

The Impact Of AARF (Abandonment And Restoration Funds) Obligation Toward Block Economical Aspect For Contractor Who Taking It Over Previous Non-Obligated Production Sharing Contract (Case In The “B” Block In Aceh)

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Abstract. The objective of this paper is to endorse some concerns about the transition of implementing Peraturan Menteri ESDM No.15 Year 2018 ("Permen 15/2018") considering the right & obligation in existing and previous Production Sharing Contract ("PSC"). The obligation of Contractor to do site restoration has no objection, but the Permen 15/2018 requires an installment targeting the total amount of abandonment and restoration by the time it will be performed. It seems not fair for the New Contractor (in case of termination) since the previous PSC was not required to deposit the fund. It means the new Contractor who performs the restoration will spend higher site restoration cost compared to the benefit they get from the block.

The method that the writer is going to use in this paper is by running a simulation of 'fund obligation' starting from the usage of the assets or facilities until it will be abandoned. The facilities here mean everything needs to be restored, such as processing facilities, drilling/well facilities, pipelines, flowlines, and other supporting facilities. Even though the fund is not obliged to collect (for Old Contractor), the obligation and responsibility of Contractor to do site restoration is a must. Indeed, it is in the PSC (section right and obligation). Furthermore, the Old Contractor had already 'taken more benefit' from the block which should be in line with the responsibility for the environment.

By running this simulation, the writer found that the new Contractor suffers most of the restoration cost. The facility itself was built around the 1970s, the block would had been expired in 2018 and the handover of the entire Participating Interest was done in 2015 when the block produce only the remaining tail gas. The installment of AARF was started in 2016. It is forecasted the facilities to be abandoned entirely during the period of New Contractor operatorship which means 100% of the fund of the New Contractor.

The conclusion of this paper is the obligation of keeping the environment safe and clean is obliged to each and everyone on the planet. Especially in Indonesia, it is stated in the PSC and the Law. To reach this, the writer has some recommendations:

1. Government shall persuade all the stakeholders, especially the Old Contractor to comply with this obligation.

2. Even though the obligation of fund installment does not commit the Old Contractor, it could be calculated linear based on the operatorship period to see the relative fund the Old Contractor 'responsible' for the block.

This study had been initially discussed with the Old Contractor, but neither commitment nor agreement reached yet until now to the above ASR obligation.

Keyword(s): ASR, AARF.

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1. Background

The "B" block is located in North Aceh and initially operated by Asamera in the 1960s before it had been transferred the title to Mobil Oil Indonesia Inc (MOI) in 1968. It was also known as giant block as it discovered huge 17 tcf of natural gas proven reserve during Asamera's first 6-year exploration period. After taking over the operatorship, MOI and the Government of Indonesia (Pertamina as Regulator) agreed to develop the giant block and monetize it in the phase of liquid or known as Liquefied Natural Gas (LNG). The main reason is that there are potential markets overseas while the local industry is not ready yet to absorb the natural gas.

MOI and Pertamina then amended the Production Sharing Contract (PSC) to match between engineering requirement and the economic value of the project. It consists of terms of the contract, LNG buyer and the capacity of production facilities to make it happen. Since the PSC form is *Cost Recovery Scheme*, everything needs to be clear in terms of what could be borne and what is not.

Big capacity of production could mean a lot of producing wells and production facilities to be built. At the end of operation period, all those facilities need to be dismantled in order to keep the environment safe by abandonment program. It is commitment of everybody including oil & gas industry as we know really concern about it. Furthermore, big facilities are more pricey for their abandonment. It must fit with the block economical value from start until the end, the outlook of this should have been calculated before Final Investment Decision (FID) decided because it is part of the development cost.

Looking at the PSC of MOI, obligation toward HSE (Health, Safety, Environment) is already committed in the clause of right and obligation. However, it did not state technically how it will be executed. In this paper, we would like to focus on the technical aspect of funding the abandonment program or also known as Abandonment and Restoration Fund (AARF). More specifically regarding old oil field after it has been handed over to the new operator that imposed by new regulation to prepare for the whole funding program and gear.

2. Methodology

Currently, the Abandonment and Site Restoration (ASR) is based on Regulation of Ministry of Energy and Mineral Resources Republic of Indonesia No.15 Year 2018 ("Permen 15/2018"). Technically, the calculation is linear with the operation period, starting from its first gas delivery until the estimated time for the facilities to be dismantled. In this paper, the writer divides the method into period of operatorship (which is currently used in Indonesia) and also based on the production profile. Even though the production profile is not applicable yet, an additional point of view related to the topic is magnetic to be further discussed.

2.1 Period of Operatorship

The “B” block was initially operated by Asamera in 1961. During the exploration period, Asamera discovered potential hydrocarbon in the block. MOI issued Letter of Intent (LoI) in 1968 for the transfer of title to MOI (we have no info regarding the reason of transfer title). The block then had first gas delivery in 1978 for the LNG export to Japan. This PSC was valid until 1998. Then it had been extended for 20 years until 2018. In 2014, Exxon Mobil Oil Indonesia (successor of Mobil Oil Inc) agreed to sell its 100% Participating interest in the block to Pertamina. The block was then operated by Pertamina Hulu Energi (PHE) NSB from 2015 until 2018. After that, PHE NSB was assigned continue of operating the block until 2021 before it had been terminated. Starting in 2021, the block is operated by PT Pema Global Energy (PGE) for the next 20 years.

Here we summarize the operatorship timeline for easier understanding.

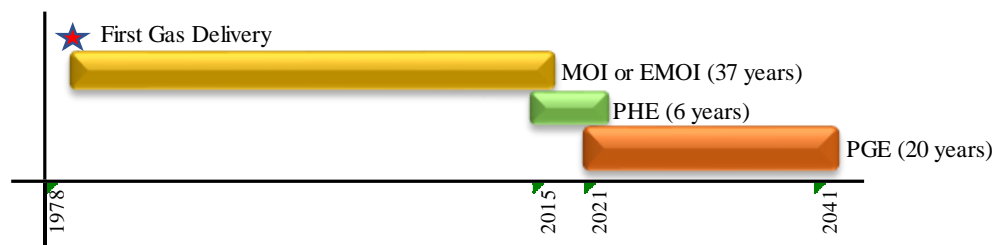


Figure 1. Timeline of Operatorship

Based on the timeline of operation of the block, MOI/EMOI is the longest operator until now. Referring to the method of ASR fund calculation, it starts from the first gas delivery period until the abandonment time. From this point of view, the fund of ASR should be calculated as below.

$$\text{MOI \& EMOI ASR Fund} = \text{Total Restoration Cost} \times \frac{(37 \text{ years})}{(63 \text{ years})} \quad (1)$$

The 63-years is coming from the entire operatorship time with an assumption the whole facilities need to be abandoned at the end of that period.

2.2 Production Profile and Reserve

Since we focus on the economical aspect of the block, we need to consider the whole production lifecycle. The main idea of having economic calculation before developing oil and gas block is to have the parameter and business point of view before investing money, simply matching cost against revenue. The writers try to get the production profile since first gas-in until now, but the time is very limited to retrieve all data so remaining reserve to produce hopefully can be the substitute.

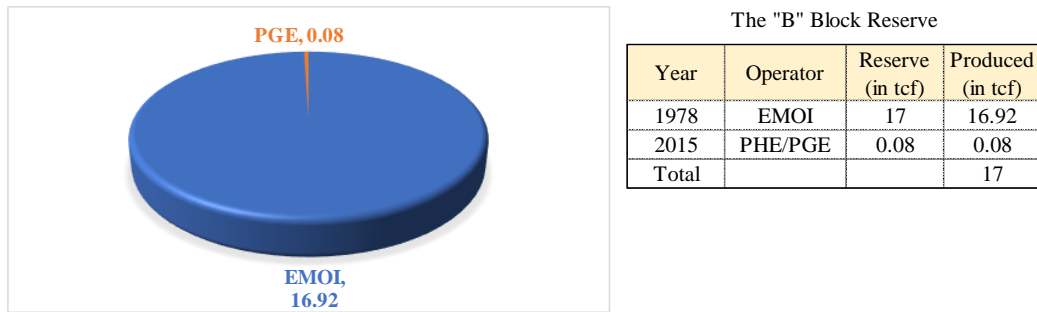


Figure 2. The "B" Block Reserve

Based on the above figure, we can see the total proven reserve of the block is 17 tcf. It remains only 0,08 tcf in 2015 when PHE NSB operated the block.

Back to the case of obligation of abandonment, peak production time was during MOI/EMOI operatorship which also means maximum capacity usage of the facilities. It is very reasonable to have more responsibilities in terms of abandonment cost.

On the other hand, what is happening recently is the whole ASR fund is borne by PHE and PGE. This is the issue that impacts on block's economical aspect since the huge abandonment cost from huge facilities.

3. Legal Point of View

3.1 Peraturan Menteri ESDM No.15 ("Permen 15/2018") Year 2018

Permen 15/2018 is the derived rule of Government Regulation (GR) No.79 Year 2010 Jo GR No.27 Year 2017 Article 17. These regulations are talking about the obligation of abandonment and site restoration activities and its fund. The fund is known as ASR or AARF. In the latest committed PSC (after 2010 era), this clause had been inserted in the PSC. However, we still have many active PSCs that were signed before this regulation was issued. The stressing point of writer, in this case, is not only in the AARF (which in some points of view might be still debatable), but the most important thing is the obligation of performing the site restoration is a must no matter when the PSC was signed. This will be elaborated on the next part below.

3.2 Production Sharing Contract (PSC) for Contract Year 1988

In this period of PSC, regulation about ASR fund is not yet issued. It means all oil and gas companies have no obligation to deposit installment of their ASR fund during this period. However, the obligation of keeping the environment in their HSE program or in this case is abandonment program is a must. Referring to the PSC of MOI/EMOI as below:
PSC Area "B", Section V, Point 5.2 (d)

"Contractor shall be responsible for the preparation and execution of the Work Program, which shall be implemented in a workmanlike manner and by scientific methods, and Contractor shall take the necessary precautions for protection of navigation and fishing and shall prevent extensive pollution of the sea or rivers. It is also understood that the execution of the Work Program shall be exercised so as not to conflict with Government obligations imposed on the Government by International Law."

The above clause is quoted from PSC period 1998-2018 of MOI/EMOI. As we can see, there is no commitment regarding the ASR fund, but it is clearly stated their spirit is to keep the environment and shall do all the work in workmanlike manner. To make it short, MOI/EMOI has the obligation to abandon its facilities. If the lifetime of facilities ended in their period, they are responsible to perform the abandonment. If it is after their period, for the sake of ethical business and moral, MOI/EMOI shall deposit the estimated abandonment cost as we elaborate in point 2.1 or 2.2 above.

3.3 Latest Production Sharing Contract (PSC)

The writer quotes the clause of PSC in the PGE operatorship era, the AARF has been clearly implemented and committed in the contract. It is good news if we see from Government's point of view because even it is a handover-terminated of non-obliged AARF PSC, the environment and abandonment issue will still be resolved in the new era of the contract. However, for business sustainability in contractor's point of view, it is a huge additional cost that impacts their overall economic valuation.

Here is the PSC clause for the AARF:

PSC Area "B", Section V, Point 5.2.6 (e)

*"The amount of money estimated to be required for such abandonment and restoration program will be called **Abandonment and Restoration Funds or AARF**, shall be allocated and shall be determined each Year in conjunction with the Budget of Operating Costs for the POD and Work Program and Budget of Operating Costs and be reviewed in the subsequent Years in accordance with Exhibit C....."*

4. Plug and Abandon Activities and Estimated Budget

The work of abandonment includes all the facilities on site. The aim of doing this is to restore the site and keep the environment. In general, we can divide the main facilities to be abandoned into well facilities and processing facilities. Since the "B" block is onshore, we do not have any offshore facilities to be dismantled.

4.1. Well Facilities

In our record of well facilities, there are grouping of well based on the status of production.

Table 1. Well Status in the "B" Block

Well Status	No. of Well
Permanent Abandon	4
Temporary Abandon	48
Producing	52
Shut-In	9
Temporary Shut-In	41
Injection	1
Observation	5
Total Well	160

Most of the well in the block is already depleted, so P&A inspection really pressing to comply with safety and environmental standard. Referring to the above table we can see at least the 48 temporary abandon well could be Plugged & Abandoned, but only 4 had been done during PHE operatorship. The other wells status needs to be checked in more detail.



4.2. Processing Facilities

The writer does not have much information and data about these processing facilities. But with current production profile, PGE needs to adjust some of facilities since the capacity is much lower now. Need detail and further verification and calculation to know the function and lifecycle of each processing facility.

The estimated amount of above entire Plug and Abandon (both well & processing facilities) activities cost US\$201,374,752 remaining for 20 years. Currently, the reserve of that cost is mostly under the PGE operatorship.

5. Conclusion & Recommendation

5.1. Conclusion

The elaboration of this paper concludes some points:

- a. The commitment to keep the environment safe is everybody's responsibility. Especially in oil & gas, it is becoming the top concern and very fundamental aspect of establishing the industry.
- b. Contract is a commitment that ties parties to the mutual agreement and respect. Moreover, there are also ethical value that sometimes invisible inside the agreement. In this case of abandonment responsibility, we might end up with a long unfinished discussion if we only refer to the formal contract agreement, but mutual understanding of the ethical business may be the best way out.

5.2. Recommendation

We have some points of recommendation probably that could be considered as options for the future:

- a. In the formulation of defining the amount of installment could also be considered the graph of production profile. It will distribute the cost of abandonment across years of operatorship or even in more specific window. This seems more fair to maintain principle of cost against revenue.
- b. There are some contractors in Indonesia with similar cases (termination). By having a long discussion and mutual understanding, they contribute some money to the ASR escrow account even though it is not stated clearly in the contract. Following this success story, the probability of having this issue solved is always open and we could learn from this for the other block.