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UKRAINE: DEVELOPMENT OF GAS RESOURCES

***ATTRACTING PRIVATE INVESTMENT THROUGH
PRODUCTION SHARING AGREEMENTS***

***BEST GOVERNMENT PRACTICES THAT, BESIDES GEOLOGY, ARE
CONDUCTIVE TO INTEREST FROM INTERNATIONAL OIL
COMPANIES (IOCs)***

A PRIMER



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I. EXECUTIVE SUMMARY

It is critically important for Ukraine to increase its energy independence, and, in particular, to develop natural gas production in order to replace imports.

Developing the production of Ukraine's natural gas (*conventional and unconventional*) will require significant investment as well as considerable technology. Therefore, in addition to the exploration and production (E&P) efforts of Ukrainian companies, it is important for Ukraine that foreign energy companies (FEC) also invest in E&P for gas in the country.

Whenever they consider investing in a country for E&P of oil and/or gas, FEC take into consideration two types of risks: the "below ground risk", and the "above ground risk". The "below ground risk" has to do with the geology (*amount of reserves; complexity of extraction*); the "above ground risk" has to do with practices of the host government that are not consistent with the clarity, certainty, and consistency, that FEC seek in order to invest in E&P in a country. The higher FEC will consider Ukraine's "below ground risk" to be when comparing an investment in Ukraine to an investment in another country, the more critical it will be that the "above ground risk" be limited. This is particularly important at a time when, because of the fall in the price of hydrocarbons, FEC are retrenching on their overseas investments.

With its law on Production Sharing Agreement (PSA), and its subsequent amendments, Ukraine has already taken significant steps towards creating the type of legislative and fiscal environment that FEC look for when investing in a country. In order to help Ukraine complete this process, a summary of best practices that FEC look for in a PSA and, in particular, in a gas PSA, was prepared.

To do so, CLDP (1) contacted seven experts in the summer of 2015. Prior to contacting these experts, CLDP, in December 2014, had conducted a PSA assessment in Kyiv and had met, there, with several FEC, some of which had entered into PSAs.

(1) The Commercial Law Development Program (CLDP) is the technical assistance of the US Department of Commerce. Since the 1990s, when it helped Russia draft its subsoil law, CLDP has been providing technical assistance in Energy Law to many countries.

Eager to assist Ukraine at this critical juncture, the seven experts, each of whom has considerable experience working on PSAs in several countries, provided comments on the factors that, in the past 40 years, have accounted for the success or the failure of PSAs around the world.

These comments were aggregated and are presented in this primer as practical recommendations for Best Practices, in order to contribute to the debate going on in Ukraine on ways to attract foreign investment into E&P for gas.

Three main conclusions can be drawn from a comparison between the current situation in Ukraine and the Best Practices:

- Several of the Best Practices have already been implemented in Ukraine. Some were introduced by the PSA law of 1999 or by subsequent amendments (e.g., *stabilization clause; freedom to convert revenues into foreign currencies and to repatriate such currencies; whenever there are Domestic Market Supply Obligations (DMO), the selling price of DMO is not lower than international market price....*). Other Best Practices are possible under PSA terms as specified by the law (e.g., *the reference, in PSA contracts, to international arbitration as the dispute resolution mechanism, or the waiver of sovereign immunity*).

- The amendment process that has taken place since the enactment of the September 1999 Law on PSAs, has been effective; it is likely, therefore, that the few

amendments that remain to be enacted to complete the harmonization between PSA provisions and other regulations, could be enacted in due time.

- Two central issues remain: the need to streamline the permitting/licensing process for PSAs; the lack of coordination between the different authorities, national and provincial, that must implement regulations related to PSAs. This lack of coordination is compounded by the fact that, often, these authorities interpret differently the same regulation.

Therefore, if Ukraine were to adopt an effective “one-stop shop approach” to permitting/ licensing and to ensure inter-governmental coordination, it would lower the “above ground risk” for FEC that consider entering into PSAs.

In the absence of such “one-stop shop” approach, it is essential, if Ukraine wants to lower this risk for FEC , that one executive entity have the political and administrative authority needed to ensure streamlining of the permitting/ licensing process, as well as effective intergovernmental coordination.

II. OBJECTIVE OF THE PRIMER AND METHODOLOGY

A. OBJECTIVE

The purpose of this primer, which is supported by the U.S. Department of State's Bureau of Energy Resources (ENR), is to highlight Production Sharing Agreement (PSA) best practices that, besides geology, have accounted for the success of PSAs around the world.

It is critically important for Ukraine to increase its energy independence, and, in particular, to develop natural gas production in order to replace imports. Developing the production of Ukraine's natural gas (*conventional and unconventional*) will require significant investment as well as considerable technology. Therefore, in addition to the exploration and production (E&P) efforts of Ukrainian companies, it is important for Ukraine that foreign energy companies (FEC) also invest in E&P for gas in the country.

The Rada (Ukraine's Parliament) has enacted a key law and several amendments that create a legislative framework for a type of agreement that is favored by FEC when investing in a foreign country: The Production Sharing Agreement (PSA). The key legislative milestones in the creation of the PSA framework are presented in table I on the following page. While further adjustments are necessary to harmonize dispositions of the PSA regime with those of other laws and regulations, Ukraine has, with its PSA, a legal instrument that may be of interest to FEC.

The present primer was created to assist Ukraine in its effort to create a legislative, regulatory, and administrative environment conducive to investment by FEC in E&P for gas.

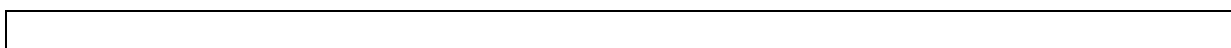


TABLE I: UKRAINE's PSA: LEGISLATIVE MILESTONES

September 14, 1999: Law "On Production Sharing Agreements"

Based on generally accepted international standards at the time, it aimed to create a modern and investor-friendly framework.

June 17, 2011: Law "On Amendments to Law of Ukraine "On Production-Sharing Agreements" regarding state guaranties"

It added to the PSA regime a “Stabilization Clause”. Under this clause the State guaranteed that the investor's rights and obligations under the PSA would be governed during its term by legislation effective at the time the PSA was entered into. (Unless legislative changes more favorable for the investors were subsequently made).

October 02 2012: Law "On Amendments to Selected Legislative Acts of Ukraine Concerning Execution of Production Sharing Agreements"

It introduced a number of important amendments into the PSA Law and a few other laws, including:

- The possibility of conversion of existing Subsoil License into PSAs.
- A Waiver of Sovereign Immunity by the State in case of State/Investor disputes
- Adding Unconventional Hydrocarbons to the list of natural resources eligible for PSAs.
- Strengthening Regulatory Obligations of the State to the investor.
- Exempting PSAs from Gas Export Restrictions
- Exempting PSAs from Various Currency Control Restrictions

June 18, 2013: Law "On Amendments to the Law of Ukraine "On Production-Sharing Agreements" Concerning the State Regulation of the Conclusion and Performance of the Agreements

- It restored the PSA Interagency Commission, which had been abolished as of December 2012.

Source: The present table, drafted by CLDP, is based on very comprehensive and detailed documents prepared by the RULG-Ukrainian Legal Group, P.A. These documents have also been used in other parts of the primer. Ms. Irina Paliashvili is the founder, President and Senior Counsel of the RULG-Ukrainian Legal Group. (irinap@rulg.com).

CLDP is solely responsible for any inaccuracy in this table.

B/ METHODOLOGY

Hundreds of PSAs have been signed around the world since 1966, when Indonesia starting using this type of agreement. The duration of typical PSAs is between 20 and 30 years. Therefore, in 2015, there are many PSAs that have run their course. Consequently, it is possible to draw conclusions on the factors that, besides geology, account for PSAs that have been successful, that it to say for PSAs by the end of which:

- The objectives set by the Host Government, when it entered into the PSA, have been achieved.

and,

- The objectives set by the FEC, when it entered into the PSA, have been achieved as well.

In order to draw such conclusions, CLDP contacted seven current or past practitioners. All seven are knowledgeable about PSAs around the world; all have at least 25 years of experience. CLDP asked them, based upon this experience, which factors, besides geology, accounted for the success or the failure of PSAs they had experience with.

Eager to assist Ukraine at this critical juncture for its energy independence, these experts graciously provided significant input. The parts of their contributions that are most relevant for the present primer were merged and combined with lessons learned in the field by CLDP's Energy Law team. The resulting PSA "best practices" are

presented in part IV of the present document, after a brief overview of PSAs in general, in part III.

CLDP expresses its gratitude to the experts who provided input. (*Please see table II on the following page*).

CLDP is solely responsible for any inaccuracy or flaw in the present document.

BEST PSA PRACTICES AROUND THE WORLD

TABLE II: EXPERTS WHO PROVIDED INPUT

- Professor Owen Anderson, Oklahoma University, Eugene Kuntz Chair of Law in Oil, Gas and Natural Resources, Director of the John B. Turner LL.M. Program in Energy, Natural Resources & Indigenous Peoples Law

- Professor Lynn Bortka, University of Houston, Petroleum Engineer, Former Senior Counsel at BP

- Professor John Lowe, Southern Methodist University, George W. Hutchison Professor of Energy Law and Senior Associate Dean for Academic Affairs

- Dan McFadyen, University of Calgary, Engineer, Director of the Extractive Resource Governance Program, former Chair of Alberta's Energy Resources Conservation Board

- Professor Norman Nadorff, University of Houston, former Senior Counsel at BP

- Professor Roberto-Rios, Partner Appleton Luff Law Firm, WTI, former Senior Counsel at Grupo PROTEXA

- Professor Harry Sullivan, SMU and Texas A&M Law School, former Senior Counsel at ConocoPhillips and Chief Counsel-International at ARCO (now BP)

III. PRODUCTION SHARING AGREEMENTS (PSAs): A CURSORY OVERVIEW

A. Prevalence and key characteristics of PSAs

PSAs are the most common type of agreements between countries and FEC

All nations own the rights to the hydrocarbons located in the subsoil of their maritime domains (*offshore subsoil*). In most countries, the rights to the hydrocarbons located on-shore belong to the state. Even in countries where individuals can have such rights over the subsoil of land they own (*e.g., the USA*), the state owns very large tracts of land and owns the rights to the hydrocarbons located in the subsoil of these tracts of land.

As a result, since the beginning of the 20th century, countries have entered into agreements with foreign energy companies (FEC) that could provide investment capital and technology to explore for, and produce, oil and/or gas. (*These agreements are called in English “granting instruments”*). These agreements can be of four main types: Concessions, Production Sharing Agreements/Production Sharing Contracts (PSA/PSC) , Service Contracts, Joint-Ventures.

Around the world, PSAs are the most prevalent type of agreement between countries and FECs for hydrocarbons E&P.

A landmark study conducted in 1999 (1) concluded that, between 1966 and 1998, 268 PSAs had been signed by 74 countries. Since then, many more PSAs have been signed

Under PSAs, countries, while retaining ownership of their hydrocarbons, provide incentives for FECs to invest in E&P and take significant risks

A production sharing agreement (PSA) is a contract between a country and a FEC. Under this contract, the country grants to the FEC the right to conduct E&P activities in a delimited area and for a limited time. The FEC bears all the costs and the risks associated with the corresponding E&P activities. All of the hydrocarbons produced belong to the country.

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(1) Production-Sharing Agreements: An Economic Analysis; author: Ms. Kirsten Bindemann; published by the Oxford Institute for Energy Studies

In consideration for the FEC's investment and activities, the country agrees that, if there is production of hydrocarbons:

- The FEC will receive some of this production, of a value equal to the costs that the FEC has incurred, so that the FEC may “recover” these costs.
- The FEC will also receive a share of the volume of hydrocarbons produced beyond what will have been used to cover the FEC’s costs.

The part of production that the FEC receives to cover its costs is called “cost oil” or “cost gas” depending on what is produced.

The part of production shared between the country and the FEC is called “profit oil” or “profit gas” depending on what is produced.

The FEC, as an entity operating in the country is subject to taxes on its net income accrued in the country.

Once operations start, many years can pass before there is production. As most host countries need revenues, FEC usually pay bonuses to the host countries, usually at the time of the signing of the PSA and at key milestones thereafter.

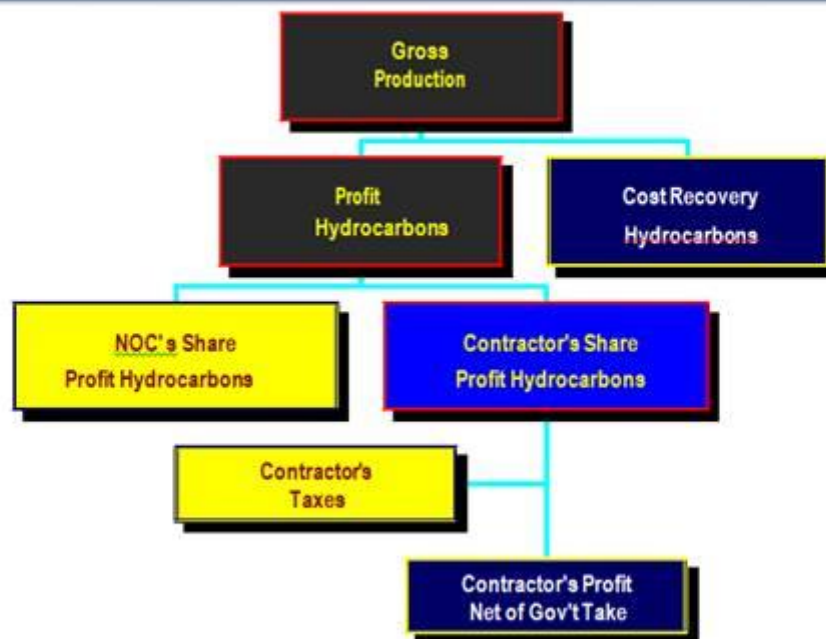
At the end of operations, all the installations created by the FEC and all the equipment used by the FEC for operations are transferred to the host country.

The table on the next page, excerpted from a remarkable presentation provided by Professor Owen Anderson, one of the experts who provided input for the best practice document, illustrates graphically the sharing of production under PSAs/Production Sharing Contracts (PSC) . (*The contractor is the FEC*) (2).

(2) A detailed analysis of PSAs can be found in: “How to scrutinize a

Production Sharing Agreement A guide for the oil and gas sector based on experience from the Caspian Region”, published by the International Institute for Environment and Development

PSC



Source: Presentation provided by Professor Owen Anderson

The reasons why PSAs are now the prevalent form of “Granting Instrument” are the following:

- Concessions were the prevalent form of granting instrument until the mid-1960s. Under a concession regime, the FEC that was awarded the concession (*the concessionaire*) pays royalties to the Host Government (HG) but the hydrocarbons produced belong to the concessionaire and not to the HG. Starting in the 1960s, several countries deemed this model to be incompatible with sovereignty and with ownership, by the state, of subsoil resources. For these reasons, in 1966, Indonesia adopted the first PSA and, since then, concessions are no longer prevalent.
- A few countries, Iraq for instance, have entered in service contracts or risk service contracts. Under these contracts, the FEC conducts E&P at its own risk and with its own funding, recovers its costs, and receives a set remuneration per barrel of oil (*or, for gas, of oil equivalent*) produced. These services contracts have not provided incentives for many FEC to invest in E&P for new fields, because the remuneration they provide is not commensurate with the risks taken by the FEC. As a result, some countries that adopted a service contract model, as a granting instrument, are now trying to modify this model to make it more conducive to FEC investment.
- Few joint-ventures have taken place and fewer have been successful, because of the often significant differences between the respective safety, technological, and decision-making, cultures of the Host Government joint-venture partner and of the FEC partner.

B. Risks and Risk Mitigation under PSAs

The tables on the following pages show the respective key risks taken by the parties to a PSA and the corresponding factors that can help mitigate these risks (*risks mitigants*). It shows that host governments have a significant measure of control on the risks it incurs, through a thorough pre-qualification or selection process. FEC, on the other hand, invest very large sums and have far less control on the risks that they incur.

	HOST GOVERNMENT	FEC
Objectives	<ul style="list-style-type: none"> - Development of national production of hydrocarbons in order to decrease the reliance on energy imports. - Generation of revenues for the national budget through exports of hydrocarbons. - National/local economic development through local infrastructure financing by FEC, local hiring and local purchasing. - Enhancement of the capacity of a national hydrocarbons company through training, joint operations, and technology transfer. 	<ul style="list-style-type: none"> - Adequate return on investment - Access to reserves
Key risks during the exploration phase, and risk mitigants	<p>Risk: The FEC selected does not have the expertise or the resources (technology, finances..) required to conduct properly the exploration phase.</p> <p>Risk mitigant: The quality of the pre-</p>	<p>Risk: Disappointing geology; fewer reserves than expected and/or reserves harder to extract than thought.</p> <p>Risk mitigant: Quality of the seismic and other geological data made available by the HG</p>

	<p><i>qualification process or of the selection process.</i></p>	<p><i>during the bidding phase.</i></p> <p>Risk: Complex and protracted licensing and permitting process</p> <p>lengthening the duration of the exploration phase and delaying the beginning of the production phase.</p> <p>Risk mitigant: <i>“One-stop shop” or, at least, agency with full political and administrative authority, ensuring streamlining of licensing/permitting.</i></p> <p>Risk: Non-consistency, lack of coordination between different HG agencies that implement regulations.</p> <p>Risk mitigant: <i>“One-stop shop” or, at least, agency with full political and administrative authority, ensuring inter-agency coordination.</i></p> <p>Risk: Unwarranted challenge, by HG, of</p>
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		<p>technical initiatives taken by FEC to carry out the exploration plan.</p> <p><i>Risk mitigant:</i> <i>Monitoring by technically competent HG entity.</i></p> <p>Risk: Unwarranted challenge, by HG, of nature/amount of costs to be recovered.</p> <p><i>Risk mitigant:</i> <i>Review and approval by technically competent HG entity.</i></p>
<p>Key risks during the production phase, and risk mitigants</p>	<p>Risk: The FEC selected does not have the expertise or the resources (technology, finances..) required to conduct properly the production phase.</p> <p><i>Risk mitigant:</i> <i>The quality of the pre-qualification process or of the selection process.</i></p>	<p><i>Risk:</i> <i>Changes in fiscal regime</i></p> <p><i>Risk mitigant:</i> <i>Stabilization clause.</i></p> <p>Risk: Complex and protracted licensing and permitting process for production operations lengthening the duration of the production phase and delaying the beginning of commercialization.</p>

		<p><i>Risk mitigant:</i> “One-stop shop” or, at least, agency with full political and administrative authority, ensuring streamlining of licensing/permitting.</p> <p>Risk: Complex and protracted licensing and permitting process</p> <p>for infrastructure/ transportation lengthening the duration of the production phase and delaying the beginning of commercialization.</p> <p><i>Risk mitigant:</i> “One-stop shop” or, at least, agency with full political and administrative authority, ensuring streamlining of licensing/permitting.</p> <p>Risk: Non-consistency, lack of coordination between different HG agencies that implement regulations.</p>
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		<p><i>Risk mitigant:</i> “One-stop shop” or, at least, agency with full political and administrative authority, ensuring inter-agency coordination.</p> <p>Risk: Unwarranted challenge, by HG, of technical initiatives taken by FEC to carry out the production plan.</p> <p><i>Risk mitigant:</i> <i>Monitoring by technically competent HG entity.</i></p> <p>Risk: Unwarranted challenge, by HG, of nature/amount of costs to be recovered.</p> <p><i>Risk mitigant:</i> <i>Review and approval by technically competent HG entity.</i></p> <p>Risk: fall in world’s hydrocarbon prices.</p>
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	<p>Risk: Fall in world's hydrocarbon prices, if export of hydrocarbons is a key objective.</p> <p><i>Risk mitigant: ?</i></p>	<p><i>Risk mitigant: ?</i></p>
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IV. KEY FACTORS OF SUCCESS OF PSAs, BESIDES GEOLOGY (BEST PRACTICES)

A. Core Principles

1/ Clarity, Certainty, Consistency

Foreign Energy Companies (FEC) investing in another country, whether these FEC are state-owned companies (*National Oil/Gas Companies: NOC*) or privately-owned companies (*International Oil/Gas Companies: IOC*) are willing to take certain geology risks and technology risks (“below-ground” risk). They are also willing to take risks associated with the fluctuations of international hydrocarbons prices.

They recognize that international investment also includes “above-ground risk”, such as the risk of arbitrary decisions by Host Governments (HG), political risks, or corruption risks.

FEC seek to quantify and mitigate these “above ground” risks. A FEC’s decision to invest in a foreign country is the result of an analysis of “below-ground” risk and “above-ground” risk. Where “below-ground” risk is low (*plentiful and easily extractable reserves of hydrocarbons*), a FEC is willing to accept greater “above-ground risk” (*e.g., Kurdistan and Iraq*).

However, where “below-ground” risk is higher (*e.g., uncertain reserves or complex geology*), it is important for a host country to minimize “above-ground” risk to attract FEC investments. In order to do so clarity, certainty, and consistency are key.

Clarity: The Basis for Predictability and Transparency

Predictability

The terms of PSAs must be sufficiently clear and comprehensive to make it possible, for FEC considering bidding, to create a financial model of the PSA and, based upon geological data and hydrocarbons price assumptions, to estimate the return of a potential investment in the host country. This rate of return must be acceptable to a FEC. (*Expected rates of return depend on several factors such as the FEC’s cost of capital. Median values for the expected rates of return are in the 15-18% range*). However, even when acceptable, the rate of return that an FEC expects to get for investing in E&P in a country is compared with potential rates of returns of E&P investment opportunities open to the FEC in other countries.

To ensure clarity, for any bid round, there must be only one type of PSA governing the legal relationship between the HG and the FEC whose bids will be selected.
(*Having this PSA available in the English language is important*).

Transparency

FEC attach great importance to transparency. They accept that some decisions will be close calls; they want to know *why* HGs make the decisions they do and need to be assured that they are being treated the same as everyone else.

In this regard, anti-corruption commitments are important for a FEC.

Certainty

As was mentioned in the first part of the present primer, the duration of typical PSAs is 20 to 25 years, so as to match the duration of the exploration and production cycle. Therefore, because change happens over time, it is critical for FEC to have the certainty that the fiscal regime (*taxation, customs duties...*) that will be applied during the entire term of the PSA is no worse than the fiscal regime that prevailed when the FEC bid on the RFP and entered into the PSA.

A stabilization clause is the approach preferred by FEC to obtain such certainty. While they recognize that host governments have a sovereign right to pass laws and regulations, FEC need certainty about fiscal regimes in order to invest the considerable amounts required for E&P. Modern stabilization clauses often include exceptions for regulations regarding health, safety, and the environment, which are fast changing areas of public concern in today's world. However, it is critical that the regulatory framework not be allowed to change in any way that could make the terms of the PSA inapplicable.

By the same token, there should be minimal HG rights to terminate or rescind the PSA.

Consistency

In most countries, several agencies, some national, some provincial, play a role in the licensing/permitting process, and are often called upon to interpret regulations. It is critical that all these agencies be consistent in their decisions and interpretations and that they coordinate their decisions so as to minimize delays.

2/ Alignment of Equities

A PSA should, to the extent possible, align the equities of the HG and of the FEC whose bid was selected. The most effective way to do so is to ensure that most of the

benefits for the HG from the PSA result from the HG taking a share of production, rather than from the accumulation of bonuses, royalties, contribution to special funds, and taxes.

B. Best Practices

1/ Tendering, selection, and award process

Transparency

Transparency in the tendering, selection, and award process is critical if a country is seeking foreign investment in E&P.

A competitive bid process must be organized and publicized (*local and international press*). It is advisable to use, in addition to the local language, an English version of the bid (*qualifying criteria, and other conditions*). Many recent bid rounds have used the internet for data rooms and other components of the process. In some countries, the opening of bids and the selection process was televised to ensure transparency.

Selective tendering by invitation can also be used but needs to be as transparent as possible. It is acceptable that, besides the blocks being offered for bids, FEC may express an interest to an HG in having a block offered for auction. The HG would then decide whether it wishes to post this block and then hold an open and transparent auction.

To ensure transparency, it is useful to publish the results immediately.

Conditions for Bidding

The conditions that FEC must meet to bid on RFPs should be reasonable and commensurate with the hydrocarbons reserves in the blocks offered. HG with important hydrocarbons reserves have recently experienced disappointing bid rounds for PSAs because the undisclosed minimum share of production acceptable to the HG were too high, or because the amounts required from the FEC as financial guarantee for the PSAs were unreasonably high.

In addition to the major FEC, there are many smaller FEC, often run by former executives of major FEC who have chosen to leave the strictures of the large FEC for the nimble operations of smaller companies. For onshore projects, these smaller companies often have the skills and technology of larger FEC. For onshore projects, it is in HG' interest that the conditions for bidding, or even the price charged for access to data rooms, not exclude smaller FEC.

2/ Flexibility to Monetize Production

FEC want to be able to reap the benefits of their risk-taking, technology, work, and investment, by selling their share of production at market rates. Therefore, in PSAs there should be limited domestic-market supply obligations (DMO) and a stipulation that HG will pay world-market rates in hard currencies for the hydrocarbons delivered by the FEC under these DMO. PSAs should also include the right to repatriate funds, and currency exchange commitments.

FEC must not be compelled to sell their share of production to only one buyer (*monopoly*) unless the sale is at a transparent world-market price.

It is desirable to include clear provisions regarding the treatment of sudden and significant changes in international prices for oil & gas. It is helpful to include in the PSAs low-price protections for the investor and high-price protections for the state. Today, many PSAs have adjustment mechanisms built into their fiscal terms. Examples are "R" factors, or sliding scale royalties tied to price changes.

3/ Legal and Regulatory Environment

It is essential that all potential conflicts between the terms of the PSA and the HG's laws and regulations be resolved before FECs are invited to bid on blocks under a PSA.

It is important that there be close coordination between all HG agencies, when changes in the legal and regulatory environment are being contemplated. When there are intra-agency disagreements, it is critical that there be a clear and expedited intra-government resolution process.

4/ Licensing/Permitting Processes

All licenses and permits that will be required for E&P must be known at the time of bidding, as well as the criteria upon which licensing and permitting decisions will be made.

A "one-stop shop" approach (*single agency that issues, or at least coordinates the issuance of, all licenses and permits after the PSA is signed and during the E&P phases*) is highly desirable. If "one-stop shop" is not possible, the goals should be (a) to minimize the number of agencies involved and (b) to make clear the responsibilities of each. When there are intra-agency disagreements, it is critical that there be a clear and expedited intra-government resolution process.

5/ Operational Flexibility, Monitoring, and Control

Expedited Decision-Making

There should be only one HG entity monitoring the FEC's activities and reporting. This entity must have significant technical expertise. There should be a clause in the PSA stating that if the HG entity does not object within a reasonable period (*e.g., 60 day*) to reports or to operational initiatives proposed by the FEC, the FEC's reports or proposals are deemed approved. This provides the FEC with a level of administrative certainty.

Cost recovery is a key feature of PSAs; disagreements about which costs may be recovered often happen and can be a key cause of disputes. Therefore, it is particularly important that the administrative review of recoverable costs be conducted by a single agency with technical expertise.

Accidents do happen in E&P. Consequently, there should be clauses limiting consequences for FECs, in case of accidents, as long as best practices were followed. In particular, there should be clauses in the PSAs providing clarity about environmental remediation requirements in case of contamination, and stating clearly the way in which costs of environmental damages will be borne by the FEC. More generally, while penalties for damages, if fair, are justifiable, there should not be criminal sanctions, except in cases of gross negligence or willful misconduct.

NOC as Operational Partners Bearing Their Share of Costs

HG have a legitimate interest in developing and/or creating their own oil and gas industry and, therefore, in wanting to have their national oil/gas companies (NOC) involved in E&P projects. (*The development of Norway's Statoil in the second half the 20th century is a good example of an NOC that gained significant expertise through involvement in E&P projects conducted in offshore Norwegian oil and gas fields*).

Some FECs would prefer to have no or minimal HG's NOC participation in the investment as it makes operations more complex. Yet, FECs understand that such participation is reasonable. However, if there is NOC participation, it is critical that the NOC be an operational entity with technical expertise and that it bear its share of costs. By participating in such terms with the FEC, the NOC is in a better position to learn the economics and nuances of running the field.

FECs like to see HG commitment to training and development of expertise, and FECs generally are open to participating in such training and to financing some of the corresponding costs.

6/ Relations with Local Authorities and Communities

It is in the FECs' interest to buy locally if the quality of the goods and services are competitive, since the shipping/insurance costs are generally lower; local content should therefore be encouraged but not strictly mandated and enforced. When local content requirements are included in a PSA, it is important to clearly specify the share of materials to be procured from domestic suppliers, the selection criteria for the domestic suppliers (*they must be as transparent as possible to avoid nepotism and bribery*), and thresholds above which an open tender must be organized. Tender rules should be flexible and adapted to the capital-intensive nature of the oil and gas industry. FECs are driven to accept the "best" price (*taking into consideration factors such as quality, reliability, operability and punctuality in addition to price*) rather than simply the numerically lowest price.

The FECs have experience engaging in CSR; they recognize that CSR is "good for business"; it is in their interest that local communities benefit from their activities; there again, flexibility rather than strict mandates is important.

7/ Prevention and Resolution of Disputes

It is critical that, in the PSA, there be clauses providing for international arbitration as the dispute resolution mechanism; such clauses must include such basic elements as: arbitration to be conducted at a neutral site outside of the host country, ideally in London or Paris; waiver of sovereign immunity; enforceability of arbitral awards by local courts, whether or not the HG is a signatory of the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards.

Besides an effective dispute resolution clause that provides for international arbitration, it is important that the PSA include intermediary steps to prevent divergences between the HG and the FEC from becoming disputes that make it necessary to have recourse to arbitration. Such steps could be provisions for expert determination, mediation, or for consultations at the highest levels in case of divergences.

C/ Specific Considerations for Gas PSAs

Most PSAs in the world are drafted for recovery of oil; gas is treated as an afterthought in such PSAs. Many PSAs state that gas will be treated the same as oil,

with the PSA being applied “with the necessary changes having been made”. There are few gas-only PSAs (*an example is the Trinidad gas-only PSA*).

There are four main differences between oil E&P and gas E&P.

1/ A longer and more complex production and marketing cycle for gas than for oil

Oil is a commodity, with an international market; gas, on the other hand, has mostly a domestic market, unless it is meant to be sent to LNG terminals or to international pipelines for export. As a result, the cycle from exploration to production is longer for gas E&P than for oil E&P. This is the case because, once the presence of reserves has been confirmed, assessing the commerciality of the discovery takes longer since the domestic market for the gas must be identified and secured (*volumes that can be sold and prices*), the price must be agreed, as well as the creditworthiness of the market.

2/ The necessity of processing gas at the field

Once extracted, oil does not need to be processed and can be easily stored and transported; this is not the case for gas. There needs to be processing facilities and a significant network of pipelines and other infrastructure to bring the gas to market.

3/ Gas is more complex to measure and value than oil

Another key difference is that, while, for a given oil field, oil is mostly of one type (heavy/light..), gas can be processed into different natural gas liquids (NGL). Oil is a fairly homogenous product but gas comprises several constitutive parts. Gas must be processed after extraction before delivery. Consequently, key issues for gas PSAs are measurement, transportation and valuation.

Measurement: What is measured (*energy content?*) Where is the measurement made; in the field, at the place of processing, at the delivery point?

Valuation: What prices should be used as a reference? How does one go from a valuation at the pricing point to a valuation at the well-head?

Therefore, gas PSAs must include well-documented procedures for measurement and accounting methodologies for valuation. (*Alberta has developed such accounting methodologies; they can be shared with Ukraine*).

4/ The processing of the gas stream yields different liquids of value

Several lighter hydrocarbons, or mixtures of hydrocarbons (*propane, butane, ethane, methane*) can be removed from the gas stream and liquefied. For a long

time, only propane and butane were readily liquefied in significant quantities. Those two products were known as “natural gas liquids” or NGLs. They were sold either separately or as a combination of part liquid propane and part liquid butane called liquefied petroleum gas or LPG. With the advent of plastics and chemicals, however, in the second half of the 20th century, ethane, as a liquified product, took on economic and scientific significance. While the ability to liquefy methane has also existed since the early days of the industry, it is only in the past few decades that liquification of methane began in earnest. Propane, butane, ethane, methane, have different markets and values. It is important, therefore, that gas PSAs define these liquids precisely, as well as the conditions under which they can be removed from the gas stream and marketed.

There are also important differences between E&P for conventional gas and E&P for unconventional gas (UG). These differences should be addressed in the PSA. In the case of UG, based upon the geology, the approximate location of the reserves is usually known. Once the presence of the reserves has been confirmed and the volume of reserves has been estimated, the appropriate technology and techniques to extract the gas must be developed. This requires the FEC to develop and test a pilot approach to extracting the UG, before a commitment can be made to a full field development. Additionally, the phasing of UG development requires adaptation to a number of terms in a PSA, including relinquishments, appraisal plans, the duration of the PSA, and the process for declarations of commerciality.

From the perspective of FEC, gas, except in a well-developed gas market with transparent world-market prices, is not as desirable as oil. In addition to market considerations, gas projects are, usually, much more complicated and time consuming than oil projects. Generally, it takes an FEC longer to recover costs in a gas project than it would for an oil project.

Therefore, it is all the more important that gas PSAs be transparent and clear on gas marketing and transportation issues, including the right to market domestically and internationally, the availability of international gas prices, the use of existing transportation systems, and the right to expand transportation systems. The PSA should assure FECs that a successful gas discovery can be easily and transparently monetized in a timely and secure way.

Some countries, aware of the fact that it takes longer for an FEC to recover costs in a gas project than it would in an oil project, include in their PSAs incentive clauses to encourage gas exploration and gas development. One such incentive is the allowance

of the cost recovery of interest (*Libor + a few points*) on the unrecovered capital costs incurred by the IOC to finance the gas development, recognizing that unrecovered capital expenses is equivalent to acquiring debt.

V. CONCLUSION

To attract FEC investment in E&P for gas, Ukraine may want to focus on reducing the “above-ground risk” for potential investors.

Three main conclusions can be drawn from a comparison between the current situation in Ukraine and Best Practices for PSAs, as defined by the experts who, eager to help Ukraine at this critical juncture, graciously shared their experience:

- Several of the Best Practices have already been implemented in Ukraine. Some were introduced by the PSA law of 1999 or by subsequent amendments (e.g., *stabilization clause; freedom to convert revenues into foreign currencies and to repatriate such currencies; whenever there are Domestic Market Supply Obligations (DMO), the selling price of DMO is not lower than international market price....*). Other Best Practices are possible under PSA terms as specified by the law (e.g., *the reference, in PSA contracts to international arbitration as the dispute resolution mechanism, or the waiver of sovereign immunity*).

- The amendment process that has taken place since the enactment of the September 1999 Law on PSAs, has been effective; it is likely, therefore, that the few amendments that remain to be enacted to complete the harmonization between PSA provisions and other regulations, could be enacted in due time.

- Two central issues remain: the need to streamline the permitting/licensing process for PSAs; the lack of coordination between the different authorities, national and provincial, that must implement regulations related to PSAs. This lack of coordination is compounded by the fact that, often, these authorities interpret differently the same regulation.

Therefore, if Ukraine were to adopt an effective “one-stop shop approach” to permitting/ licensing and to ensure inter-governmental coordination, it would lower the “above ground risk” for FEC that consider entering into PSAs.

In the absence of such “one-stop shop” approach, it is essential, if Ukraine wants to lower this risk for FEC, that one executive entity have the political and administrative

authority needed to ensure streamlining of the permitting/ licensing process, as well as effective intergovernmental coordination.