to the bonus and delay rentals found in the typical American oil and gas lease.⁶⁸ Other provisions, such as requirements that the licensee provide training and employment for workers from the host country⁶⁹ or that certain technology developed by the licensee be transferred to the host country, provide indirect benefits to the government while imposing a significant cost upon the licensee.

B. *The Production Sharing Agreement*

In the late 1950s and early 1960s, some countries, such as Iran and Indonesia, abandoned the traditional concession in favor of the production sharing agreement.⁷⁰ The preference which third world countries have for this type of arrangement over concessions may be explained by the definition given them by a Nigerian law professor at the University of Benin. Professor Omorogbe has described production sharing agreements as:

[A]rrangements where the foreign firm and the government share the output of the operation in predetermined proportions. This new form has been regarded . . . as being a substantial departure from the old

67. See UNITED KINGDOM OIL & GAS LAW, *supra* note 43, at 4-001 to 4-253 (regarding the relevant tax provisions in the United Kingdom).

68. See, for example, the provisions for bonus payments and annual rentals in the 1980 Abu Dhabi concession set out in VAGTS, *supra* note 46, at 448-65. See ERNEST E. SMITH & JACQUELINE L. WEAVER, *TEXAS LAW OF OIL AND GAS* § 4.1(C) (Supp. 1991); Owen L. Anderson, *David and Goliath: Negotiating the "Lessor's 88" and Representing Surface Owners in Oil and Gas Lease Plays*, 27 *ROCKY MTN. MIN. L. INST.* 1029 (1981); John S. Lowe, *Representing the Landowner in Oil and Gas Leasing Transactions*, 31 *OKLA. L. REV.* 257 (1978); Ronald D. Nickum, *Negotiating and Drafting a Modern Oil and Gas Lease on Behalf of the Lessor*, 13 *TEX. TECH L. REV.* 1401 (1982) (concerning issues in negotiating bonus, royalty, and related benefits in an American oil and gas lease).

69. See, e.g., art. 120, Turkish Petroleum Code, Law No. 6326 (1954), as amended by Law Nos. 6558 (1955), 6987 (1957), 1702 (1973), and 2808 (1983) (providing that "'Petroleum right' owners shall financially sponsor special education and training abroad or in Turkey of Turkish citizens, not to be less than 25% of foreign persons they employ.") (translated by Mr. Murat Ozsumay, M.C.J., Texas Law School, May 1988).

70. See MIKESSELL, *supra* note 20, at 59-76; Robert Fabrikant, *Production Sharing Contracts in the Indonesian Petroleum Industry*, 16 *HARV. INT'L L.J.* 303 (1975).

concessions in that the host state is theoretically the undisputed owner of the petroleum, with the foreign corporations being engaged as contractors to perform certain specified tasks in return for a fee in kind.⁷¹

From the standpoint of an American or Canadian lawyer, the production sharing agreement may be conceptualized as a type of farmout.⁷² The national oil company commonly holds a concession in a given block. It grants a foreign company a contractual right to explore in a specified area in exchange for the opportunity to recover its costs and a specified profit. In return, the state oil company contributes the acreage and receives a share of production.

1. Parties and Method of Award

The entity with whom a foreign corporation deals when seeking to obtain a production sharing contract varies from country to country. Although in many instances the foreign corporation deals primarily with the state oil company, state ministries may also be involved, either as participants in the granting process, or as parties who must sign off on the final agreement. Unfortunately, in many instances the relationship between corporate management and supervising governmental agencies is so blurred that lines of authority are difficult to sort out,⁷³ and a company may have some difficulty in ascertaining if all necessary approvals have been received. The type of approvals required may also depend upon the method chosen for awarding the contract. Any of the methods used for awarding concessions can also be used for awarding production sharing agreements. For example, if the only issue is the share of "profit oil"⁷⁴ that the government will receive, bidding based upon a model form can be used to determine which company receives the contract.

71. Yinka Omorogbe, *The Legal Framework for the Production of Petroleum in Nigeria*, 3 J. ENERGY & NAT. RESOURCES L. 273, 279 (1987).

72. See JOHN S. DZIENKOWSKI & ROBERT J. PERONI, *NATURAL RESOURCE TAXATION* 505-08 (1988). In the United States, many forms of carried interest arrangements have developed to take advantage of the tax benefits of the pool of capital doctrine. In a typical farmout arrangement, a lease contracts to transfer acreage to a company if the company drills a well. Once payout occurs and the driller recovers all of the costs of drilling the well, the driller and the lessee share the proceeds of production according to a predetermined formula. For an exhaustive study of farmouts in the United States, see John S. Lowe, *Analyzing Oil and Gas Farmout Agreements*, 41 Sw. L.J. 759 (1987).

73. See generally MARTIN M. OLISA, *NIGERIAN PETROLEUM LAW AND PRACTICE* 184-85 (1987); Alastair R. Lucas, *State Petroleum Corporations: The Legal Relationship with the State*, 3 J. ENERGY & NAT. RESOURCES L. 81 (1985). The corporate structure of the most important state oil corporations is detailed in BENTHAM & SMITH, *supra* note 35.

74. See *infra* notes 79-83 and accompanying text.

2. Scope of Rights Granted

In terms of rights granted, the company entering into a production sharing agreement receives fewer rights than under the concession. As already emphasized, the company will not receive "title" or "interests" in any legal sense to the oil in place. The primary legal distinction between the production sharing arrangement and the farmout agreement is that in the production sharing agreement there will probably not be an assignment of part of the concession in the developed acreage. Indeed, one principal rationale for using the production sharing arrangement is that it involves no surrender of the host country's sovereignty, for title to minerals in the ground does not pass to a foreign company.

The oil company will also have less discretion over the way in which it conducts its operations than it has under a concession or farmout. Indonesia, which has had production sharing agreements since the 1960s, is frequently regarded as having established the archetypal production sharing agreement.⁷⁵ Under the Indonesian 1977 model form, the contractor agreed to contribute a set amount of money to a work program for a six year period. During each of the six years, the contractor was required to submit a proposal to Pertamina, the state oil company, for its approval. This approval system allowed the country to maintain a close continuing control over operations. In addition, the Indonesian contract provided that Pertamina:

(a) have and be responsible for the management of the operations contemplated hereunder; however, PERTAMINA shall assist and consult with CONTRACTOR with a view to the fact that CONTRACTOR is responsible for the Work Program.

...
(c) otherwise assist and expedite CONTRACTOR'S execution of the Work Program by providing facilities, supplies, and personnel ... and to make available from the resources under PERTAMINA'S control. In the event that such facilities, supplies or personnel are not readily available then PERTAMINA shall promptly secure ... the use of such ... from alternative sources. Expenses thus incurred by PERTAMINA by CONTRACTOR'S request shall be reimbursed to PERTAMINA by CONTRACTOR and included in operating costs ... CONTRACTOR shall advance to PERTAMINA before the beginning of each annual Work Program a minimum amount of ... (\$75,000) ... If any amount advanced hereunder is not expended by PERTAMINA by the end of annual Work Program period, such

75. For an extensive analysis of the Indonesian Production Sharing Agreement, see MIKESSELL, *supra* note 20, at 59-60; and Fabrikant, *supra* note 70, at 303.

amount shall be credited . . . for the succeeding annual work program period

(e) have title to all original data resulting from the petroleum operations . . . as CONTRACTOR may compile during the term hereof provided, however, that all such data shall not be disclosed to third parties without informing CONTRACTOR and giving CONTRACTOR the opportunity to discuss the disclosure of such data

The involvement of Pertamina as a manager of the operations after the foreign oil company had performed the work program as specified in the production sharing arrangement was a significant departure from the clauses in the old concession arrangements. In addition, the Indonesian contract required that the contractor pay Pertamina a management fee for facilitating the work program; under such a system the state oil company retains management control and receives another source of compensation in the arrangement.⁷⁶

3. Duration

The production sharing agreement is usually shorter than either the farmout or the concession. Under the typical U.S. farmout, successful drilling by the farmee entitles it to rights in the farmout acreage which will last so long as the underlying lease is in effect.⁷⁷ The production sharing agreement will have a specified time limit (perhaps twenty years) which may be shorter than the concession and which, in any event, may terminate if the agreed upon development program is not carried out. In fact, most production sharing arrangements have two periods expressly defined in the arrangement: an exploratory and development phase, and a production phase.⁷⁸ The duration of the exploratory phase will depend upon several factors including the difficulty of discovering oil in the contract area, the size of the contract area, the need to attract investment in this area, and the type of technology that will need to be used in the

76. It should be noted, however, that one commentator has stated that the management clauses of the Indonesian production sharing agreements are "[in practice] weaker than they might appear to be." KAMAL HOSBAIN, *LAW AND POLICY IN PETROLEUM DEVELOPMENT* 140 (1979). This comment is supported by the fact that the state oil company usually had 30 days to propose changes to the multi-national's plan. In light of the company's lack of expertise, it would be difficult to make important changes. Further, companies would generally only provide the state oil company with raw data and thus complicate any efforts to provide meaningful input into the management process.

77. Of course, all requirements depend upon the terms of the agreement. Compare Riley v. Meriwether, 780 S.W.2d 919 (Tex. App.—El Paso 1989, no writ) with Rogers v. Ricane Enterprises, Inc., 772 S.W.2d 76 (Tex. 1989).

78. See, e.g., MIKESSELL, *supra* note 20, at 71 (describing the 1978 Peruvian production sharing contract).

exploration period. Some contracts, such as the Indonesian production sharing arrangement, are generous on the size of the concession area and the duration of the exploratory period, yet they use a relinquishment clause to re-obtain some of the acreage and force the multi-national to fully develop the productive areas within the exploratory period. Other contracts grant small tracts of land and have a relatively short exploration period. This latter arrangement resembles the farmouts that are commonly used in the United States with a one well obligation and a one or two year drilling requirement.

4. Government Take

Perhaps the most noteworthy aspect of the production sharing agreement is the division of production between the foreign company and the host government (or its state company). Three related issues inevitably arise in working out this division: (1) whether any provisions exist for recovery of the foreign company's costs, (2) whether any provisions are made for accelerated recovery of costs or interest on the costs, and (3) how such costs will be reimbursed. All three bear upon the extent to which the host country will share in the costs of exploring and developing the area subject to the contract. The early Guatemalan contract stood at one extreme of the spectrum. It contained no express cost recovery provision whatsoever. Instead, the oil company simply received a stated share of production, which was graduated from forty-five percent for production under 15,000 barrels a day to twenty-five percent for production in excess of 100,000 barrels a day.⁷⁹

More commonly, the production sharing agreement provides that the operator will receive up to a specified fraction of production (generally ranging from thirty to fifty percent) from which it reimburses itself for its capital expenditures and operating costs. There may be an amortization period for capital costs, such as drilling. For example, under one variant of the Indonesian agreement, a maximum of twenty percent of capital costs may be taken from "cost oil" in a year. Depending upon the country, financing costs may or may not be included within the concept of reimbursable expenses. From the operator's standpoint, express provisions for determining overhead costs are also necessary. These can be stated as a flat percentage of actual operating costs, as is done in the production sharing agreement between the Nigerian National Petroleum Company and Ashland Petroleum Company which calculates overhead

79. See *id.* at 77-84.

as two percent of actual operating costs.⁸⁰

Once all authorized expenses have been deducted up to the maximum percent of "cost oil" set out in the agreement, the remaining oil, usually called "profit oil," is divided between the host country and the operator in accordance with a specified formula. Alternatively, the split may be based on a sliding scale, analogous to the royalty discussed earlier. The host country may get a progressively larger share as daily production increases. The following clause from a Kenyan production sharing agreement⁸¹ illustrates this possibility.

COST RECOVERY, PRODUCTION SHARING AND INCOME TAX

(1) Subject to the auditing provisions under clause 30, the Contractor shall recover the Petroleum Costs, by taking and separately disposing of an amount equal in value to a maximum of percent (. . . %) of all Crude Oil produced and saved from the Contract Area and not used in Petroleum Operations. Such cost recovery Crude Oil is hereinafter referred to as "Cost Oil"

(2) The total Crude Oil produced and saved from the Contract Area and not used in Petroleum Operations less the Cost Oil, shall be referred to as the Profit Oil and shall be shared, taken and disposed of separately by the Government and the Contractor according to increments of Profit Oil as follows:

Increments Profit Oil	Government's Share	Contractor's Share
First 20,000 Barrels/day	%	%
Next 30,000 Barrels/day	%	%
Next 50,000 Barrels/day	%	%
Any volume over first 100,000 Barrels/day	%	% ⁸²

Nigeria, after setting "cost oil" at 40% and petroleum taxes at 33%, divides the remaining 27% of crude oil between the NNPC and the operator on a 35%/65% basis until production exceeds 50,000 barrels a day, when NNPC's share increases to 70%.⁸³

A sliding scale based upon profitability is still a third method for splitting profit oil. A technique sometimes used in African countries'

80. See Omorogbe, *supra* note 71, at 280.

81. This and other examples of typical production-sharing clauses can be found in BLINN ET AL., *supra* note 7, at 69-81.

82. *Id.* at 94.

83. See Omorogbe, *supra* note 71, at 280.

production sharing agreements is to base the host country's share of production on the foreign corporation's discounted cash flow post-tax rate of return. The theory behind this technique has been to allow the host country, rather than the company, to gain the benefit from an unexpectedly large discovery or higher oil prices.⁸⁴

C. Service Contracts

The final form of exploration and production arrangements that should be mentioned is the service agreement. Under this arrangement, a company agrees for a fee or a share of production to provide the host country or its state oil company with services or technical information relating to the development of mineral resources.

In the pure service contract, the country's state oil company contracts with a foreign company to perform a specified service for a flat fee. Although such contracts are widely used in the United States,⁸⁵ they appear to be somewhat less common in the development of international petroleum reserves.⁸⁶ Because of the difficulties that countries face in obtaining U.S. currency and the ease of paying in kind with petroleum, some service agreements provide that the contractor may be paid with a certain specified amount of production from the service area.⁸⁷ Again resorting to an analogy to U.S. arrangements, such agreements somewhat resemble the arrangements under which a geologist or other person performs services in exchange for the right to a specified fraction of production or an amount of production limited by a dollar sum or number of barrels.⁸⁸

The form of service contract specifically designed for developing petroleum reserves is the risk service contract, which probably finds its widest use and most sophisticated development in Latin America.⁸⁹ The general concept of the risk service agreement is that the oil company

84. BLINN ET AL., *supra* note 7, at 75-76.

85. In many cases, a partnership holding an oil and gas lease secures the financing and hires contractors to perform geological and geographical services, drilling services, and production services if needed. For an excellent and exhaustive discussion of U.S. drilling service contracts, see Owen L. Anderson, *The Anatomy of an Oil and Gas Drilling Contract*, 25 TULSA L.J. 359 (1990).

86. For an example of the use of such an arrangement, see *Matter of Sedco, Inc.*, 343 F. Supp. 561 (S.D. Tex. 1982), vacated in part, 610 F. Supp. 306 (S.D. Tex. 1984).

87. See Tomislavo E. Dabinovic, Comment, *The New Argentine Legal Regime for the Petroleum Industry: Decree 1443 of 6 August 1985*, 3 OIL & GAS L. & TAX'N REV. 75, 76 (1985-86). Such provisions, although occasionally controversial, are especially desirable for a country with an unfavorable balance of payments.

88. Payments based on such arrangements are commonly referred to as "production payments." See SMITH & WEAVER, *supra* note 68, § 2.4(D).

89. For discussions of the terms of the risk service contracts of two Latin American countries,

agrees to explore a specific area and evaluate its potential for discoveries. The work obligations will normally be spelled out in detail, such as is done under modern concessions and licenses. However, the company acquires no "property rights" in the reservoir. In this respect, its legal position is similar to that of the American drilling contractor.

Throughout the initial exploratory period, the company invests only its own money with no expectation for payment unless commercial production results.⁹⁰ Thus, the company bears the entire financial risk without any rights in the explored territory. For example, Article 7.1 of the Argentinean model contract⁹¹ obligates the foreign corporation (i.e., contractor) "[t]o provide at its own risk and for its exclusive account the technology, capital, equipment, machinery and any investment that may be required for due performance of the [c]ontract."⁹²

Once there is a declaration of commercial productivity, the company has a right to be paid for its services and to additional compensation for the risk it has undertaken. The manner and extent of compensation, which are set out in the agreement, differ widely. For example, under the Brazilian risk service contract, exploration costs are reimbursed without interest, whereas development costs are reimbursed with interest, at the rate specified in the agreement or, alternatively, tied to a U.S. prime rate.⁹³ Additional remuneration is calculated on the basis of a formula which takes into account both production volume and crude oil prices. The formula has been described as follows:

$$R = (Q_1X_1 + Q_2X_2 + Q_3X_3) \times P \text{ where}$$

R is the remuneration for the services rendered by the contractor; P is the market price of crude oil, as defined in the contract, produced from each commercial field discovered and developed by the contractor; Q₁, Q₂ and Q₃ are the shares of the quarterly production volume obtained in each commercial field discovered and developed by the contractor as defined in the table below:

Share up to the first 600,000 cubic metres: Q₁

Share between 600,000 and 1,200,000 cubic metres: Q₂

Share above 1,200,000 cubic metres: Q₃. X₁, X₂, and X₃ are the

see Dabinovic, *supra* note 87; João Santos C. Neto, *Risk-Bearing Service Contracts in Brazil*, 3 J. ENERGY & NAT. RESOURCES L. 114 (1986); and MIKESSELL, *supra* note 20, at 92-107.

90. Brazilian Risk Service Contract, arts. 2.1, 2.2, reprinted in Neto, *supra* note 89, at 114.

91. Set out in Decree No. 1443 of August 5, 1985, modifying Decree No. 623. A copy of the model contract was graciously furnished to me by Mr. Tomislavo Dabinovic, Dabinovic y Asociados, Abogados, Buenos Aires. A discussion of the contract can be found in Dabinovic, *supra* note 87.

92. Decree No. 1443.

93. Neto, *supra* note 89.

values between 0.00 and 1.00, applied to the relevant shares of production as defined in the preceding table. X₁, X₂, and X₃ are negotiated in each contract so as to secure an appropriate remuneration to the funds invested by the contractor, that is, a rate of return which takes account of the risks involved.⁹⁴

In contrast, the Argentinean contract simply divided the net production remaining after a twelve percent royalty is paid to the state between Yacimientos Petrolíferos Fiscales, the state oil company holding the concession, and the contractor. The amount owed to the contractor was calculated by multiplying the contractor's percentage share times the international oil price.⁹⁵

In many countries, especially those of Latin America, the concept of national sovereignty over natural resources extends to production. The risk service contract is commonly designed to comply with this concept since "title" to oil produced remains in the sovereign or its representative, the state oil company. In fact, this may be little more than a legal fiction. As noted earlier, most countries using risk service contracts are unable to pay for extensive services in American dollars—the universally recognized standard by which oil is sold. Hence, risk service contracts commonly give the contractor an option to receive reimbursement for its expenses and risk remuneration in oil or, what may amount to almost the same thing, in the form of a right to "buy" the crude oil produced.⁹⁶ Presumably, such a "purchase" is merely a bookkeeping transaction.

A few risk service agreements avoid this type of issue altogether and provide for payment directly in petroleum. For example, the risk service contract used by the state oil company of Ecuador, Corporación Ecuatoriana del Petróleo (CEPE) gives the foreign company much more favorable rights in production. In providing for reimbursement and payments of the service fee, it states that:

CEPE and CONTRACTOR hereby agree that any investments made by CONTRACTOR during the Exploration and Exploitation Periods shall be reimbursed by CEPE in kind and that CEPE shall also pay CONTRACTOR in kind for the Net Service Fee provided for hereunder. Such reimbursements and payments shall be taken from the Exportable Balance Applicable to this CONTRACT, and such Exportable Balance shall in the first place be employed to satisfy such payments and reimbursements.⁹⁷

94. *Id.* at 115.

95. Dabinovic, *supra* note 87, at 76.

96. See Omorogbe, *supra* note 71, at 281-82.

97. BLINN ET AL., *supra* note 7, at 94.

There seems to be relatively little distinction between this form of risk service agreement and a production sharing arrangement.

D. *The Participation Agreement*

The term "participation agreement" has no fixed definition, but merely refers to one of the documents setting out the terms on which the host country (or its state oil company) participates in the venture with the foreign operator. Thus, it is not so much a separate form of development arrangement as an agreement which is an adjunct to a concession, production sharing agreement, or even risk service contract. Its closest American analogue may be the joint operating agreement, although even this analogy is quite inexact.

In many participation agreements, a joint operating company is formed between the country (or its national oil company) and the foreign corporation to develop the petroleum reserves. Although it is difficult to generalize in the context of existing participation agreements, in theory, the country contributes the acreage and the company contributes technology and expertise as well as a certain sum of capital to the jointly formed entity. This entity is then operated by a management committee composed of both host country and company representatives. In some cases, ownership and management are equally divided and in other cases the country retains a one percent advantage.

This is certainly not a universal format nor does it represent universal usage of the terminology. For example, in Nigeria, the document referred to as the participation agreement sets out the respective interests of the oil companies and the national petroleum corporation in the concessions, the fixed and movable assets used for exploration, development, production, transportation, storage, delivery (including associated assets, such as offices and housing), and the working capital applicable to oil operations. A separate joint operating agreement, somewhat similar in terms with the joint operating agreement familiar to most American and Canadian oil and gas lawyers,⁹⁸ sets out the relationship among the parties and the terms of development.⁹⁹

Perhaps the most concise summary for the different forms participation can take is set out as follows:

There exists, however, a wide variety as to the form and extent of the

98. For a concise description of the typical U.S. operating agreement, see SMITH & WEAVER, *supra* note 68, § 16 (1991).

99. Omorogbe, *supra* note 71, at 277-79.

participation. Illustrations of that variety are the fixed participation, the gradual participation, and the optional participation. The fixed participation system consists in granting a given percentage of production to the [host country] (or its national oil company) while the gradual participation approach entails an increase of that percentage in accordance with the level of production, or pursuant to another parameter. The optional participation scheme consists in the possibility for the [host country] (or its national oil company) to decide its participation percentage as and when it sees fit. Furthermore, the participation may be immediate or deferred. In the first case, the percentage of participation is determined at the outset while, in the second case, it takes effect upon the decision of the [host country] (or its national oil company) to participate at a given moment—generally after commercial discovery.¹⁰⁰

Note that one common form of participation is the carried interest, under which the foreign companies bear the entire cost of exploration, and the state oil company has no liability for costs until the development stage of a commercial field.¹⁰¹

IV. CONCLUSION

Discussing petroleum arrangements in terms of basic types is helpful analytically, but in practical terms it may be somewhat misleading. The distinctions between the concession, production sharing agreement, and risk service contract are primarily conceptual. In purely legal terms, the concession is a more favorable arrangement than the production sharing arrangement, and both are preferable to a risk service contract; but in practical terms, the size of government take, political risk, availability of financing, and other business related factors should have more important bearing upon a company's willingness to invest in an area than the legal format under which it carries out its program.

Moreover, the concepts underlying one arrangement are not always used exclusively within that arrangement. The different provisions can be merged. In some instances, such a merger may transform what is nominally one type of agreement into what in essence is a different type. Some forms of service agreements appear to differ only in name from production sharing contracts. Perhaps the best known example of a deliberate combination of elements is the contracts used by the People's

100. BLINN, ET AL., *supra* note 7, at 100.

101. See, e.g., the Danish system described in Røenne & Budtz, *supra* note 38, at 162-63 (1985).

Republic of China in their first licensing round in 1984. The model contract contained elements taken from production sharing agreements, service contracts, and state participation agreements.¹⁰²

Further, several types of provisions, including some not discussed above, are likely to be included in any of the types of arrangements. Almost any arrangement with a developing country, whether it be a concession or a service contract, will likely include provisions designed to require reinvestment in the country for petroleum related projects and for the favoring of domestic suppliers and employees.¹⁰³ For example, Article 7.12 of Argentina's model service contract specifies that by the expiration of the third year of the agreement, seventy-five percent of the employees used in performing the contract will be Argentine citizens.

Beyond these rather basic comments, it is difficult to generalize about petroleum arrangements and certainly impossible to make any forecast about their future. Such agreements tend to be reactive in that global developments—especially those having to do with oil prices—affect current negotiations and bidding, and the participants on both sides all too frequently ignore the history of enormous instability in the industry and assume that present conditions will continue to exist into the indefinite future. When conditions change, either or both parties may find it impossible to live with the terms of the original agreement. Hence, the one safe comment which *can* be made about the future is that companies entering into petroleum arrangements should be prepared to renegotiate them as conditions change or risk having even less desirable terms forced on them by the host government.

102. See Arvid Frihagen, *The Chinese and Some Developing Nations' License Regimes*, in 7TH SOLSTRAND OIL & GAS LAW CONFERENCE: UNIVERSITY OF BERGEN (1984).

103. See, e.g., Abu Dhabi Concession, art. 45 (1980) (requiring company to conduct a feasibility study to determine whether several hydrocarbon processing facilities are feasible). Additionally, the study would determine whether a required contribution of 10% of its profits, once production has reached 100,000 barrels of production per day for 90 consecutive days, is feasible.

TAXATION OF INTERNATIONAL PETROLEUM EXPLORATION AND PRODUCTION ACTIVITIES*

Frank M. Burke, Jr.†

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