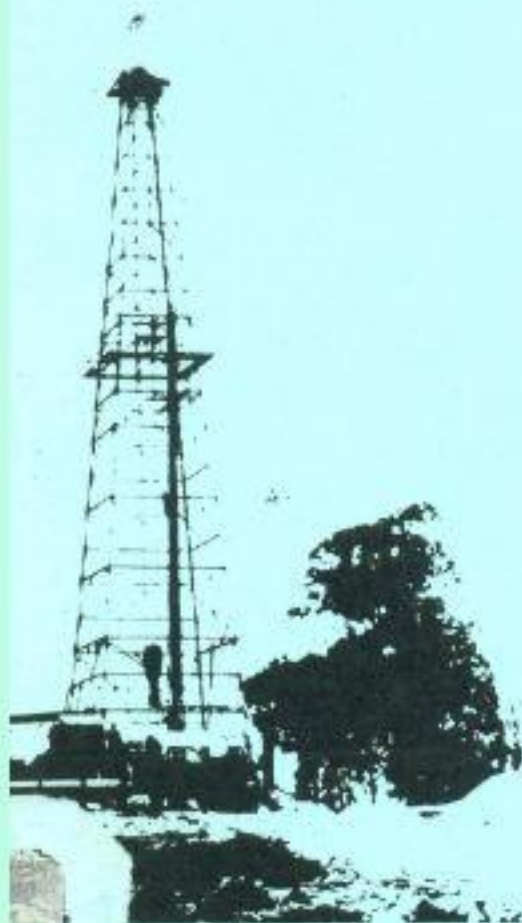


TERMS OF REFERENCE FOR ADVISORY  
IN THE ESTABLISHMENT OF THE  
HYDROCARBONS EXPLORATION CONTRACTING SYSTEM



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## **TABLE OF CONTENTS**

### **PRESENTATION**

1. Background
2. Basic Terms of Reference to Elaborate Contracts
3. Description of the Main Economic Aspects of the Contracts in Argentina, Brazil and Peru
4. Regional Advisory
5. Conclusions and Recommendations

### **APPENDIXES**

## PRESENTATION

Complying with the mandate from the X Meeting of Ministers given by means of Decision D/X/051, a working group was convoked to elaborate a basic methodology for the establishment of risk contracts for hydrocarbons exploration and exploitation, looking towards the idea that such could serve as an instrument of negotiation of the Member States of OLADE and to serve as basis for advisory to the Permanent Secretariat of the Organization.

The Permanent Secretariat established as objectives those of its programme on the subject, and as the subject for discussion at the mentioned working group, the following:

1. Exchange of contracting experiences
2. Elaboration of the basic terms of reference for contracting
3. Formation of regional advisory
4. Establishment of the international information service
5. Determination of the specific programmes of cooperation OLADE-ARPEL

The experts that participated in this group demonstrated their full knowledge of the subject and transmitted to the Permanent Secretariat of OLADE the institutional support from the oil institutions of their respective countries. Likewise, within the frame of cooperation OLADE-ARPEL, the Secretary General of this important regional organization also participated in the group. The List of Participants is appended to this report.

This document embraces the basic aspects for the elaboration of risk contracts, as well as a project of the programme for the establishment of a regional advisory on this subject. By means of this advisory, OLADE, expects to perform one of the most important tasks included in the Agreement of Cooperation OLADE-ARPEL, by securing the support from the latter, through its Member Enterprises and its accumulated experience, required by such an ambitious task.

As a project of this kind cannot be performed without the participation of the countries that will request such advisory or that could serve as basis for it -through an instrument created for this purpose, which in this case is the Latin American Energy Organization- the Permanent Secretariat will be awaiting for the observations, comments and suggestions that will enable the Organization to fulfill, in the best possible way, the wishes stated by the Member States, through the ministerial decision mentioned at the beginning of this chapter.

## 1. BACKGROUND

### 1.1 General Oil Situation

The place occupied by oil in the energy supply of humanity, the limitation of reserves, its characteristic of being a finite element and the constant increase of its prices in the international market, among other aspects, rebound in the economic and social development of the countries, increasing efforts in relation to the perspective of this resource.

The concepts of property, sovereignty, public service, economic and social development, national security and others of great importance, force the majority of the countries to explore and exploit directly their hydrocarbons or the exercise an effective control over the operating companies. In this form and in accordance with the well-known principles of the Constitutive Agreement of the Latin American Energy Organization, in relation to this subject, the States are capable to guarantee the exercise of their sovereign rights.

The difficult economic situation that the majority of the Latin American countries are facing at this time, the lack of experience, the lack of financial resources and others, constitute a big obstacle in the direct development of the oil activities and therefore, sooner or later, they have to look for the participation of international companies, usually through the signing of risk contracts with different nominations, clauses, forms and contents.

The developed countries had attracted large size companies for the exploitation of areas such as the North Sea, Alaska and extensive offshore zones, since with the present oil prices, these and other fields had become commercially exploitable.

It has been said that the era of easy oil is gone and that its exploration is now centered around each time more marginal and deeper areas, with the consequent difficulties of financial and technical kind.

Considering the present circumstances, it is evident that oil has become the main object of exploratory activities and this can be proved by the numerous risk contracts that have been signed and by the intensification of the exploratory activities of the state oil companies.

In Latin America, except for Venezuela and Mexico, the rest of the countries had signed or are going to sign Risk Contracts, which is a type of contract that could be considered adequate as a financial complement to the necessary exploration for the discovery and production of hydrocarbons that are in the fields of the sedimentary basins of our continent.

## 1.2 Contracting Evolution

The initial regime of concession contracts has evolutionated with the establishment of other type of contracts such as the association contracts, the rendering of services and operations, which in different aspects improved substantially the participation of the States.

The tendency to attain larger benefits in favour of the State, ended up in some countries with the nationalization of the oil industry.

Presently, there are many kinds of contracts that have, as a common characteristic, the risk clause as exclusive responsibility of the contractors and notorious similar conditions in the majority of the agreed points.

### 1.3 Exploratory Activities

The exploratory activities that have been developed in Latin America through the state enterprises of ARPEL, are included as appendix of this document; also are included those performed by Latin American countries that do not have state enterprises and that present indications of existence of oil or gas.

Within this last group and according to the geological and geophysical available information, there is a possibility of finding oil fields in the cretaceous formations of Central America, especially in the area of Guatemala, in the Atlantic territorial sea of Honduras, Nicaragua and Costa Rica, as well as in the Pacific Ocean in the Nicaraguan region close to the Gulf of Fonseca.

In Guatemala, the companies that are operating under risk contracts, have discovered oil in two different zones, through the drilling of 5 positive wells: 4 in the Rubel Santo formation which production is estimated in 5000 d/d and in the Chinajá formation 3000 b/d.

In the territorial sea of Honduras, across the Trujillo Coast, three areas were assigned to two companies by the risk contracts system. There is no information as yet on the results obtained.

Nicaragua has a concession in the Atlantic coast and the results of the drilling of various wells indicate the possibility of gas existence.

In Costa Rica, from drillings made in the Atlantic Ocean, it is known that there is a possibility of finding hydrocarbons.

### 1.4 Sedimentary Basins

In Latin America, the sedimentary basins with hydrocarbons potential -including the maritime zones of up to 200 square meters- have been estimated at 12'400.000 Km<sup>2</sup> which represent around 19 o/o of the world's surface.

Out of this, 37 o/o correspond to Brazil, 17 o/o to Argentina, 10 o/o to Mexico, 9 o/o to Peru, 8 o/o to Colombia, 4 o/o to Venezuela, 2 o/o to Ecuador, 13 o/o to the rest of the countries, and obviously, the majority of these areas are still un-explored.

The detail of the estimations of the sedimentary basins of some countries is part of the preliminary summary of ARPEL included in the mentioned document that is being appended to this report.

As it can be seen, the Latin American countries urgently need to intensify the explorations in the sedimentary basins of the inland and offshore zones of their respective territories, with the purpose of finding accumulations of hydrocarbons.

## **2. BASIC TERMS OF REFERENCE FOR ELABORATION OF CONTRACTS**

### **2.1 Contracting Process.**

The contracting process embraces the following main points:

- Decision to contract and formulate policies in the Governmental spheres and the State Enterprises.
- Preliminary conversations with the Companies, to learn about their points of view.
- Elaboration of the contracting bases.
- Qualification of the oil enterprises.
- Bids.
- Selection of Bids.
- Negotiations
- Signing of Contracts
- Execution of the contracting obligations.
- Control and auditing of the development of activities, and
- Termination of the contracts

### **2.2 Formation of Teams for the Negotiation**

The negotiations of the contracts require to form multidisciplinary teams of stable and experienced negotiators in the fields of Economy, Law and Oil Technology. The negotiating groups require support from the advisory, control and auditing sectors in the execution of the contracts.

OLADE and ARPEL, will develop programmes of formation and training of the negotiating teams of the interested countries. Likewise, with the participation of support groups from the State Enterprises and independant proffessionals of the region, they will coordinate the advisory in the negotiations, in the control and auditing of the contracts. Many oil enterprises have stated their support to this iniciative.

## **2.3 Basic Contents of the Risk Contracts**

The basic contents of the risk contracts could be summarized in the following aspects:

### **2.3.1 Objective**

The risk contracting has the purpose of exploring, developing and exploiting hydrocarbons in the contracting countries.

In some cases, for instance Brazil, the objective of the contract is the rendering of technical and financial services until the developing stage is reached, and from then on the exploitation activities are directly taken over by the state enterprise PETROBRAS.

### **2.3.2 Parties**

The parties are:

The Oil State Enterprises or Public Organizations appointed to carry on this project, and the contracting companies.

It has been proved that the national governments have stopped to participate directly in the signing of these contracts, and that they do this through their state enterprises or the public organizations appointed to be responsible of these obligations.

In this form of non-participation of the States, direct conflicts with the national governments are avoided and at the same time the sovereignty of a country is preserved, as well as an special mechanism of understanding is guaranteed to overcome the political incidences that could derive from any difference of criteria.

Before the signing of the contracts, the countries take the necessary precautions to avoid speculative situations, they regulate the formation of subsidiary enterprises with the back-up and guarantee of the main companies and in all the cases the technical, financial and legal status of the contractors are fully investigated.

### **2.3.3 Applicable Laws**

The Hydrocarbons Law to be applied must be stipulated making reference to the respective articles and stating other legal and reglamentary dispositions related to this.

### **2.3.4 Accounting Regime**

The accounting dispositions that are to regulate the economic relationships of the contracting activities, must be clearly identified.



### **2.3.5 Number of Contracts**

In the majority of the cases the number of the contracts is only one per enterprise and per area, but, some countries admit two and others do not state any limits.

### **2.3.6 Geological and Geophysical Information and other Dispositions**

It is considered advisable to be able to count on geological and geophysical information beforehand, to reinforce the negotiating power in favour of the State. (This information must be covered by the interested countries).

### **2.3.7 Exploration**

In the exploration period the time of duration is normally indicated; the minimum works to be performed; the amount of the investment; the delivery of information; the data interpretation; the number of wells that should be drilled or the equivalent in meters; the control of the State in complying with payments and exploratory duties; extensions of the areas; number of contracts; termination of the period; responsibilities of the companies; and, other stipulations.

### **2.3.8 Time Period**

The exploration period goes from 3 to 8 years, according to the situation and priorities that each country will give to these oil activities.

The Peruvian contracts, for instance, have two exploration periods. The first one with a maximum duration of two years for geologic and seismic work of the area and, the second one has a duration of two years, that could be extended by two more years for exploratory drilling. For each one of these periods, a working programme is established as well as an specific banking guarantee. At the end of each period the contractor can return the area and cancel the contract. In any moment they can continue then with the exploitation stage, but within a maximum term requested by the contractor. At the end of the maximum period of exploration established by the contract, half of the area contracted for that period must be reverted.

Another example is Brazil that in the last contracts established a period of 3 years for offshore exploration and 5 years for inland. If there is insufficient seismic data, the contractor is permitted at the end of the first year offshore or the third year inland, to drill the corresponding wells, but if this decision is not taken, they must resign to the contract. The corresponding investments are guaranteed by Bank Letters of Credit.

Normally and with the purpose of leaving these duties for their annual working programmes, the companies prefer not to state a definite time period, figures or activities. In any case it is better to combine in the contract these factors.

### **2.3.9 Minimum Exploratory Programme**

During this stage it is necessary to determine the type of minimum exploratory works that are going to be performed, especially the number of kilometers of seismic lines, the interpretation studies and a minimum number of exploratory wells or their equivalent in drilled meters.

For instance, Brazil in one of its contracts states a minimum figure for the seismic research and another for exploratory drilling. The figures are established in the bids and negotiations, based on the proposed programmes.

### **2.3.10 Minimum Investments**

The execution of the exploratory works are consolidated by stating the minimum investments for the geological and seismic exploration and for the exploratory drilling. The fulfilment of such is secured by the corresponding financing guarantees.

### **2.3.11 Technical Data.**

It is very important to indicate the delivery, ownership, handling of the technical and economical information and especially of the corresponding interpretations.

### **2.3.12 Extension of the Areas**

The extension of the areas depends on the zone and hydrocarbons background. Some countries consider proper to contract lots of up to 2.000 Km<sup>2</sup>, others go up to ten thousand. The general average goes from 4.000 to 5.000 Km<sup>2</sup>.

### **2.3.13 Initial Payments of the Contractors**

According to the hydrocarbons law of each producing country in this period they charge entry fees, surface rights, royalties and other participations.

Really, the fees paid during this period are part of the cost because by being recuperated by the contractors during the production stage, are only an advanced payment.

Although their amount is small, companies are not willing to pay these kind of fees and they consider that their elimination stimulates the investments.

### **2.3.14 Reversion of areas**

The exploratory stage finishes when the term is completed, when commercial reserves are found and the production period is initiated or when areas have been reverted because the contrary has happened. To this respect, it is convenient to determine the correct form for the reversion of the areas and installations, in each case.

### **2.3.15 The Risk of the Contractors**

In all these contracts it is stated that the risk is exclusive responsibility of the companies, since the States do not assume any loss if commercially exploitable oil is not discovered.

### **2.3.16 Evaluation**

Once the oil is found, in order to determine the commercial value of the field, the following aspects could be taken into consideration :

- a) Estimation of recuperable reserves and production projection.
- b) Calculation of the income obtained from the selling of oil of the field.
- c) The following amounts should be deducted from the selling price: costs of exploration, taxes, royalties and other expenses, and depreciation and amortization are added to the net income. And,
- d) If by adjusting the flow of effective against the effected investments, and by applying a discount rate between 10 and 15 o/o, the result is positive, this means that the field is commercially exploitable. If the result is negative, the discovered field is not economically attractive, at least considering the prices used for this calculation.

The rank of the discount rate is the minimum acceptable within the concept of cost of opportunity, to these, elements of political-social type could be included which will tend to decrease the preferential rate in the time period and the impact of inflation in the costs.

### **2.3.17 Production**

Once the commercial aspect of the discovered field is proved, the production stage is started, which comprises mainly the following aspects:

- a) Development of the fields
- b) Production
- c) Retribution to the Contractor
- d) Maintenance
- e) Complementary exploration
- f) State Control and Auditing, and
- g) Review of the fields and installations

### **2.3.18 Boundaries of the Areas**

During this period the areas are established with their respective boundaries in different percentages. Usually the companies revert 40 to 60 o/o of the received areas at the beginning of their activities and they concentrate their efforts in the development of discoveries.

### **2.3.19 Duration of the Production Period**

The exploitation period is variable and could last between 20 and 30 years, depending on the rhythm of production of the field. Usually the parties state 20 years as the reasonable time period for exploitation.

### **2.3.20 Investments**

During the development of the fields, important investments continue to be performed which depend on the characteristics of the areas, of the fields and of the decisions that the companies agree with the government institutions in charge of the project.

During this stage the best spacing criteria from well to well must be determined, as well as the installation of recollection lines, separators, pipelines, storing tanks, etc.

### **2.3.21 Regulation of Production**

To fix the production of the wells, the reservoir mechanism is previously established, the recuperable reserves are calculated and considering other technical characteristics, the best production rates are established, which are worldwide known by the abbreviation MER. On the other hand, the oil exploitation requires a very strict and efficient technical operations, as well as application of methods of secondary and tertiary recuperation with technologies each time more advanced and which results is the increase of final recuperation of the in-situ oil.

Since the oil exploration is developed around this aspect and also the duration of the fields is forecasted by means of it, it is fundamental for it to be part of the contract.

### **2.3.22 Maintenance of Oil Fields and Installations**

The exploitation of oil fields requires a careful maintenance that incides directly in the production. This also includes maintenance and conservation of the installations so that when the fields are reverted, such could be still efficiently used.

### **2.3.23 Additional Exploration**

During the production time, the exploration of the contracted area must be completed.

### **2.3.24 Retribution of the Contractor**

The activity developed by the Contractors implies various responsibilities and tasks such as financing of investments, acquisition and transportation of different types of equipment, material, sub-contracting of works and direction of operations. The retribution to the Contractor for these services is done by payment of the investments performed and the obtaining of a reasonable profit.

The retributions are paid with money or specie, according to the decision of each country.

The net profits, according to the criteria obtained from a good number of companies, fluctuate between 18 and 22 o/o, calculating the present value and efficiency of the risk contracts measured in terms in which the internal return rate must not overpass 25 o/o.

This working group of OLADE recommends that in the negotiations of the risk contracts, it should be tried to obtain the major part of the oil production for the State with the purpose of guaranteeing the supply and keeping in the part assigned to the contractor the obligation of effecting the re-adjustments, due to changes in prices of the international market, inflation indexes and supply of the internal market, always taking care of a constant conservation of the profit margin established at the signing of the contract.

In the negotiation of the mentioned retributions, the amount or assigned value must be based on simulation models and mathematical formulae. A well-know form established in the industry to determine retribution to the Contractor is to relate it to an Internal Return Rate which is satisfactorily accepted and which at the same time must be linked to the policy of rational exploitation of the fields.

Being aware of the national interests, the governments must take good care of the exploitation of their oil through the application of effective steps of rational exploitation and utilization of their hydrocarbon resources.

#### **2.3.25 Recovery of Investments**

The international companies when they discuss over the subject of Internal Return Rate try to recuperate their investments in the shortest possible time. They state that exploitation of the largest amount of oil should be carried on to abbreviate the time period for such recuperation and they also try to apply, as little as possible, the criteria of rational exploitation of hydrocarbons to avoid the additional amount of investments that such represent.

The time period for recovery of investments is fixed by each country in accordance to accounting regimes elaborated for this purpose. In general, amortization quotas that are intangible are fixed, the rates of depreciation of fixed assets and the forms of reimbursement could be per unit of production or, calculated in a direct line in relation to the years of useful life of the installations and equipment; and others that could combine indistinctly these procedures.

#### **2.3.26 Taxation**

Royalty is a fee in force in some countries which varies from 11 to 20 o/o and liquidation is done at the well site. The contractors pay royalties in money or specie. When payment is in money such is done according to the prices of the international market.

The percentage of the income tax applicable to the result of the operation varies from country to country. The most common criterion is that the Contractor must be subjected to the general taxation of the State.

Ecuador and Venezuela, through the established taxation, obtained a fiscal participation of around 90 o/o of the profits received by the contractors in the oil exportations.

In any case it must be emphasized that in order not to affect the agreed profits at the signing of the contract, all the aspects related to the in-force taxation, must be taken into consideration.

The determination of the economical aspects constitute the essential part of the contract, brings in the most complex negotiations and their results define the rules of the game which will make out of it a legal, stable and lasting instrument.

#### **2.3.27 State Auditing**

In relation to the technical and financial control, the State must pass from a simple spectator to a direct participant in taking the decisions, through the associated system, formation of mixt committes and especially, the parties must give attention to the accounting regime.

#### **2.3.28 Common Clauses**

These contracts also indicate the forms of inspection and auditing of the production; the utilization of gas, asphalt and other associated substances of hydrocarbons; the rules of confidential aspects; establishment of the system of unified exploitation to share common fields among various contractors; transportation and storage regulations; preference to utilize national materials; supply and internal market prices; personnel regulations; sub-contracting; facilities of public officers; utilization and conservation of assets; expropriation; servicing and indemnizations; construction of camps, roads, airports, bridges and other works; transfer of actions and rights; conservation of natural resources; protection to the workers; and, preservation of the environment.

The inclusion of the preceeding clauses are common to all contracts and must be carefully studied due to the importance they have for both parties.

#### **2.3.29 Jurisdiction, Arbitration and Sovereignty**

In all contracts the jurisdiction, the arbitration and form of termination, according to the laws and sovereignty of each country, are established.

### **2.3.30 Sanctions**

To sanction the un-fulfilment of duties and, according to the fault, the procedures of dissolution or expiration are applied.

### **2.3.21 Acquisition of assets and investments**

For the State to be able, in case it wishes so, to own its oil industry, the establishment of clauses for acquisition of assets must be foreseen.

### **2.3.32 Termination of the Contract**

In the termination of the contract it is considered the reversion of installations without any payment and if applicable, the concession of the extension.

### **2.3.33 Clearness, Precision and Easiness**

Contracts must be clear, precise, and easy to avoid interpretations that may affect the stability, seriousness and respect of the contracted duties and rights.

## **3. DESCRIPTION OF THE MAIN ECONOMIC ASPECTS OF THE CONTRACTS IN ARGENTINA, BRAZIL AND PERU**

3.1 With the purpose of extending the analysis of the economic aspects that are to be negotiated in the risk contracts signed for the exploration and exploitation of hydrocarbons, the Permanent Secretariat of OLADE considers important to present a description of the agreed formulae, to this respect, in Argentina, Brazil and Peru.

### **3.1.1 Argentina**

In this country the Contractor is forced to produce the maximum for delivery to YPF. This obligation is considered compatible whenever the development of production is performed according to the most rational techniques which correspond to the characteristics and magnitude of the reserves from each field.

YPF pays per each cubic meter of net production of crude oil the value that results from applying, to a quoted factor, an adjustment formula which includes the international price of oil of similar characteristics to the one produced, according to previously established publications: OPEC prices. the percentage of incidence is 30 o/o. This value is modified by the internal re-evaluation: Peso/Dollar and increased by the internal prices of the large sellers which reaches the remaining 70 o/o.

In regards to the taxation regime, the contractor is subject to taxation regulations of general application. It is foreseen the possibility that the contractor could -at the moment of formulating the offer- chose the alternative preferred for the payment of the income tax, according to the respective regulation.

YPF admits variations in the payments due to change of prices and taxation reforms that may occur after the bid is opened.

### 3.1.2. Brazil

For the risk contracts PETROBRAS includes the following:

a) The contractor that receives an area by means of an international bid, is forced to comply with a programme of exploration guaranteed by a banking letter of credit. In case no commercial discovery is attained, PETROBRAS is not obliged to pay the contractor.

b) If a commercial field is discovered, the contractor will carry on the development of it according to the best technical and economical plan agreed between both parties.

c) Once development is completed, PETROBRAS assumes the production operations on exclusive basis and will produce the field according to the MER (Maximum Efficient Rate).

d) PETROBRAS will pay quarterly the following:

- Reimbursements without interests of exploration and evaluation investments.
- Reimbursement of development investments, which will be calculated by adding an interest contracting rate equal to the prime rate of Bank of America plus 10/o.
- And,
- Remuneration, according to the formula:

$$RE = (Q_1 X_1 \text{ plus } Q_2 X_2 \text{ plus } Q_3 X_3) \cdot P$$

In this formula:

$Q_1$  = Proportional part of quaterly production between 0 and 600.000 m3.

$Q_2$  = Proportional part of quarterly production between 0 and 1'200.000 m3.

$Q_3$  = Proportional part of quarterly production over 1'200.000 m3.

$P$  = International price of oil corrected for the differences of freight and quality as it has been fixed quarterly by PETROBRAS.

$X_1, X_2$  and  $X_3$  Negotiation fractions of each contract.



e) It is also established that payments made by PETROBRAS will not exceed the net income per quarter.

Gross income =  $Q \times P$ , -  $W = Q_1$  plus  $Q_2$  plus  $Q_3$

Net income = Gross income - production costs

Production Costs Direct costs of operation plus overhead ( 15 o/o, of direct costs) plus royalties.

f) The foreign contractor will pay the income tax on the remuneration and the interest that he will receive at the moment PETROBRAS sends it abroad. The income tax rate in the majority of the cases is 25 o/o.

g) A field is considered as commercially exploitable when the total gross income is larger than the total exploration investments, plus total development investments, plus total interests, plus total remuneration, plus total costs of production.

h) The bid factors in order to qualify the offer are:

- Minimum investments and exploration programmes.
- Offered bonifications
- $X_1$ ,  $X_2$  and  $X_3$  (fractions of the offered production)
- Number of loans for reimbursement of exploration and development.
- Interest rate. And,
- Other benefits offered.

### 3.1.3 Peru

Situation before 1979: the contractors received a participation in specie corresponding to a percentage of the production established by the contract.

PETROPERU assumed the payment of the income tax, importation taxes over equipment and parts and exportation taxes over oil, which traditionally correspond to the contractor.

The rentals and royalties were paid by PETROPERU as owner of the area.

New dispositions starting 1979: the contractors will pay directly the income tax by delivery of an amount of oil equal to 40 o/o of the volume sold at the internal market or the exported volume. In the annual liquidation of the taxes, the differences occurred by these advanced payments will be deducted.

PETROPERU will pay, on behalf of the contractors, the importation taxes over capital assets and parts, and the exportation taxes. In Appendix 1 some additional points related to this subject are described.

#### **4. REGIONAL ADVISORY**

##### **4.1 Description of the Programme**

The Latin American Energy Organization will establish an advisory programme for the establishment of the risk contracts of the member countries, according to the present dispositions.

##### **4.2 Advising Sources**

4.2.1 OLADE, with the support from ARPEL, will form a regional advisory system for the establishment of contracts for hydrocarbons exploration and exploitation in the countries of the region.

4.2.2. The state enterprises will be the main advisory sources and in special cases, advisory from independent professionals will be requested.

4.2.3 The cooperation of the International Organizations in this field will be performed through OLADE, and in case this is done with similar organizations, through ARPEL.

##### **4.3 Cooperation Terms**

4.3.1 OLADE in agreement with ARPEL will coordinate the cooperation of the state enterprises which will appoint the technicians and professionals in charge of carrying on this advisory.

4.3.2 Expenses and salaries of the advisors will be paid at the beginning by the benefited countries.

4.3.3 Cooperation of other International Organizations will be channeled through OLADE.

##### **4.4 Procedures**

4.4.1 The procedures to establish the advisory to the governments or oil state enterprises will be related to what has already been established by OLADE and ARPEL.

4.4.2 The advisors will count with the frames of reference entrusted to them, will present a final report and will perform the evaluation of the results.

4.4.3 OLADE and ARPEL will carry on exchange programmes of experiences and training of the oil negotiators.

4.4.4 OLADE, together with ARPEL, will organize seminars on the risks contracting, will disseminate the results and will execute specific programmes that the interested countries may request.

4.4.5 For exchange of contracting information, ARPEL and OLADE will publish bulletins on the subject, will establish consultation sources and will prepare a system for dissemination of information on this subject.

#### 4.5 Recommendation of the Working Group

4.5.1 The Working Group convoked by the Permanent Secretariat of OLADE which meet in Quito from february 4 - 8, 1980, recommends and entrust the Permanent Secretariat the formation of an Advisory Group, for the risk contracting for exploration and exploitation of hydrocarbons in Latin America, taking in consideration the decision of the participants of this working group, of offering their collaboration to this respect.

### 5. CONCLUSIONS AND RECOMMENDATIONS

#### 5.1. Conclusions

5.1.1 The Working Group discussed the most important aspects on the subject and during the meetings was able to point out, quite precisely, the different forms of contracting already existing and to state the modifications that have been done within a tendency of improving, from the point of view of some countries, the conditions of the contracts, always keeping in mind the interests of the contractors.

5.1.2 Likewise, it was possible to identify that the most significant factor in the establishment of the central idea is the participation or remuneration that the contractor must receive.

5.1.3 Also it was considered the necessity of utilizing the experience and achievements attained by the state oil enterprises that integrate ARPEL. The convenience of establishing the coordination between OLADE and ARPEL was suggested, in order to attain this objective.

#### 5.2 Recommendations

5.2.1 Considering the importance and up-dating of the subject for the Member States of OLADE and the State Oil Enterprises it is recommended to impel a coordination plan between OLADE and ARPEL, with the purpose of improving the advisory on the subject, and securing the follow-up of the recommendations given by this Working Group.

5.2.2 To enrich the subject and disseminate experiences, it should be considered the convenience of holding seminars and working meetings periodically, and according to a calendar to be fixed by OLADE.

## **APPENDIXES**

1. General View of the in-force Contracting for exploration of oil in Latin America.
2. Data on sedimentary basins of some countries of the Region
3. Exploratory activities of the Latin American State Enterprises (ARPEL)

# APPENDIX I

## GENERAL VIEW OF THE IN-FORCE CONTRACTING FOR OIL EXPLORATION IN LATIN AMERICA

According to the available information, to this date the contracting situation in force for exploration and exploitation of hydrocarbons in Latin America is as follows:

No.	Country	Contractor
1	Argentina	Bridas - Sapic Total Exploration, Deminex and AR FRANCO; BRIDAS S.A.P.I.C. - Socma S.A. - Analruco S.A. - Petrolera; Apco Argentina Inc. Cospesa S.A. - Tecnicagua S.A. - Inalruco S.A. - Desaci S.A.C.I.; Shell Hydrocarbons B.V. - Petrolar S.A. - Shell C.A.P.S.A.; Esso Exploradora y Productora Arg. S.A. - Cía. Naviera Pérez Compac S.A.C.F.I.M.F.A. - Cadipsa S.A.; Astra Cía. Argentina de Petróleo; Esso Exploradora y Productora Arg. S.A. - Cía Naviera Pérez Compac S.A.C.F.I. M.F.A. - Cadipsa S.A. - Astra Cía Arg. de Petróleo S.A.; Pluspetrol S.A.; Technt S.A.C.I. - Cadipsa S.A.; Occidental de Arg. Inc. - Bridas S.A.P.I.C. - Union Texas (Arg.) Ltd. - Cía. Química S.A.; Alianza Petrolera Arg. S.A. - Alfredo Evangelista y Cía. S.A.C.I.C. - Quitral Co. S.A.I.C.
2	Bolivia	Occidental and Tesoro Petroleum.
3	Brazil	AGIP S.P.A. (ACS - 3); Allied Chemical Corporation, The British Petroleum Company Limited; CESP - Companhia Energética de Sao Paulo; Cities Service Company; Enserch Exploration Inc.; Exxon Corporation; Hispánica de Petróleos S.A. (HISPANOL); Hudson's Bay Oil and Gas Company Limited; Instituto de Pesquisas Tecnológicas do Estado de Sao Paulo S.A. IPT; Marathon Oil Company; Norcen Energy Resources Limited; Occidental Petroleum Corporation; Ocean Drilling & Exploration Company (ODECO); Penzoil Company; Shell Oil Company; Shell Petroleum N.V.; Societé National ELF - Aquitaine; Standard Oil Company of California.

4	Chile	Atlantic Richfield; Amerada Hess; and, Phillips.
5	Colombia	TEXACO and Romanois.
6	Ecuador	Consortium CEPE-TEXACO, City and YFP
7	Guatemala	Shenandoah; Getty Oil (Guatemala Inc.); Hispanoil, BRASPETRO and ELF - Aquitaine, Texaco and AMOCO.
8	Nicaragua	TEXACO and Amerada Hess; and, Bultes Oil and Gas of OAKLAND, Calif.
9	Panama	Panama Exploration Inc.; (TEXACO-Amerada); Sosa Petroleum S.A.; Isthmus Exploration Inc.; Balboa Exploration Inc.; Caribe Exploration Inc.; San Blas Exploration Inc.; Colon Exploration Inc..
10	Peru	Occidental; Belco; Bridas; Union; Teneco; Champlin.
11	Trinidad and Tobago	Trinidad-Tesoro Petroleum; and TEXACO - Trinidad Inc..

#### Contracting by Countries

The in-force forms of contracting in Latin America and other countries are available for whoever is interested in them, at the Permanent Secretariat of OLADE. The changes occurred during 1978 and 1979 are included in the appended document, referred to in point 1.3.

In Argentina the contract made with the first group of Companies was performed before the Law No. 21778 on Risk Contracts was created and the others were made under the new dispositions in the continental areas of "Picun Lenfu" (Neuquina Basin) and "Acambuco" (Northeast Basin); and offshore in the areas belonging to the Austral Basin of "Río Gallegos", "Magallanes", "Tierra de Fuego Este I", and "Tierra de Fuego II".

Presently new contracts are in their final negotiation stage which correspond to the inland areas of: "Nirihau" (Nirihau Basin), "Confluencia" (Neuquina Basin), "Malargue Sur" (Neuquina Basin), and "Aguada San Roque" (Neuquina Basin). The areas of "San Jorge Norte" and "San Jorge Centro" - Tapuera Coast - Basin of the Gulf of San Jorge according to the bidding time schedule. The opening of the first one is foreseen to be done by the end of March and the second one by the end of April. The corresponding bid basis are for sell since 1979.

In Bolivia the Congress of Representatives that met at the end of 1979 veto the Hydrocarbons Law formulated in 1972 and there is a proposal to cancel it. The in-force operation contracts with the companies Occidental and Tesoro are being reviewed.

Brazil, in addition to the direct programmes of PETROBRAS, has foreseen a broad exploratory programme through risk contracting. Up to this moment three bids have been carried on which originated 49 contracts. At the present moment the fourth bid is being planned and three more bids to be carried on in 1981, 1982 and 1983, which will cover exploration of all the basins that are not part of the activities of PETROBRAS.

The subsidiary of BRASPETRO has at the moment contracts with Irak, Algiers, Lybia, Guatemala and Angola and also participates in the seismic works of China.

BRASPETRO attained a big success in Irak where two giant fields were found MAJNOON and NAHR URM, presently being developed. Also in Algiers exists a field discovered by BRASPETRO which is under the production stage, in Ghott: MELRHIR.

In Chile, the results of the exploratory works performed by the contractors are going to be verified.

In Colombia the possibility of changing the contracting modality for similar forms of the Peruviam model, has been announced.

In Ecuador, due to the issue of the Hydrocarbons Law in 1971, the possibility of concession type contracts was eliminated and the existing contracts had to be modified. The Law of 1971 considered as contracting forms, the association, the rendering of services and the company of mixt economy. Later on, in 1978, the Hydrocarbons Law was modified with the incorporation of a new contracting form called "hydrocarbons operation" and presently the bases for this type of contracts are being prepared.

In Guatemala the contracting situation is as follows: With the Company Getty Oil an area of 1.760 Km<sup>2</sup>. is contracted for 25 years, the State participates of 56 o/o of the produced oil. With the company Hispánica de Petróleo S.A., an area of 1.740 Km<sup>2</sup>. is contracted for 25 years and the State participation reaches 58.15 o/o. All the former participations are minimum and since the contracts were recently signed, the results of a possible production of hydrocarbons are unknown.

There is a former contract with a group of companies formed by Shenandoah, Saya and Basic, under the concession type contract with participation of the State in 51 o/o of the oil. This group discovered the fields of Rubel Santo and Chinajá, which are already under commercial production.

In Guyana there is a contract with the Canadian Enterprise Home Oil which presently is performing the seismic works.

In Nicaragua is not known, as yet, the form that could be adopted.

Panama is trying to increase explorations through new risk contracts.

In Peru the last month of December 1979, some important aspects of their contracting form were changed. Among the most important are the following:

- a. It has been established that contractors will pay directly, in advance, and in specie the income taxes.
- b. In each contract a formula that will reduce the participation that the contractor receives in oil will be established. The formula will be related to prices of the world market.
- c. The contractor will be able to receive the retribution in cash or in specie.
- d. To explore and exploit certain areas, the state enterprise could form societies of participation with private enterprises.
- e. The contractor must revert to the state enterprise the fields that had discovered, whenever declared non-commercial.
- f. The state enterprise could take part in the contracts whenever the developing programmes of the fields are not correctly implemented, transforming the contract into a participation contract.
- g. The in-force contracts at the present time are negotiated according to the new principles established by the Peruvian government.

Trinidad and Tobago keep a contracting situation similar to the one in the past.

In Uruguay the contracts made have not had the expected success.

Mexico since the oil nationalization back in 1938, controls completely the development of the industry through Petróleos Mexicanos (PEMEX). It is the country with the largest oil potential of the region after having discovered important reserves that amount to 45 thousand million barrels as proved reserves and 42 thousand million more of probable reserves. Mexico has the Mexican Oil Institute which is an organization linked to PEMEX, fundamentally directed to develop proper technologies applicable to the media.

Venezuela, after nationalizing their hydrocarbons industry, keeps contracts of technological and commercial assistance with the former concessionary companies, within the terms that were substantially modified.



El Salvador has the aim of issuing a Hydrocarbons Law that will compile the modern contracting techniques that will regulate exploration, exploitation and other hydrocarbon activities. For this purpose, the country is training negotiating groups (lawyers, engineers, economists), through seminars, working groups, conferences, etc., with the cooperation of International Organization and some governments.

In Costa Rica, by means of a constitutional mandate, hydrocarbons were nationalized and there is no concessions granted to any private company.

Haiti, Cuba and other Caribbean countries have stated their interest in the risk contracts.

The Oil Corporation of Jamaica has prepared a model contract as guide of possible negotiations, and we know that the Dominican Republic has made about four contracts for exploration and exploitation of hydrocarbons.

In Belize and Puerto Rico an exploratory activity is being developed through a special risk contract.

## APPENDIX II

### DATA ON THE SEDIMENTARY BASINS OF SOME COUNTRIES OF THE REGION (I)

COLOMBIA	Sedimentary basin 716.000 Km <sup>2</sup> . Exploration degree 750 Km <sup>2</sup> per exploratory well. Area under association contracts: 10.000 Km <sup>2</sup> .
CHILE:	Basins 390.000 Km <sup>2</sup> . Area under risk contract 210.000 Km <sup>2</sup> . Sedimentary basins: 1'830.000 Km <sup>2</sup> . 45 o/o is considered to have good perspectives and only 10 o/o has been exploited intensively.
BRAZIL:	Basins: inland: 3'150.000 Km <sup>2</sup> ; offshore: 850.000 Km <sup>2</sup> . Exploration degree: 2.000 Km <sup>2</sup> per exploratory well. Areas under contract: 340.000 Km <sup>2</sup> . and the rest correspond to the direct exploration of PETROBRAS.
VENEZUELA:	Basins 490.000 Km <sup>2</sup> . Exploratory degree: 170.000 Km <sup>2</sup> . per exploratory well.
PERU:	Sedimentary basins: 600.000 Km <sup>2</sup> . of which 380.000 Km <sup>2</sup> . are still little explored. Areas under contracts: 25.000 Km <sup>2</sup> .
ARGENTINA:	Basin: 1'000.000 Km <sup>2</sup> . Under contract 70.000 Km <sup>2</sup> .
BOLIVIA:	Sedimentary basins: 460.000 Km <sup>2</sup> . Prospected areas: 30 o/o. Areas under contract 42.000 Km <sup>2</sup> .

1/ Information supplied by ARPEL.

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### **APPENDIX III**

#### **EXPLORATORY ACTIVITIES OF THE LATIN AMERICAN STATE ENTERPRISES (ARPEL)**

**(Transcription of part of the Speech by Dr. Fernando Mendoza, Secretary-General  
of ARPEL, at the Working Group "Terms of Reference for Advisory in the Establishment  
of the Hydrocarbons Exploration Contracting System" organized by OLADE**

## **PETROLEOS MEXICANOS-PEMEX-MEXICO**

Besides the extense work of oil prospection that embraces a good part of the Mexican territory from Chiapas, Tabasco and Bahía de Campeche in the Gulf of Mexico, up to Baja California, the Mexican enterprise has advanced in the necessary works to incorporate the Paleocanal de Chicontepec -after re-interpretation of the existing information on it- as a new producing area of the country, and initiated the drilling of 16.000 wells in the coming 10 years, which although they have low productivity (100-200 b/d) represent a drilling effort similar to the development carried on in Mexico since 1938 up to this date.

The exploratory activity in Bahía de Campeche is developed by 15 platforms of different types, which were in operation at the end of 1978.

Also, we should mention as another important area that is under intense exploration, the zone of Nuevo León and Coahuila, where the gas discoveries permit to expect productions of around 160 millions of cubic feet per day.

## **PETROLEOS DE VENEZUELA - PDVSA - VENEZUELA**

This enterprise develops exploratory and advanced works in three main areas:

- In adjacent zones to the assigned areas.
- In the oil belt of Orinoco
- In the continental platform.

The guidelines of this ambitious exploratory programme are found in the so called "Master Plan of Exploration", with investments that reach over 1.000 million Dollars for the coming four years and which goals are, at short term, to increase the reserves and raise the potential of the production to 2,8 millions of barrels per day.

In this sense, the mentioned Master Plan comprises the deep exploratory drilling (over 4.000 m.) in the first one of the mentioned areas, the start of operation of conventional projects of primary production for the second area through the drilling of 75 wells in 1979, and the initiation of the offshore works where three of the filial companies of PDVSA have discovered new oil and gas fields.

## **EMPRESA COLOMBIANA DE PETROLEOS - ECOPETROL - COLOMBIA**

The interest of the Colombian state enterprise in the search for oil is reflected not only in the number of exploratory wells that have been drilled, but in the considerable increase of the investments in the last three years, notwithstanding the increase experimented in the average cost per well (US\$ 1 MM in 1976 to 4,5 in 1979).

The total investment (private plus public) reaches US\$ 123MM for 1979 (102 plus 21) with over 15 wells drilled, some of which will reach deep objectives. According to the annual report of ECOPETROL, the preliminary evaluation permits to have some hopes of finding a significant discovery in the immediate future.

#### **CORPORACION ESTATAL PETROLERA ECUATORIANA -CEPE - ECUADOR**

The search for new reserves in Ecuador has been centered in the East and the Peninsula of Santa Elena through a campaign of seismic reconnaissance and drilling of exploratory wells. The activities are carried on through the Corporación Estatal Petrolera Ecuatoriana (CEPE), the consortium that the latter has with TEXACO and the Association contracts with City and YPF.

The exploratory plan has called for an investment of around US\$ 15 millions.

Considering the necessity of having large hydrocarbon reserves, the exploratory activity is being reactivated, and it is therefore foreseen, for the immediate future, a campaign in the North-East region of the country as well as in the inland coast and offshore, besides investigating the hydrocarbons potential at deeper geological levels.

#### **PETROLEOS DEL PERU - PETROPERU - PERU**

The successful results that are presently being obtained in Peru reached a production of about 200 thousand barrels per day, which are consequence of an extense and costly exploratory programme that started back in 1970 and its success was only attained by some operations in the Amazon basin of PETROPERU and Occidental, respectively.

But, being aware of the necessity of intensifying and continuing with the exploratory works, PETROPERU negotiated new areas in the inland part, as well as, offshore where Occidental has invested US\$ 500 MM in Zone 1-A in the Amazon Jungle, where 9 fields were discovered through the drilling of 52 wells, also having it planned the drilling of two exploratory wells and 16 developing wells in 1979.

The contracts for the offshore zones are operated by BELCO who produces, by account of PETROPERU, around 30 thousand b/d in the Zone Z-2, and also the exploration of Zone Z-1 was advanced on, where a gas discovery was found, (6.6 MMcf/d), and a decision has been taken to drill 12 more wells in the offshore zone.

The future plans of this Enterprise call for a new investment of about US\$ 150 millions in the coming 3 years.

Likewise, and as an answer to the successful results obtained in Peru, various British companies, North-American companies and Argentinian companies are in a process of obtaining contracts for exploration and exploitation of possible fields in the Peruvian Jungle, as well as in the North and Northeast part of the country.

## **YACIMIENTOS PETROLIFEROS FISCALES BOLIVIANOS - YPFB - BOLIVIA**

In Bolivia, due to the decrease of the oil production, the activities of YPFB seem to be guided towards the utilization of the gas in a large scale with the purpose of reducing the use of oil as an energy source; therefore, we should remember that in Bolivia oil constitutes 80 o/o of the consumed energy in front of 55 o/o of the rest of Latin America. Nevertheless, the Bolivian State Enterprise as well as the contractors Occidental, Amoco and Tesoro, continue their exploration works and exploratory drilling, according to the risk contracts signed, YPF to operate in the region of Chaco-Beni, Amoco in the Northwest region of the country and Tesoro in the zone of La Vertiente.

YPFB will drill 12 exploratory wells, while its geological and seismic teams will explore the most promising areas of the country. Investments of about 40 MM\$ are estimated for this activity.

## **EMPRESA NACIONAL DEL PETROLEO -ENAP-CHILE**

In Chile the search for new hydrocarbon reserves is also directed towards the exploration of areas and objectives of more difficult and costly operation.

In Magallanes, so far the only producing zone, the exploratory activity has been centered in the part of the basin covered by the waters of the Magallanes Strait and towards the reconnaissance of the deep cretaceous (over 3.500 m.) and of the tertiary basin.

In the Strait, ENAP will soon have three drilling equipments in activity in an operation that has called the attention of everyone concerned due to the efficiency and good results that are permitting ENAP to raise its production by 30 o/o in regards to 1978, increase that in Latin American is only shown by countries like Peru and Mexico.

In the offshore zone, ENAP has chosen, as many other Latin American countries, the system of operating contracts and they have already granted two areas in the offshore part of the South Pacific, which are presently under exploratory works performed by the operating companies.

On the other hand, ENAP, with its own resources is exploring the zone of the central and South part of the country with very hopeful results that give good perspectives to the area.

The broad exploratory plan started by ENAP represents an investment that will probably be over US\$ 50 millions by 1980, to this it should be added the effort that the companies under operating contracts will perform.

In the field of natural gas, ENAP is also implementing a broad programme of utilization and industrialization of its important reserves, through the Plants for Liquifying Natural Gas and Methanol.

## **YACIMIENTOS PETROLIFEROS FISCALES SOCIEDAD DEL ESTADO - YPFSE -ARGENTINA**

The main goal of the Administration of this Member Enterprise has been the intensification and re-start of the exploratory works in the Republic of Argentina, in the inland zone as well as offshore.

In this sense, in 1978 close to 12 thousand Kms. of inland seismic lines and 7.000 Kms. of maritime lines were covered, and 75 exploratory wells were forecasted, 73 inland and 2 offshore. Also, YPF initiated works in Ecuador through an Association Contract with CEPE, and for the signature of such contract, the aims of ARPEL for Latin American oil integration were taken into consideration.

For the development of its exploratory works, as well as the development of the fields, YPF has used in some cases the Risk Contract model, especially for the marine operations. SHELL, for instance has obtained a contract to explore the marine areas of Rio Gallegos and Magallanes and, in August 1979, the marine areas of Tierra de Fuego I and II were bidden.

Likewise, since the beginning of 1979 geological and geophysical studies are being performed in the South Marine Basin, with intentions of drilling in April 1980. These works are being performed by a group formed by Empresas Total, Deminex and Bidas and Arfranco (Argentina).

## **ADMINISTRACION NACIONAL DE COMBUSTIBLES, ALCOHOL Y PORTLAND - ANCAP - URUGUAY**

The Uruguayan state enterprise has continued, with advisory from YPF - Argentina, the oil exploration works in various zones of the country, San Bautista, El Tala and Santa Lucía, without obtaining major results. Likewise, they are continuing with the interpretation work of the loggings of the offshore drillings performed by Chevron in the past years, hoping for new operations once the results from the interpretation are obtained.

## **PETROLEO BRASILEIRO S.A. - PETROBRAS - BRAZIL**

The Latin American country that more intensily has been working on the oil exploration in Brazil. It is estimated that 5 o/o of the total oil drilling equipment existing in the world, is operating in Brazil. As a result of this, in the last 3 to 4 years, very important discoveries have been found in the zones that go from the Amazon Delta down to the Basin of Campos. The most important discoveries so far have been performed at the Basin of Campos, and something over 400 MMB have been incorporated to the reserves, which has permitted to duplicate the production of those marine fields.

An important factor of these developments has been the Risk Contracts, which have been formulated according to their own model.

The first 17 contracts signed until the first quarter of 1979 implied a joint minimum investment of 212 MM\$ and besides this, it was guaranteed the drilling of 39 exploratory wells and the survey of 26 thousand Kms. of seismic lines.

At the end of 1978 another bid was called, in which were included the areas of the inland basins, qualifying 32 companies out of which 22 were accepted to present the offers.

On their part, PETROBRAS has invested, since July 1979, about 27 MMS in the drilling of 7 wells located through the area that goes from the Amazon Basin to San Tomé Cape, offshore Río de Janeiro.



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