Analysis on the Proportion of Oil and Gas Profit Sharing Under the Cost Recovery PSC and Gross Split PSC Schemes

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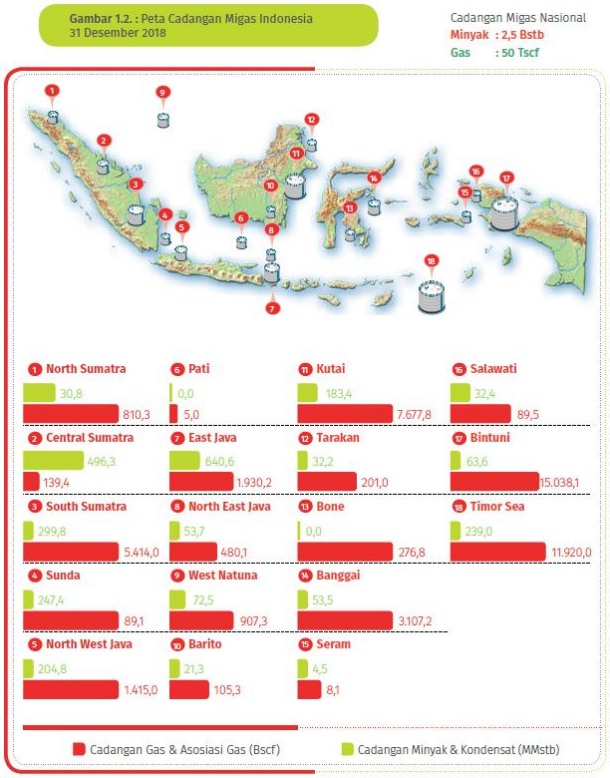
Abstract- Since 2017, Indonesian upstream oil and gas business is managed using the Gross Split PSC scheme to replace the old scheme, namely Cost Recovery PSC. The reason behind this is because the amount of cost recovery exceeds the total profit sharing from state oil and gas revenues. However, it turns out that the Gross Split PSC scheme is less attractive to oil and gas contractors as in the Gross Split PSC scheme the contractor's total profit sharing drops significantly. As the result, in 2020 the Government reverted to the Cost Recovery PSC scheme to give oil and gas contractors a choice of using the PSC scheme. Therefore, this study aims to analyze the proportion of oil and gas production sharing between the Government and Oil and Gas Contractors through the Cost Recovery PSC scheme and the Gross Split PSC scheme. In the analysis of this issue, has been used the production data belonging to one of the Oil and Gas Contractors, namely BUT (Permanent Establishment) ABC Ltd.. This study is a qualitative study to get an in-depth picture of the phenomenon of the proportion of share of oil and gas production between the Government and the Oil and Gas Contractor through Cost Recovery PSC scheme and Gross Split PSC scheme. The data is collected through literature studies and field studies by conducting interviews with relevant stakeholders. The result of this study indicates that in the Gross Split PSC scheme the contractor gets a smaller profit share when compared to the Cost Recovery PSC scheme as in the Gross Split PSC scheme there is no return of operating costs as contained in the Cost Recovery PSC scheme.

Index Terms- Oil and Gas Industry, Proportion of the Government and Oil and Gas Contractors, Cost Recovery PSC, Gross Split PSC

I. Introduction

Indonesia has abundant natural resources, including oil and gas, which is available in relatively large amounts throughout Indonesia. As the affirmation of the previous sentence, Figure 1.1 below shows the data on oil and gas reserves in Indonesia based on the 2019 Annual Report from the Special Task Force for Upstream Oil and Gas Business Activities (SKK MIGAS). This agency is one of the work units in the Ministry of Energy & Mineral Resources (KESDM). Its main task is to regulate the upstream oil and gas industry in Indonesia :

Figure 1.1. Map of Oil and Gas Reserves in Indonesia



Source: The 2019 SKK MIGAS Annual Report

Based on the data from above, Indonesian oil and gas reserves are relatively abundant and dispersed in almost all major islands under its sovereignty.

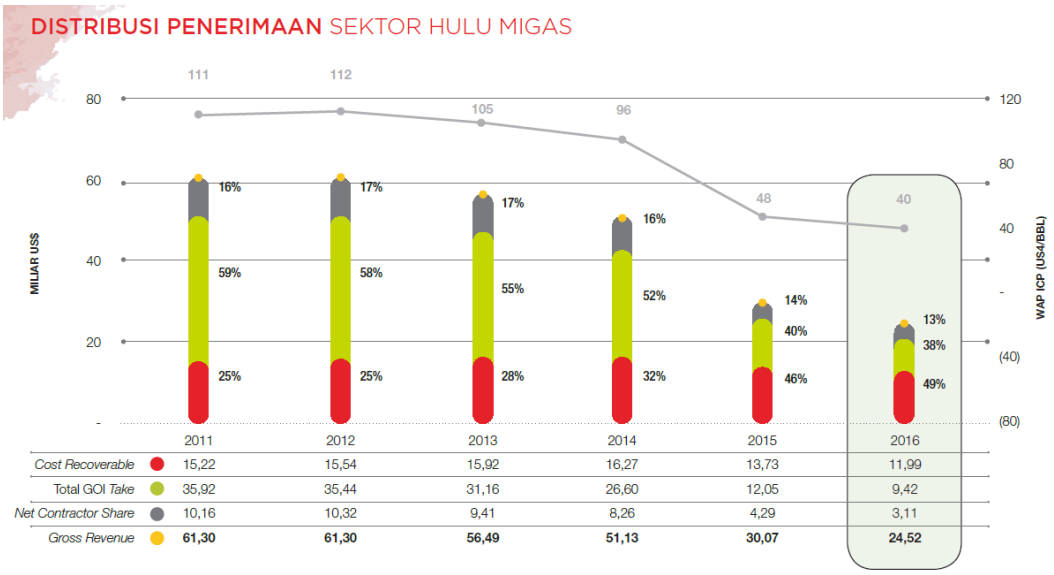
As a developing country, Indonesia has not been able to manage its own oil and gas resources so that the Indonesian government always opens opportunities for investors from within the country and from abroad to invest and cooperate in the management of the upstream oil and gas industry. (Lubiantara, 2012) suggests that the success of a country in inviting investors to invest in the upstream oil and gas industry is highly dependent on the type of oil and gas management cooperation used in that country as the upstream oil and gas industry is a high risk business requiring trained human resources, use of advanced technology and large capital.

Cooperation in the management of the upstream oil and gas industry in Indonesia is commonly referred to as the Production Sharing Contract (PSC) scheme. The term PSC was first introduced in Indonesia in 1960 along with the basic principles contained therein. Some of these principles will be as described below: First, managerial control is held by the State. Second, the contract is based on the sharing of production revenues. Third, all risks are borne by the contractor. If oil and gas is found, the contractor is entitled to cost recovery. However, if exploration fails and no oil and gas is found, the loss is borne by the contractor.

In practice, the determination of cost recovery often becomes a “grey area” contested by the oil and gas contractors and the government. Furthermore, one of the issues related to cost recovery is the imposition of costs that should not be charged. This practice is often encountered through the results of audits carried out by government auditors.

Another thing to be noted regarding the Cost Recovery PSC scheme is the amount of operating cost recovery which relatively increases every year making the sum close to even exceeding the total state share of oil and gas revenues. An example of this statement can be seen through the data graph regarding the distribution of revenues from the upstream oil and gas sector in Figure 1.2. below (in billion dollars) :

Figure 1.2. Distribution of Upstream Oil and Gas Sector Revenues from 2011 to 2016



	2011	2012	2013	2014	2015	2016
Cost Recoverable	15,22	15,54	15,92	16,27	13,73	11,99
Total GOI *Take*	35,92	35,44	31,16	26,60	12,05	9,42
Net Contractor Share	10,16	10,32	9,41	8,26	4,29	3,11
Gross Revenue	**61,30**	**61,30**	**56,49**	**51,13**	**30,07**	**24,52**

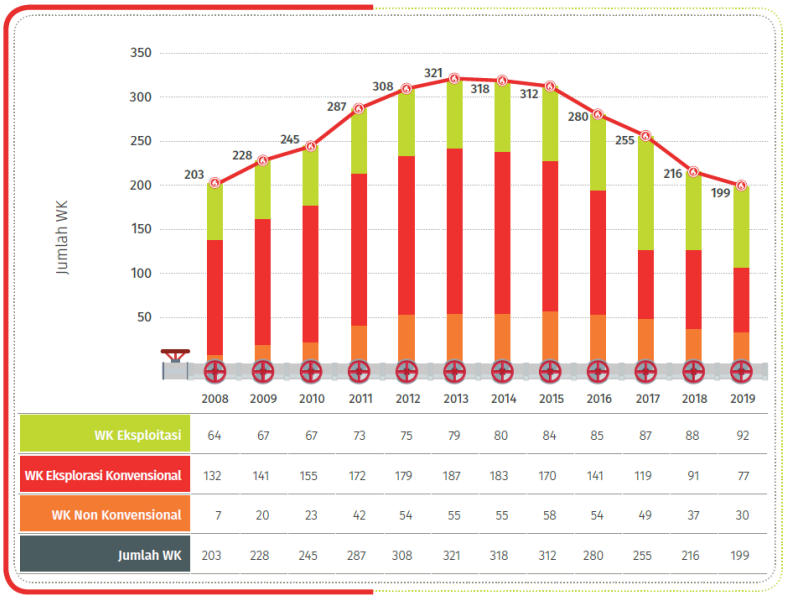
Source: The 2016 SKK MIGAS Annual Report

Based on the 2016 SKK MIGAS Annual Report above, the total Cost Recoverable from 2011 to 2014 has constantly increased in contrast to the Total Government Take which during the 4-year period has constantly declined and further exacerbated with the figures in 2015 and 2016 during which the Cost Recoverable was higher compared to the Total Government Take.

On January 13, 2017 the Government of Indonesia, through the Minister of Energy and Mineral Resources introduced Regulation of the Minister of Energy and Mineral Resources Number 08 of 2017 concerning Gross Split Production Sharing Contracts (Ministerial Regulation No. 08 of 2017). Ignasius Jonan (then Minister of Energy and Mineral Resources) in a meeting with the Indonesia Petroleum Association (IPA) in 2017, stated that this step was taken by the government to anticipate the uncertain condition of the oil and gas industry by way of cost efficiency in the upstream oil and gas industry while the Gross Split PSC scheme emphasizes the principle of fairness.

Another phenomenon of the upstream oil and gas industry in Indonesia is the charts of the work area and the realization of oil and gas contractor investments at the exploration stage. Based on the data on oil and natural gas Work Areas in Indonesia contained in the 2019 SKK MIGAS Annual Report, the Work Area and realization of oil and gas contractor investment at the exploration stage has continued to decline for six consecutive years as indicated by Figure 1.4 below:

Figure 1.4. The 2008-2019 Oil and Gas Work Areas in Indonesia



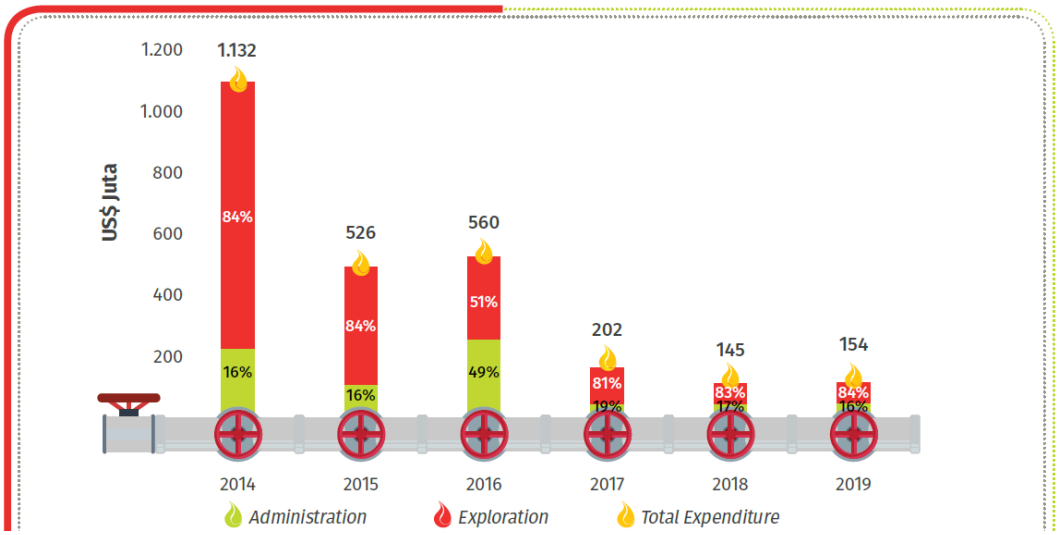
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WK Eksploitasi	64	67	67	73	75	79	80	84	85	87	88	92
WK Eksplorasi Konvensional	132	141	155	172	179	187	183	170	141	119	91	77
WK Non Konvensional	7	20	23	42	54	55	55	58	54	49	37	30
Jumlah WK	203	228	245	287	308	321	318	312	280	255	216	199

Source: The 2019 SKK MIGAS Annual Report

The data in Figure 1.4. above shows that from 2014 to 2019 the number of oil and gas mining Work Areas in Indonesia has continually declined. The Secretary General of the Association of Oil and Gas Producing Regions at the 2019 Indonesia Mining and Energy Forum (IMEF) Andang Bachtiar stated that changing the oil and gas production sharing contract scheme to the Gross Split PSC scheme increases the risk of investment uncertainty in the oil and gas sector making large multinational oil and gas investors such as Exxon, Royal Dutch (Shell), British Petroleum, Mobil, Chevron, Gulf Oil, and Texaco to refrain from the exploration oil and gas blocks offered by the Indonesian government.

Another thing to note is the decreasing investment realization of oil and gas exploration contractors as indicated by Figure 1.5 below:

Figure 1.5. Investment Realization of Exploration Oil and Gas Contractors from 2014 to 2019



Source: The 2019 SKK MIGAS Annual Report

Based on the investment realization data of oil and gas exploration contractors from 2014 to 2019 in Figure 1.5 above, the efforts to develop the upstream oil and gas industry and to guarantee the availability of energy in the future requires to real investment in oil and gas exploration activities. However, in practice, during the 2014 to 2019 period, investment in exploration work areas has relatively decreased.

The facts described in the paragraph above also indicate that with the enactment of Ministerial Regulation No. 8 of 2017, namely the switch from the Cost Recovery PSC scheme to the Gross Split PSC scheme has resulted in no significant effect in the upstream oil and gas industry in Indonesia. As the result, on July 16, 2020, the Minister of Energy and Mineral Resources Regulation Number 12 of 2020 concerning Third Amendment to the Regulation of the Minister of Energy and Mineral Resources Number 08 of 2017 concerning Gross Split Production Sharing Contracts (Permen. ESDM No. 12 of 2020) was enacted.

Ministerial Regulation No. 12 of 2020 entitles the government to give oil and gas contractors the option to use the Gross Split PSC or Cost Recovery PSC scheme in running the upstream oil and gas business in Indonesia as mandated in Article 2 of the Ministerial Regulation No. 12 of 2020. Ronald Gunawan as one of the Executive Directors of IPA gives a response that this measure may lead to the flexibility of an oil and gas project to increase the economic level of the project. Ronald Gunawan suggests that each oil and gas project has different characteristics and levels of risk. In the end, the choice of using either scheme for oil and gas contractors is expected to boost oil and gas investment in Indonesia.

In terms of taxation regulation, the Cost Recovery PSC scheme adopts Government Regulation No. 27 of 2017 as described above. Meanwhile, the Gross Split PSC scheme is regulated in Government Regulation Number 53 of 2017 concerning Tax Treatment in Upstream Oil and Gas Business Activities with Gross Split Production Sharing Contracts (Government Regulation No. 53 of 2017).

Based on the discussion of the phenomena of the upstream oil and gas business in Indonesia and the implementation of two PSC schemes in the upstream oil and gas industry in Indonesia as well as their relation to taxation policies for the industry, in this study, the authors are interested in further exploring the proportion of distribution of oil and gas production revenues between the Gross Split PSC scheme and the Cost Recovery PSC schemes.

II. CONCEPTUAL FRAMEWORK

a. Cost Recovery PSC Scheme

During the early days of the upstream oil and gas industry, Indonesia adopted the Cost Recovery PSC system. The system means that the government has an obligation to recover operating costs if the contractor acquires oil reserves and manages to commence commercial

production. The Cost Recovery PSC scheme in Indonesia generally has 7 (seven) basic principles as outlined in the cooperation contract (Pudyantoro 2012), among others:

- Control of natural resources lies in the hand of the government;
- The government appoints contractors to carry out natural resource processing activities;
- Supervision of upstream oil and gas business activities is given to an Executive Agency;
- Professional skills, technical competence, and financial capability are mandatory;
- Domestic demand for oil and gas must be guaranteed by the Government efficiently and effectively;
- Cooperation Contracts are entered into between the Executive Body and the Contractor, in accordance with the Oil and Gas Law; and
- Parties to the cooperation contract are obliged to comply with every article contained in the contract.

Upstream oil and gas business activities are a type of business with high levels of difficulty requiring large capital and costs (Romadhon, 2009). (Pudyantoro, 2012) explains that there is often a misunderstanding about cost recovery. These misunderstandings include:

- Oil and gas business is a government-owned business. The government cooperates with contractors to optimize upstream oil and gas exploitation. Thus, oil and gas resources will remain state property, not controlled by foreign parties.
- Cost recovery is a return on operating costs that will only be carried out if the contractor finds oil reserves and produces commercial production. The government will not bear the loss if the contractor fails.
- The concept of Cost Recovery is not an advantage for the contractor. This system is solely a return on costs incurred by contractors to acquire oil and gas. The real problem is the supervision and control over the use of the contractor's operational funds.
- Cost Recovery is not paid through the mechanism of the State Revenue and Expenditure Budget, but through oil and gas production.

The oil and gas production sharing in the Cost Recovery PSC scheme is carried out as follows: the gross production obtained in a work area will first be taken in part for the First Trance Petroleum (FTP). FTP is a certain part of oil and gas produced and stored from a work area in one calendar year which the contractor and the government have the right to collect and receive. After deducting FTP, the gross production is then reduced by cost recovery. After deducting these two components, the gross production will reach a point called equity to be split, namely the point in which the production revenue is ready to be shared between the government and the contractor.

At present, the Cost Recovery PSC scheme is not the only form of PSC used in the upstream oil and gas industry in Indonesia. In 2017 the Government of Indonesia issued a policy regarding a new PSC scheme which can be used by oil and gas contractors in running the upstream oil and gas business in Indonesia, namely the Gross Split PSC which will be further discussed in the next subchapter.

b. Gross Split PSC Scheme

As a replacement for the Cost Recovery PSC scheme, the Government of Indonesia introduced the Gross Split PSC scheme. To put it simple, the scheme regulates the share of government and contractor profits from the gross production without cost recovery mechanism. Without cost recovery from the government, contractors are expected to be able to carry out their activities efficiently.

(Nurtjahyo, 2017) explains that the Gross Split PSC requires the contractor to perform works as efficiently as possible given the business model underlying the Gross Split PSC concept is efficiency in running operations so as to produce an optimal rate of return on investment. With this scheme, both parties are expected to share the benefits and risks faced. According to (Purba, 2017), the objectives of the Gross Split PSC include:

a. To encourage more effective and swift exploration and exploitation for contractors
b. To encourage oil and gas contractors and industries supporting upstream oil and gas activities to do business more efficiently to better deal with fluctuations in oil prices from time to time.
c. To encourage simpler and more accountable business process for the contractors and the government (SKK Migas).
d. To encourage the contractor to manage their operating and investment costs based on the corporate financial system, not the state financial system.

(Rulandari, 2018) suggests that the Gross Split PSC scheme is a profit sharing scheme adopting a sliding scale split system where the amount of profit sharing can change throughout the contract period. Profit sharing between the government and contractors is regulated through the base split which is then adjusted for the variable and progressive components.

Based on the gross split system, the profit sharing from oil and gas sales is no longer deducted from operating costs. The share of oil and gas received by the government is net and the government no longer bears the repayment of the contractor's obligations from the state's share. The contractor's share is calculated based on the gross percentage of production after deducting income tax.

Oil and gas production results will be directly shared between the government and the contractor. The operating costs incurred by the contractor will only reduce the contractor's share and will be a deduction of income in the tax calculation. The contractor's tax obligations are no longer borne by the government so that the payment of land and building tax, VAT, and PDRD will be borne by the contractor own its own.

After explaining the Gross Split PSC and Cost Recovery PSC schemes in the previous sub-chapter, this study will discuss the concept of oil and gas investment, in which the implementation of the two PSC schemes is closely related to the investment decision of oil and gas investors which will eventually affect state revenues from the oil and gas sector as well as the taxation sector from the upstream oil and gas industry.

c. Oil and Gas Investment Concept

In general, investment is an activity carried out by individuals or legal entities in an effort to increase or maintain the value of their capital in the forms of cash, equipment, assets, both tangible and intangible assets, including direct investment and indirect investment (*portfolio investment*) (Harjono, 2007).

The concept of investment in oil and gas business in Indonesia is the concept of direct investment where investors have power over their capital. Investments in the upstream oil and gas industry are known for their unique characteristics that are not shared by investments in other industries, so they must be specifically regulated (Kindleberger, 1983).

According to (Nakhle, 2008), The upstream oil and gas industry is a capital-intensive industry, necessitating large investments every year to carry out exploration in order to find sufficient oil and gas reserves to replace the currently consumed oil and gas. Oil and gas projects are long term projects by nature with massive investment and upfront costs. The exploration and assessment phase, in particular, can last for years.

According to (Djunedi, 2017) , there are also several other factors for an investor to decide to invest in the upstream oil and gas sector. Some of these factors are fiscal provisions, taxation, quality of infrastructure and other factors that need to be considered in the future to make Indonesia attractive for oil and gas investors.

Based on the explanation above, it can be concluded that the upstream oil and gas industry requires large investments before it is known whether the returns are large or small.

III. RESEARCH METHOD

The study adopts qualitative approach to get an in-depth picture of the phenomenon of the proportion of oil and gas production sharing between the Government and Oil and Gas Contractors through the Cost Recovery PSC and the Gross Split PSC schemes. The data collection method used is through literature studies and field studies by conducting in-depth interviews with informants from relevant stakeholders. These informants include:

1. Executive Officers

Interviews with Executive Officers were conducted with:

a. Asep Syaifullah Adnand, Senior Manager of Taxation in the Business Strategy, Risk Management and Taxation Division of the Special Task Force for Upstream Oil and Gas Business Activities (SKK MIGAS), Interviews were conducted with SKK Migas, particularly the Business Strategy, Risk Management and Taxation Division to find out current views on the upstream oil and gas industry in Indonesia, especially after the enactment of the Ministerial Regulation. ESDM No. 12 of 2020 in an effort to increase investment interest in the upstream oil and gas industry.
b. Imanul Hakim as the 2016 - 2020 Head of the Oil and Gas Tax Service Office (KPP Migas), interviews were conducted with the Directorate General of Taxes, especially KPP Migas to find out about tax treatment at the exploration stage which was previously discussed as one of the five main factors causing low interest in upstream oil and gas investment in Indonesia.
c. Robert as Media Expert Policy Analyst at the Fiscal Policy Agency of the Ministry of Finance. Interviews were conducted with the Fiscal Policy Agency, to find out the factors and challenges in implementing the Gross Split PSC in Indonesia in order to support upstream oil and gas investment in Indonesia which will ultimately improve the country's economy.

2. Oil and Gas Practitioner / Contractor

Interviews with Oil and Gas Practitioners / Contractors were conducted with:

a. Asep Buhori, Assistant Manager Finance of PT Pertamina Hulu Energi (PHE) & (Former) Finance Manager at CNOOC SES Ltd. PT Pertamina Hulu Energi was interviewed because in 2017 one of PHE's Work Areas, namely Onshore North West Java was the first oil and gas Work Area in Indonesia to apply the Gross Split PSC scheme.
b. Hendra Hafnur, Tax Litigation & Operation Tax Manager of British Petroleum Indonesia (BP). BP was interviewed as it is one of the largest multinational oil and gas companies in the world who are also ex-Seven Sisters but is not yet interested in investing in the upstream oil and gas industry in Indonesia with the Gross Split PSC scheme.

3. Academicians / Experts in the Upstream Oil and Gas Industry

Interviews with Academicians / Oil and Gas Industry Experts were conducted with:

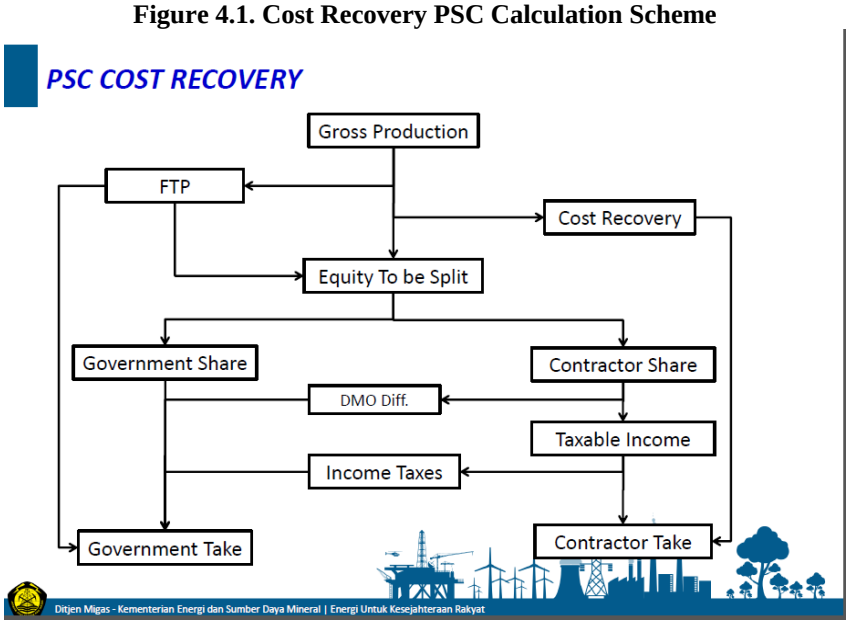
Dr. Machfud Sidik, M.Sc as an Academician in the field of Tax Administration and Policy at the University of Indonesia and former Director General of Taxes. Interview was conducted with academicians as an independent and neutral party to obtain objective insight.

IV. DISCUSSION AND ANALYSIS

Oil and gas natural resources have two strategic roles, namely as sources of state revenue and as alternatives to meet energy needs in Indonesia. Regarding the strategic role of oil and gas, as previously mentioned, the government is currently implementing two PSC schemes for companies that will manage the upstream oil and gas industry in Indonesia. The two PSC schemes are the Cost Recovery PSC scheme and the Gross Split PSC scheme. The next focus of this paper will be to discuss the general description of the two PSC schemes.

Figure 2.1. below shows an overview of the Cost Recovery PSC calculation scheme adopted by the Government of Indonesia:

Figure 4.1. Cost Recovery PSC Calculation Scheme



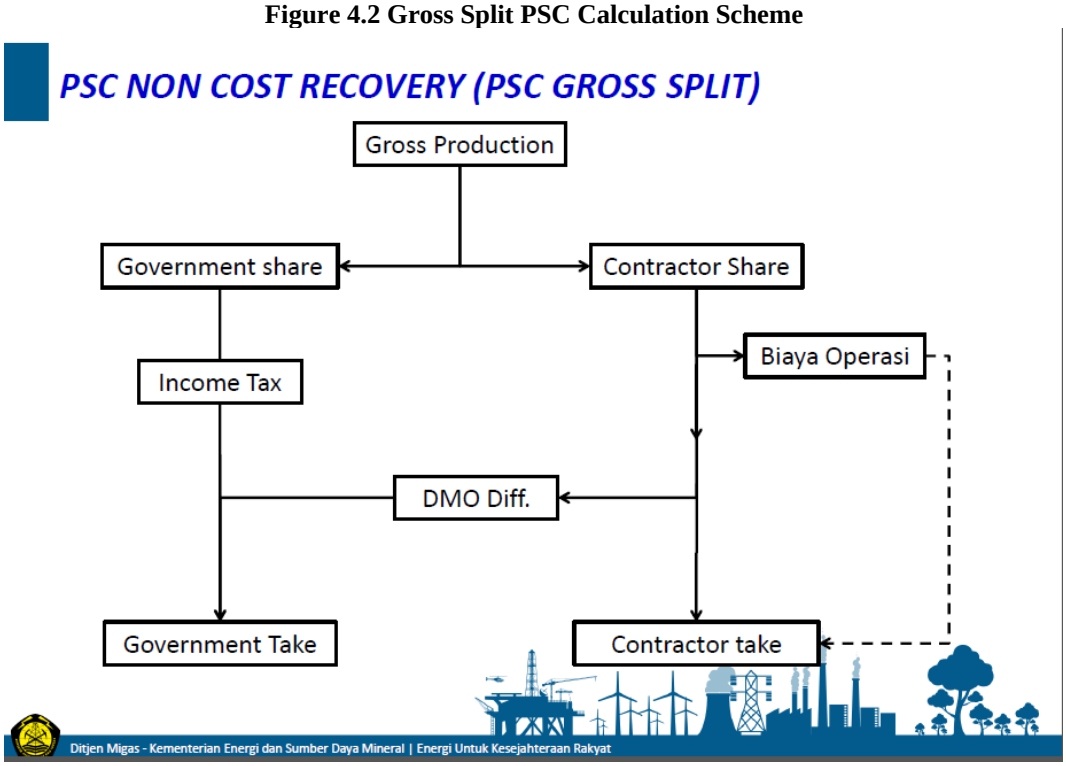
Source: The Directorate General of Oil and Gas

Below are the meanings of the terms used in the Cost Recovery PSC calculation scheme:

- *Lifting* is the amount of crude oil and/or natural gas that is sold or divided at the point of delivery.
- *Gross Production* is a number of values obtained from the sale of lifting crude oil and/or natural gas calculated using the following formula : (gross revenue = (lifting crude oil x price of crude oil) + (lifting gas x price of natural gas))
- *First Tranche Petroleum* or *FTP*, is a certain amount crude oil and/or natural gas produced from a Work Area in one calendar year which can be retrieved and received by the Executive Agency and/or contractor in each calendar year, before deducting the return of operating costs and production handling (own use). The usual amount of FTP for a job field is 20% of gross revenue, so if the FTP calculation method is simulated, it is as follows: (FTP = Gross Revenue x 20%)
- *Cost Recovery* is the costs in upstream oil and gas business activities incurred by the contractor and the expenditure of these costs will eventually be reimbursed by the Government. Cost Recovery consists of non-capital costs and capital costs.
- *Equity to be Split* or *ETBS* is the production profit available for sharing (lifting) between the Government and contractors after deducting FTP, investment incentives (if any), and cost recovery. The method of calculating ETBS is as follows: (ETBS = Gross Revenue – FTP – Investment Incentives (if any) – Cost Recovery).
- Domestic Market Obligation or DMO, is the obligation to surrender the contractor's share in the form of oil and/or natural gas to meet domestic needs. DMO can be divided into 3 (three) namely Barrel DMO, Fee DMO, and Net DMO.
- Barrel DMO, is a quantity that shows how many barrels of oil that is the contractor's obligation to be surrendered to the Government below the market price. The DMO Barrel is determined by calculating the percentage of DMO multiplied by the percentage of the contractor's profit sharing before tax multiplied by the total production. The usual percentage of Barrel DMO to a job is 10%.
- DMO Fee is the amount of money paid by the government to contractors for a given number of DMO Barrels. The money paid by the government in the DMO Fee is usually only 10% of the crude oil market.
- Net DMO is the result of the reduction between DMO Barrel and DMO Fee.

After discussing the general description of the Cost Recovery PSC scheme, the next discussion is about the general description of the Gross Split PSC scheme. Figure 2.2. below shows an overview of the Gross Split PSC calculation scheme adopted by the Government of Indonesia:

Figure 4.2 Gross Split PSC Calculation Scheme



Source: The Directorate General of Oil and Gas

From the government's perspective, the Gross Split PSC scheme is a cooperation contract model considered more profitable than the Cost Recovery PSC scheme, namely in terms of the split distribution between the Government and KKKS as there is no recovery of operating costs that burdens the government. This is also in line with the mandate of Law Number 22 of 2001 concerning Oil and Gas Article 1 paragraph 19 which reads as follows:

"Cooperation Contract is a Production Sharing Contract or other form of cooperation contract in Exploration and Exploitation activities which are more profitable for the State and the results are used for the greatest prosperity of the people;"

Substantively, the Gross Split PSC scheme has fulfilled the substantive requirements stipulated in Article 6 of Law Number 22 of 2001. After discussing the general description of the Gross Split PSC scheme and the Cost Recovery PSC scheme, the next discussion is the analysis of the proportion of oil and gas production sharing between the Cost Recovery PSC scheme and the Gross Split PSC scheme.

V. ANALYSIS OF THE PROPORTION OF OIL AND GAS PRODUCTION SHARING BETWEEN THE COST RECOVERY PSC SCHEME AND THE GROSS SPLIT PSC SCHEME

In analyzing the proportion of oil and gas production sharing between the Gross Split PSC scheme and the Cost Recovery PSC scheme, this study uses an illustration of oil and gas production belonging to one of the contractors operating in North Natuna Sea Upstream Oil and Gas Industry Work Area operated by BUT (Permanent Establishment) ABC Ltd..

5.1 Analysis of the Proportion of Oil and Gas Production Sharing Using the Cost Recovery PSC Scheme

The calculation is carried out from one of the Upstream Oil and Gas Industry Work Areas with the location of the upstream oil and gas industry Work Area in North Natuna Sea. The calculation scheme used is the Cost Recovery PSC scheme. Below is the description of the contract used as a basis for calculation:

1. The calculation carried out in the study does not reflect all the cooperation contract contractors in Indonesia;
2. In order to guarantee the data confidentiality aspect, the contractor whose production data is used in this research will be referred to as BUT (Permanent Establishment) ABC Ltd.;
3. The calculation uses the 2019 crude oil and gas prices;
4. The profit sharing agreement between the Government and the Contractor is 85% : 15%;

5. The tax rate imposed on the contractors is 30% for Corporate Income Tax (CIT) and 20% for Branch Profit Tax (BPT). When combined, the effective tax rate of the two types of tax is 44%;
6. The *First Tranch Petroleum* (*FTP*) used is 20%;
7. The tariff used to calculate the volume of Domestic Market Obligation (DMO) is 25%; and
8. The tariff used to calculate the basic DMO price is 10% of the normal market price.

In calculating profit sharing in the upstream oil and gas industry using the Cost Recovery PSC scheme, the first thing to do is calculating the Equity To Be Split (ETBS). Table 5.1. below indicates the details of the 2019 ETBS of BUT ABC Ltd:

Table 5.1 The 2019 Calculation of Equity To Be Split of BUT ABC Ltd.
(in USD)

Period	Lifting		Price		Gross Revenue	FTP	Cost Recovery	ETBS
	Oil	Gas	Oil	Gas				
January	0	205,717	0	12.31	2,532,381	506,476	3,771,228	(1,745,323)
February	0	382,025	0	11.86	4,530,818	906,164	3,869,624	(244,970)
March	202,311	519,951	64,10	11.90	19,155,546	3,831,109	3,652,870	11,671,567
April	100,271	0	69,97	0	7,015,962	1,403,192	4,193,265	1,419,504
May	0	520,472	0	14.17	7,375,094	1,475,019	2,986,196	2,913,879
June	112,680	509,391	73,19	14.02	15,388,710	3,077,742	5,631,988	6,678,980
July	0	655,592	0	13.41	8,791,486	1,758,297	7,255,261	(222,073)
August	208,901	757,697	71,54	13.58	25,234,306	5,046,861	4,179,644	16,007,801
September	0	622,922	0	14.01	8,727,138	1,745,428	5,323,630	1,658,080
October	130,083	583,855	80,32	15.40	19,439,628	3,887,926	5,207,470	10,344,232
November	0	718,980	0	13.42	9,648,716	1,929,743	5,576,145	2,142,828
December	107,021	890,235	57,21	10.97	15,888,551	3,177,710	8,450,449	4,260,392
Total					**143,728,337**	**28,745,667**	**60,097,771**	**54,884,899**

Source : BUT ABC Ltd., data reprocessed

Based on the data in the table above, the calculation is carried out by multiplying the results of oil and gas lifting by the price of oil and gas in the same period. After the calculation is made, the result is the gross revenue from oil and gas production of BUT ABC Ltd.'s Work Area. Based on the calculations in table 4.1.the oil and gas production gross obtained in 2019 in the BUT ABC Ltd.'s Work Area, namely $ 143.728.337, -

The next calculation is the amount of FTP. Based on the contract, the FTP is 20% of the gross revenue, so that the 2019 total FTP obtained in BUT ABC Ltd.'s Work Area is for $ 28,745,667, -. In addition, the 2019 cost recovery in BUT ABC Ltd.s Work Area is $ 60,097,771,-. Furthermore, ETBS is calculated by reducing the gross revenue by FTP and the Cost Recovery. As the result, the total 2019 ETBS of BUT ABC Ltd.'s Work Area is $54,884,899,-.

After obtaining the ETBS, the next calculation is amount of the Oil and Gas Contractor's Share under the Cost Recovery PSC scheme. For information, the Oil and Gas Contracting Division consists of various components, namely FTP for the contractor, ETBS for the contractor and DMO for the contractor. In the previous section, it has been explained that the government and contractors amount is 85%: 15%. Lubiantara (2010:79) suggests the formula for determining the percentage of profit sharing before tax for the contractor's share as follows:

$$\frac{\text{\% of the contractor's profit share}}{(1 - \text{\% of the contractor's tax})}$$

Based on this formula, the calculation of profit sharing before tax of the contractor is 15%/(1-44%) resulting in a percentage of 26.79%. The percentage will then be used as the basis for calculating the Contractor's share of FTP and ETBS. The calculation is shown in Table 5.2. below:

Table 5.2 Calculation of the 2019 *FTP* and *ETBS* of the Oil and Gas Contractor (BUT ABC Ltd.) (in USD)

Period	**FTP BUT ABC Ltd**	**ETBS BUT ABC Ltd**
January	135,663	(467,497)
February	242,722	(65,617)
March	1,026,190	3,126,313
April	375,855	380,224
May	395,094	780,503
June	824,395	1,789,012
July	470,972	(59,484)
August	1,351,838	4,287,804
September	467,525	444,129
October	1,041,409	2,770,777
November	516,896	573,972
December	851,172	1,141,176
Total	**7,699,732**	**14,701,312**

Source : BUT ABC Ltd., data reprocessed

Based on table 5.2, the contractor's share of FTP is $7,699,732,- and the contractor's ETBS is $14,701,312. The next stage is to determine the Oil and Gas Contractor's Share is the Domestic Market Obligation (DMO). According to Lubiantara (2010:79), DMO can be divided into 3 (three) stages, namely:

1. *DMO Barel*

DMO Barrel is a unit that shows the total barrels of oil that is the contractor's obligation to be given to the Government below the market price. The DMO Barrel is obtained by calculating the percentage of DMO multiplied by the percentage of the contractor's profit sharing before tax multiplied by the total production.

2. *DMO Fee*

Represents the amount of money paid by the government to contractors for a given total of DMO Barrels.

3. *Net DMO*

Represents the result of the reduction between DMO Barrel and DMO Fee.

Based on the contract, the agreed price for DMO Barrels is 10% of the market price. Table 5.3. below shoes the DMO data in the BUT ABC Ltd.'s Work Area. :

Table 5.3. Calculation of *Domestic Market Obligation* (*DMO*) of BUT ABC Ltd. (in USD)

Period	***DMO Barrel***	***DMO Price***	***DMO Fee***	***DMO With Normal Price***	***Net DMO***
January	0	0	0	0	0

Period	***DMO Barrel***	***DMO Price***	***DMO Fee***	***DMO With Normal Price***	***Net DMO***
February	0	0	0	0	0
March	20,321	6.4	130,260	1,302,600	1,172,340
April	10,072	7.0	70,473	704,730	634,257
May	0	0	0	0	0
June	11,318	7.3	82,839	828,390	745,551
July	0	0	0	0	0
August	20,983	7.2	150,115	1,501,150	1,351,035
September	0	0	0	0	0
October	13,066	8.0	104,949	1,049,490	944,541
November	0	0	0	0	0
December	10,750	5.7	61,500	615,000	553,500
Total	86,511		**600,136**	**6,001,360**	**5,401,224**

Source : BUT ABC Ltd., data reprocessed

Based on table 5.3. above, it can be seen that BUT ABC Ltd. sold 86,511 barrels of oil to the Government of Indonesia in the 2019 production period. The price paid by the Government is 10% of the normal market price of crude oil, so that the DMO Fee obtained by BUT ABC Ltd is $ 600,136,- which, if using the normal price, is $ 6,001,360,-. Based on the price difference, the Net DMO for the BUT ABC Ltd. Work Area in North Natuna Sea is $ 5,401,224,-.

After obtaining the FTP, Cost Recovery, ETBS, DMO Barrel, DMO Fee and Net DMO values, then the next step is to calculate the contractor's take, in this case the 2019 profit sharing for BUT ABC Ltd as shown in Table 5.4. below:

Table 5.4 Calculation of the 2019 Contractor's Take (BUT ABC Ltd.)
(in USD)

Description	**Total**
FTP	7,699,732
ETBS	14,701,312
Less : DMO Full Price	(6,001,360)
Add : DMO Fee	600,136
Cost Recovery	60,097,771
Total Net Revenue	**77,097,592**

Source : BUT ABC Ltd., data reprocessed

Based on table 5.4, the share of oil and gas contractors before tax is $ 77,097,592,-. The tax payable in the upstream oil and gas industry is determined by multiplying the percentage of the tax rate by the total net income with the percentage of the tax rate used is 44% (CIT and BPT) and the total net income in 2019 is $ 40,415,529,- resulting in the total tax to be paid by BUT ABC Ltd. is $ 17,782,833, -. Based on the calculation above, the 2019 Total Net Income after tax of BUT ABC Ltd.'s Work Area is $ 59,314,759,-.

After obtaining the Total Net Income after tax, the next step is the calculation of the 2019 Government Share for the Upstream Oil and Gas Industry Work Area in North Natuna Sea managed by BUT ABC Ltd.. Based on Lubiantara (2010:79), the Government's share can be calculated by adding up the Government's share of FTP, the Government's share of ETBS, Net DMO, and the tax paid by the Contractor. Below is the amount of the Government Share :

Table 5.5 Total Government Share in the 2019 North Natuna Sea Work Area 2019 (in USD)

Description	**Total**
FTP	21,045,935
Cost Recovery	(60,097,771)
ETBS	40,183,587
Net DMO	5,401,224
Tax	17,782,833
Total	**24,315,808**

Source : BUT ABC Ltd., data reprocessed

Based on table 5.5 above, it can be concluded that the 2019 total Government Share in for the Upstream Oil and Gas Industry Work Area in North Natuna Sea managed by BUT ABC Ltd. is $ 24,315,808, -.

5.2. Analysis of the Proportion of Oil and Gas Production Sharing Using the Gross Split PSC Scheme

In this section, the proportion of oil and gas production sharing will be analyzed using the Gross Split PSC scheme based on Ministerial Regulation No. 8 of 2017 which has been amended several times, lastly by Ministerial Regulation No. 12 of 2020. The amount of the base split for the Government and Contractors as referred to in the regulation is 57% : 43% for Petroleum and 52% : 48% for Natural Gas. Another matter to be noted is that in the Gross Split PSC scheme all costs are borne by the Contractor so that the Government has no obligation to recover the operating costs adopted in the Cost Recovery PSC.

In the Gross Split PSC scheme, there are two important terms that must be known, namely the progressive component and the variable component. These two components can provide a split change between the Government and the Contractor in an oil and gas Work Area commonly known as a sliding scale split. In general, it can be concluded that the progressive component describes the market condition of the upstream oil and gas industry, while the variable component describes the economic condition of an upstream oil and gas Work Area.

In this calculation, the researcher will again use the 2019 oil and gas production data belonging to BUT ABC Ltd. with the Work Area being managed in North Natuna Sea. As explained above, the base split for the Government and Contractors in the Gross Split PSC scheme is 57% : 43% for Oil and 52% : 48% for Natural Gas. In April 2019, Plant of Development II in several of oil and gas wells in North Natuna Sea Work Area were realized, resulting in adjustments to the variable components which in turn would result in a split change between the Government and the Contractors in the Work Area. Table 5.6 below is a breakdown of the adjustment of variable components, which causes a sliding split scale to occur in the Work Area:

Table 5.6 Detail of Components of Variable and Progressive Components Of North Natuna Work Area

Variable Component	**Assumption**	**Split Correction**	**Progressive Components**	**Assumption**	**Split Correction**
Work Area Status	POD II	3%	Oil Price	[redacted]	[redacted]
Field Location	Offshore (20<h≤50)	10%			
Reservoir Depth	≤2500	0%			
Infrastructure Availability	Well Developed	0%	Gas Price		
Reservoir Type	Conventional	0%			
CO2 Content	<5	0%			
H2S Content	<100	0%			

Variable Component	Assumption	Split Correction	Progressive Components	Assumption	Split Correction
Petroleum Type by API	≥25	0%	Total Cumulative Production of Oil and Gas	[redacted]	[redacted]
TKDN	30≤x<50	2%			
Production Stage	Primer	0%			
Total Variable Components		15%	**Total Progressive Components**		

Source : BUT ABC Ltd., data reprocessed

Based on table 5.6 above, it can be concluded that there is a split correction with a percentage of 15% originating from 3 (three) types of variable components. The three variable components include the status of the work area, location of the field, and level of the domestic component (TKDN). With regard to this matter, Table 5.7 below shows the split change in North Natuna Sea Work Area managed by BUT ABC Ltd.:

Table 5.7 Change of *Split* of North Natuna Sea Work Area

Parties	*Base Split*		*After Sliding Scale Split*	
	Oil	*Gas*	*Oil*	*Gas*
The Government	57%	52%	42%	37%
BUT ABC Ltd.	43%	48%	58%	63%

Source : BUT ABC Ltd., data reprocessed

Based on Table 5.7 above, there is a movement or change in the split with a percentage of 15% between the Government and the Contractor on the base split and after the sliding scale split is carried out due to the adjustment of the progressive components. The terms of the contract that will be used as the basis for calculations in this study are as follows:

1. The calculations made in the study do not reflect all of the cooperation contract contractors in Indonesia;
2. To ensure the confidentiality of data, the contractor whose production data is used in this research will be referred to as BUT ABC Ltd.;
3. The calculation uses the 2019 crude oil and gas prices;
4. The profit sharing agreement between the Government and the Contractor is 42%:58% for Oil and 37%:63% for Natural gas; and
5. The tax rate imposed on contractors is 25% for Corporate Income Tax and 20% for Branch Profit Tax

After determining the terms of the contract as described above, the next step is calculation using the 2019 assumption of oil and gas basic prices. An important component in the Gross Split PSC scheme is the determination of the contractor split. The following table 5.8 shows the calculation of the assumed profit sharing adjustment on the movement of the components of oil price:

Table 5.8 Percentage of Split Between the Government and Oil and Gas Contractors Based on the Gross Split PSC Scheme with the 2019 Oil Price

Period	% Initial Split	2019 Oil Price ($)	Progressive Component	% Contractor	% Government
January	0%	0	0%	0%	0%
February	0%	0	0%	0%	0%
March	58%	64.10	5.22%	63.22%	36.78%
April	58%	69.97	3.75%	61.75%	38.25%
May	0%	0	0%	0%	0%
June	58%	73.19	2.95%	60.95%	39.05%

Period	% Initial Split	2019 Oil Price ($)	Progressive Component	% Contractor	% Government
July	0%	0	0%	0%	0%
August	58%	71.54	3.36%	61.36%	38.64%
September	0%	0	0%	0%	0%
October	58%	80.32	1.17%	59.17%	40.83%
November	0%	0	0%	0%	0%
December	58%	57.21	6.94%	64.94%	35.06%

Source : BUT ABC Ltd., data reprocessed

After the indication in table 5.8 above with regard to the adjustment of profit sharing assumed based on the movement of the components of oil price, table 5.9 below will indicate the calculation of the adjustment of the profit sharing assumed based on the movement of the component of the price of natural gas:

Table 5.9 Percentage of *Split* Between the Government and Oil and Gas Contractors Based on the *Gross Split PSC* scheme with the 2019 Oil Price

Period	% Initial Split	2019 Oil Price ($)	Progressive Component	% Contractor	% Government
January	63%	12.31	18.17%	81.17%	18.83%
February	63%	11.86	18.29%	81.29%	18.72%
March	63%	11.90	18.28%	81.28%	18.73%
April	0%	0	0%	0%	0%
May	63%	14.17	17.71%	80.71%	19.29%
June	63%	14.02	17.75%	80.75%	19.26%
July	63%	13.41	17.90%	80.90%	19.10%
August	63%	13.58	17.86%	80.86%	19.15%
September	63%	14.01	17.75%	80.75%	19.25%
October	63%	15.40	17.40%	80.40%	19.60%
November	63%	13.42	17.90%	80.90%	19.11%
December	63%	10.97	18.51%	81.51%	18.49%

Source : BUT ABC Ltd., data reprocessed

Based on the data in tables 5.8 and 5.9 above, the monthly amount of contractor split moves according to the oil and gas market price. The value in the progressive component column is calculated using the formula: (85 – 2019 Oil Prices)*0.25. The next step in calculating the profit sharing with the Gross Split PSC scheme is to calculate the Oil and Gas Contractor's Share and the Government's Share based on the oil and gas production profit for the 2019 period. Table 5.10 below indicates the calculation of the Oil and Gas Contractor's Share and the Government's Share:

Table 5.10 Calculation of the 2019 Profit Sharing of Oil Based on the Gross Split PSC in North Natuna Sea Work Area

Period	Lifting	Price	Gross Revenue	% of the Contractor's Share	% of the Government's Share
January	0	0	0	0	0

Period	Lifting	Price	Gross Revenue	% of the Contractor's Share	% of the Government's Share
February	0	0	0	0	0
March	202,311	64.10	12,968,135	8,198,455	4,769,680
April	100,271	69.97	7,015,962	4,332,356	2,683,605
May	0	0	0	0	0
June	112,680	73.19	8,247,049	5,026,576	3,220,473
July	0	0	0	0	0
August	208,901	71.54	14,944,778	9,170,115	5,774,662
September	0	0	0	0	0
October	130,083	80.32	10,448,267	6,182,239	4,266,027
November	0	0	0	0	0
December	107,021	57.21	6,122,671	3,976,063	2,146,609
Total	**861,267**		**59,746,862**	**36,885,806**	**22,861,056**

Source : BUT ABC Ltd., data reprocessed

Table 5.10 above indicates the calculation of the shares of the oil and gas contractor and the government with regard to the total oil production throughout 2019. The next thing is to calculate the shares of the oil and gas contractor and the government with regard to the total natural gas production during 2019 as described in table 5.11 below:

Table 5.11 Calculation of the 2019 Profit Sharing of Gas based on the Gross Split PSC Scheme In North Natuna Sea Work Area

Period	Lifting	Harga	Gross Revenue	% of the Contractor's Share	% of the Government's Share
January	205,717	12.31	2,532,381	2,055,597	476,784
February	382,025	11.86	4,530,818	3,682,875	847,943
March	519,951	11.90	6,187,411	5,028,819	1,158,593
April	0	0	0	0	0
May	520,472	14.17	7,375,094	5,952,254	1,422,840
June	509,391	14.02	7,141,661	5,766,534	1,375,127
July	655,592	13.41	8,791,486	7,112,092	1,679,394
August	757,697	13.58	10,289,529	8,319,598	1,969,930
September	622,922	14.01	8,727,138	7,046,946	1,680,192
October	583,855	15.40	8,991,362	7,229,055	1,762,307
November	718,980	13.42	9,648,716	7,805,329	1,843,387
December	890,235	10.97	9,765,880	7,959,924	1,805,955
Total	**6,366,838**		**83,981,475**	**67,959,023**	**16,022,452**

Source : BUT ABC Ltd., data reprocessed

Based on the data in tables 5.10 and 5.11 above, the 2019 gross revenue of North Natuna Sea Work Area for resulted in the Contractor's Share of $104,844,829 (36,885,806 + 67,959,023) and the Government's Share of $38,883,508, - (22,861,056 + 16,022,452). The next step is to calculate the Total Net Shares of the Oil and Gas Contractor as described in table 5.12 below:

Table 5.12 The 2019 Total Net Share of the Oil and Gas Contractor (BUT ABC Ltd.) With *Gross Split PSC* scheme

Detail	**Total**
Gross Revenue (Oil & Gas)	104,844,829
Operational Cost	(60,097,771)
DMO Full Price	(6,001,360)
DMO Fee	600,136
Total Taxable Revenues	**39,345,834**
Corporate Income Tax	9,836,459
Share After (CIT)	**29,509,376**
Branch Profit Tax	5,901,875
Total Net Share of the Oil and Gas Contractor	**23,607,501**

Source : BUT ABC Ltd., data reprocessed

Based on the data in table 5.12 above, the Total Net Shares of Oil and Gas Contractor received by BUT ABC Ltd. during the 2019 production period is $ 23,607,501,-. After obtaining the total net value of the oil and gas contractor's share, the next step is to calculate the total net value of the government's share with the Gross Split PSC scheme. The following table 5.13 indicates the result of the calculation of the 2019 Government's Total Net Share in North Natuna Sea Work Area:

Table 5.13
The 2019 Total Net Share of the Government in North Natuna Sea 2019 With *Gross Split PSC* Scheme

Net Government Share	
Gross Split	38,883,508
Net DMO	5,401,224
Tax	15,738,334
Total Net Share of the Government	**60,023,066**

Source : BUT ABC Ltd., data reprocessed

Based on the data in table 5.13 above, the 2019 Government's Net Share from North Natuna Sea Work Area based on the calculation of the Gross Split PSC scheme is $60,023,066,-.

The subsection contains the calculation of the 2019 shares of the Government and the Oil and Gas Contractors based on the Cost Recovery PSC and Gross Split PSC schemes in North Natuna Sea Upstream Oil and Gas Industry Work Area with the conclusions as listed in table 5.14 below:

Table 5.14
The Shares of the Government and the Oil and Gas Contractor
(in USD)

Type	**Skema *PSC***	
	Cost Recovery	***Gross Split***
The Government's share	24,315,808	60,023,066
The Oil and Gas' Contractor share	59,314,759	23,607,501

Source : BUT ABC Ltd., data reprocessed

Based on the data in table 5.14 above, there are significant differences between the shares of the Government and the Oil and Gas Contractors when using two different PSC schemes, namely cost recovery and gross split schemes. One of the most significant cause is the existence of operating costs recovered in the Cost Recovery PSC scheme while under the Gross Split PSC scheme, no operating costs are recovered.

VI. CONCLUSION

The conclusion of this study is as follows:
The proportion of the distribution of oil and gas production based on the Cost Recovery PSC scheme and the Gross Split PSC scheme is as follows:

1. From the Government's perspective, the use of the Cost Recovery PSC scheme makes the proportion of the government's revenue share relatively small due to the large burden of recovering operating costs to the contractor. Meanwhile, the use of the Gross Split PSC scheme has significantly increased the proportion of government revenue sharing because under the PSC scheme, the government no longer needs to pay operating costs recovery to the contractor.
2. From the Contractor's perspective, the Cost Recovery PSC scheme makes the proportion of the contractor's profit sharing is relatively larger because the contractor obtains recovered operating costs for managing the oil and gas field from the government. Meanwhile, the adoption of the Gross Split PSC scheme has significantly reduced the proportion of the contractors' profit sharing as there is no recovery of operating costs for managing an oil and gas field from the government to the contractor and all operating costs are borne by the contractor.

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