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History of Joint Operation Contract in Indonesia

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ABSTRACT

The background of the Joint Operation Contract (JOC) in Indonesia is as part of the energy policy. On the last few decades the Indonesian government intends to implement energy diversification by intensifying the utilization of geothermal resources located in Indonesia, especially for power generation. To accelerate the development of geothermal resources without annoying the applicable laws, and as well as fuel savings policy to support energy diversification, the Government invited private companies to cooperate with PERTAMINA (Perusahaan Minyak dan Gas Bumi Negara) an oil and gas state company to develop in the upstream side of the geothermal field to produce steam and in the downstream side to build Geothermal Power Plant (PLTP) to convert steam into electricity in the form of JOC.

In relation to the JOC to ensure the purchase of production from the implementation of the JOC is made also Energy Sales Contract (ESC) between PERTAMINA and the Contractors with the buyer in this case is the State Electricity Company (PLN). In its development, there are two (2) kinds of JOC that has been produced by PERTAMINA since 1982. The first model is the JOC produced before 1993, the first model of this co-operation is only concerned with the development of the upstream side in the form of "Build Own and Operate" (BOO). The second model is the JOC produced after 1993, in the form of this cooperation PERTAMINA and contractors in addition to developing the upstream side also develop downstream side in the form of BOO or in the form of "Build Own and Transfer" (BOT). Though past cooperation model, the development of geothermal resource utilization in Indonesia becomes faster.

1. INTRODUCTION

Joint Operation Contract (JOC) is a joint operation agreement between PERTAMINA and CONTRACTOR where PERTAMINA shall have and be responsible for the management of the geothermal operations and CONTRACTOR shall finance expenditures for geothermal operations. PERTAMINA is the holder of an authority issued by the Government of Indonesia to undertake exploration and exploitation of geothermal energy resources and generate electricity from geothermal energy resources in 15 geothermal prospect areas in Indonesia. In JOC, PERTAMINA have the responsibility as the management of the geothermal area and the Contractor as the operator of geothermal area who produces the geothermal steam and generates electricity. In the history to develop geothermal energy, PERTAMINA facing alot of obstacles including limitation in geothermal marketing and financing because the idea that geothermal energy is not yet competitive with other energy, this idea caused to the utilization of geothermal energy by the end of 1990 in Indonesia to running slowly. To accelerate the development of geothermal energy without prejudice to the applicable laws, also as well as fuel saving efforts to support energy diversification, Indonesian government invited private companies to cooperate with PERTAMINA to develop geothermal energy both in upsteam and downstream areas in form of JOC. On the upstream side is to develop a geothermal field and exploit to produce steam and on the downstream side is to build Geothermal Power Plant to convert steam into electricity.

There have been several private companies that already sign the JOC in cooperate with PERTAMINA to develop geothermal prospect area. They are shown in Table 1.

Table.1: Geothermal Area in Form of Joint Operation Contract

No.	Project	Contract Capacity	CONTRACTOR
1	Bedugul (Bali)	220 MW	Bali Energy Ltd.
2	Darajat (West Java)	330 MW	Amoseas Indonesia Inc. → Chevron Geothermal Indonesia Ltd.
3	Karaha & Talaga Bodas (West Java)	220 MW	Karaha Bodas Company → PT. Pertamina Geothermal Energy (Own operation)
4	Salak (West Java)	400 MW	Unocal Geothermal Indonesia → Chevron Geothermal Salak Ltd.
5	Sarulla (North Sumatera)	330 MW	Unocal North Sumatera Geothermal → Sarulla Operation Ltd.
6	Wayang Windu (West Java)	400 MW	Magma Nusantara Ltd. →

			Star Energy Geothermal (Wayang Windu) Ltd.

But on current conditions, there are three geothermal areas that already produce and generate electricity. They are Darajat geothermal area with 271 MW installed capacity, Salak geothermal area with 375 MW installed capacity, and Wayang Windu area with 227 MW installed capacity. For the Bedugul geothermal area, under current conditions still does not yet produce in case of several problems with local goverment regulatory. For the Sarulla geothermal area, will start over again the exploitation phase due to handing over the management rights for JOC from PLN to Sarulla Operations Ltd. (SOL). For Karaha & Talaga Bodas, PGE decide to operate the field by itself.

2. REGULATORY HISTORY FOR THE DEVELOPMENT OF GEOTHERMAL IN INDONESIA

There are several Law and Presidential Decrees that regulates the development of geothermal energy in Indonesia, including Presidential Decree No.22/1981, Presidential Decree No.45/1991, Presidential Decree No.49/1991, Presidential Decree No.76/2000, and Geothermal Law No.27/2003.

The important point in Presidential Decree No.22/1981 explained that the goverment of Indonesia assigns geothermal concessions to PERTAMINA for exploration and exploitation the resources to generate electricity. PERTAMINA compulsory sells the geothermal energy/electricity to the Electricity State Company. Also explained that the implementation of works that have not been or can not be carried out by PERTAMINA, the Minister of Mines and Energy may appoint another party as a Contractor to cooperate with PERTAMINA in form of JOC. In the implementation of geothermal resources consessions by PERTAMINA applicable Law No.44 Prp/1960 and Law No.8/1971, except in the case of corporation tax and taxes on interest, dividends and royalty. The corporation tax and taxes on interest, dividends and royalty that are concerned with the implementation of geothermal resources consessions are regulated by Presidential Decree.

In 1991, the published Presidential Decree No.45/1991 changed several dictums in Presidential Decree No.22/1981. The changes explained that if necessary, the Minister of Mines and Energy can give the small scale geothermal concession to other agency, state-owned company, and national entity who have legal status including cooperative for electricity purposes and other business. And PERTAMINA can sell geothermal steam or electricity to Electric State Company, other agency, state-owned company, and national entity who have legal status including cooperative.

Also in 1991, published another Presidential Decree No.49/1991 about the treatment of income tax, value added tax and other taxes for the implementation of geothermal concession to generate energy/electricity. In this Presidential Decree it defined that the Enterpreneurs are PERTAMINA, JOC contractor and the geothermal concessions permit holder and for JOC Contractor and permit holder should be a form of business entity itself . For the enterpreneur charged with income tax, value added tax on goods and services and sales tax on luxury goods, property tax, duties, stam duty and other taxes accordances with aplicable laws. The enterpreneur obligatory deposit to the account of state Finance Department for the Goverment share as the implementation of geothermal concessions in the amount of 34% from net operating income.

Presidential Decree No.76/2000 is about undertaking geothermal resources for electricity power plant. In Presidential Decree No.76/2000 it defines what is meant about exploration, exploitation, electricity power plant, license, rights, obligations, determination and reversion the concesions area, government revenues, electricity selling price, safety and environment, sanctions, duration dan termination, guidance and supervision, transitional provisions, and closing. Geothermal in Indonesia is also regualted under Law No.27/2003. In this Law it describes the general condition relating to geothermal, principles and objectives, authorization of geothermal mining, managemenet authority of geothermal mining include government authority and local goverment authority, working area, operational activity and utilization, exploratioan and exploitation, utilization of associated mineral, land use, license, rights and obligations for geothermal working area license holder, goverment revenues, guidance and supervision, investigation, criminal provisions, transitional provisions, and closing provisions. All the Presidential Decrees and Law described above are that which underlie the development of geothermal energy in Indonesia to date.

3. BUSINESS SCHEME

There are two kinds of JOC that has been produced by PERTAMINA since 1982. The first model is the JOC produced before 1993, the first model of this co-operation is only concerned with the development of the upstream side in the form of "Build Own and Operate" (BOO). The second model is the JOC produced after 1993, in the form of this cooperation, PERTAMINA and contractors in addition to developing the upstream side also develop downstream side in the form of BOO or in the form of "Build Own and Transfer" (BOT). Through past cooperation models, the development of geothermal resource utilization in Indonesia becomes faster. Figure.1 shows the illustration for a geothermal business scheme in Indonesia for BOO and BOT model.

In JOC, contractors who use the BOO model are Chevron Geothermal Salak Ltd. (CGS) in the Salak geothermal area and Chevron Geothermal Indonesia Ltd. (CGI) in the Darajat geothermal area. Both CGS and CGI produce the geothermal steam and then sell the steam to PT Indonesia Power (PT IP) which is a subsidiary company of PLN. PT IP generate the elctricity from geothermal steam and then sell it to PLN which then distributes the elctricity to the consumer. In term of JOC, the BOO model has been used in Salak Geothermal Power Plant Unit-1,2,3 (3 x 60 MW) and in Darajat Geothermal Power Plant unit-1 (1 x 55 MW).

BOT model is used also by CGI, CGS and Star Energy Geothermal (Wayang Windu) Ltd. (SEGWWL) in Wayang Windu geothermal area. In the BOT model, contractors produce geothermal steam and generate the electricity using their own geothermal power plant and then sell the elctricity to PLN which then PLN distributes the elctricity to consumer. The BOT model has been used for Salak Geothermal Power Plant Unit-4,5,6 (3 x 65.6 MW), Darajat Geothermal Power Plant unit-2 (1 x 95 MW) and unit-3 (1 x 121 MW), and Wayang Windu Geothermal Power Plant unit-1 (1 x 110 MW) and unit-2 (1 x 117 MW). Figure 2 shows the steam and electricity selling point for geothermal business transaction in BOO and BOT model. The green dot in Figure 2 represents the selling point which is near the power plant for BOO model and before the transmission line for BOT model.

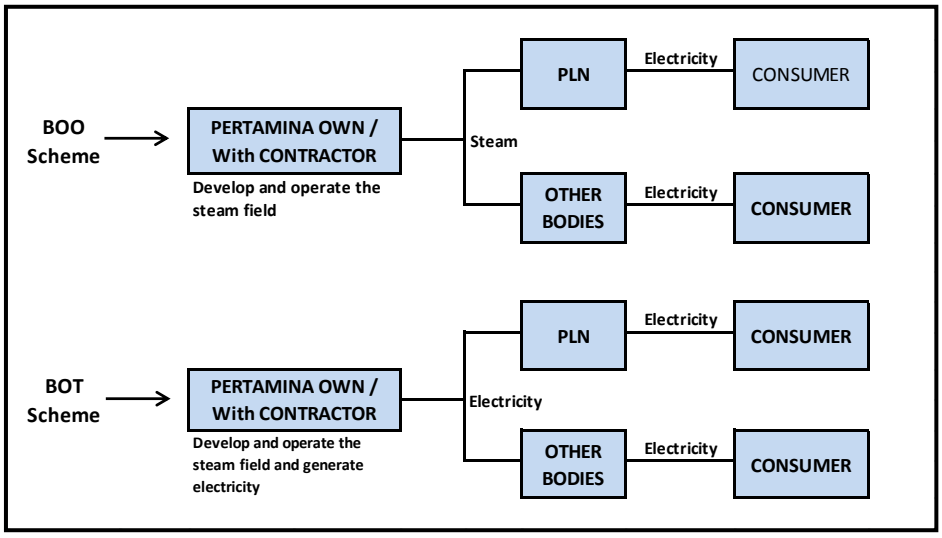

Figure.1: Geothermal Business Scheme in Indonesia (Pramono, 2010)

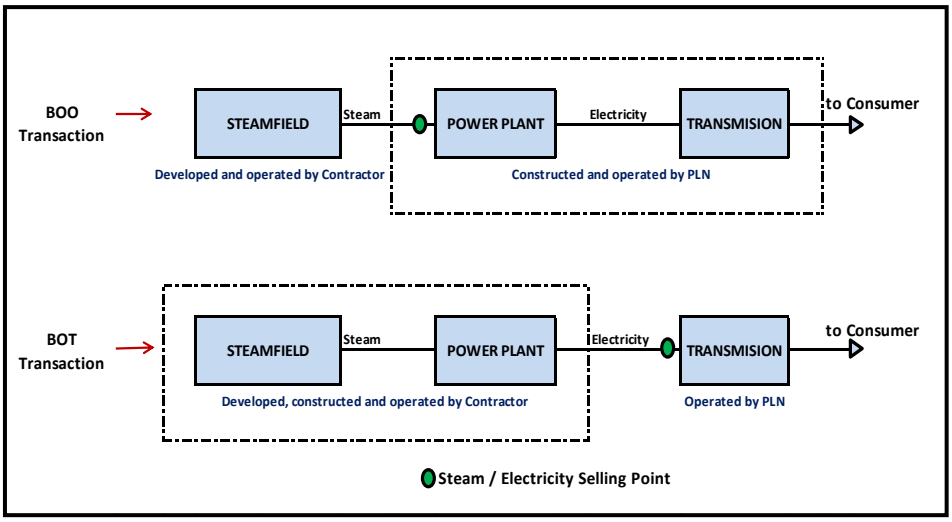

Figure.2: Geothermal Business Transaction (Pramono, 2010)

4. DEVELOPMENT OF JOC FIELD

From the beginning of JOC signing until current conditions, three geothermal fields in Indonesia already develop and generate electricity. Salak geothermal field have 6 unit geothermal power plants with total installed capacity 375 MW and operated by Chevron Geothermal Salak Ltd. Darajat geothermal field have 3 unit geothermal power plants with total installed capacity 271 MW operated by Chevron Geothermal Indonesia, Ltd. Wayang Windu geothermal field have 2 unit geothermal power plants with total installed capacity 227 MW and operated by Star Energy Geothermal (Wayang Windu) Ltd.

The first JOC signing was for Salak Geothermal area, the original JOC was signed in February 11th 1982 between PERTAMINA and Unocal Geothermal Indonesia (UGI). The original contract for Salak was first amended in November 19th 1986 and second amended in December 26th 1988. In November 16th 1994, the contract was amended again and restated with term of contract 420 month since effective date. The last contract amended for Salak was signed in July 22nd 2002 between PERTAMINA with UGI and DSPL (Dayabumi Salak Pratama Ltd.) a subsidiary company form UGI that handles electricity generation with a term of contract until November 30th 2040. The first geothermal power plant in Salak operated in 1994 with 110 MW installed capacity and then in 1997, added 220 MW geothermal power plants. Current conditions, UGI already changed to CGS as the Contractor for Salak geothermal field and operated with total capacity 375 MW.

In Darajat geothermal area, the original JOC signed in November 16th 1984 between PERTAMINA and Amoseas Indonesia. In January 15th 1996, the original JOC was amended and restated and signed between PERTAMINA with Chevron and Texaco, with term of contract 564 month since effective date. The last contract amended in February 7th 2003 between PERTAMINA with Chevron, Texaco, and PT. Darajat Geothermal Indonesia, with term of contract 684 months since effective date (November 16th 2041). Darajat geothermal power plant unit-1 operated in 1994 with 55 MW installed capacity, unit-2 operated in 2000 with 95 MW installed capacity, and unit-3 operated in 2007 with 110 MW installed capacity. Current conditions, Darajat geothermal area operated by CGI and Darajat unit-3 already upgrade and can generate electricity until 121 MW.

Wayang Windu geothermal area had the original JOC signed in December 2nd 1994 between PERTAMINA and Mandala Magma Nusantara, B.V. (MMN) with term of contract 504 months since effective date or until December 2nd 2036, then amended in November 21st 2006 between PERTAMINA and Magma Nusantara Ltd. (MNL). Current condition, Wayang Windu geothermal area operated by SEGWWL. In 2000, first unit geothermal power plant operated in Wayang Windu with 110 MW installed capacity and added another unit in 2009 with additional 117 MW installed capacity.

Table .2 : PERTAMINA Joint Operation Contract

No.	Agreements	Date of Contract	Parties	Term of Contract
Salak				
1	Original Joint Operation Contract	11-Feb-82		
2	Amended	19-Nov-86		
3	Amended	26-Dec-88		
4	Amended and Restated	16-Nov-94	PERTAMINA and UGI	420 months since effective date (16 Nov 2029)
5	Amendment No.1 to Amended and Restated	22-Jul-02	PERTAMINA, UGI and DSPL	30 November 2040
Darajat				
1	Original Joint Operation Contract	16-Nov-84	PERTAMINA and Amoseas Indonesia	
2	Amended and Restated	15-Jan-96	PERTAMINA, Chevron and Texaco	564 months since effective date (16 Nov 2031)
3	Amendment No.1 to Amended and Restated	7-Feb-03	PERTAMINA, Chevron, Texaco and DGI	684 months since effective date (16 Nov 2041)
Wayang Windu				
1	Original Joint Operation Contract	2-Dec-94	PERTAMINA and MMN	504 months since effective date (16 Dec 2036)
2	Amendment	21-Nov-06	PERTAMINA and MNL	504 months since effective date (16 Dec 2036)

Note :

UGI = Unocal Geothermal Indonesia, Ltd. *Texaco = Texaco Darajat, Ltd.* *MMN = Mandala Magma Nusantara, B.V.*

DSPL = Dayabumi Salak Pratama, Ltd. *DGI = PT. Darajat Geothermal Indonesia* *MNL = Magma Nusantara, Ltd.*

Chevron = Chevron Darajat, Ltd.

5. CONCLUSIONS

Joint Operation Contract was made to accelerate the development of geothermal resources without annoying the applicable laws, and as well as fuel savings policy to support energy diversification. Indonesian government intends to implement energy diversification by intensifying the utilization of geothermal resources located in Indonesia, especially for power generation. PERTAMINA as the assign party from Government of Indonesia to undertaking geothermal resource has made a contract with private companies to exploit the resources. PERTAMINA has the responsibility as the management of the geothermal area and the contractor as the operator of geothermal area who produce the geothermal steam and generate electricity.

There are two kinds of JOC that has been produced by PERTAMINA since 1982. The first model is the JOC produced before 1993, the first model of this co-operation is only concerned with the development of the upstream side in the form of "Build Own and Operate" (BOO). The second model is the JOC produced after 1993, in the form of this cooperation PERTAMINA and contractors in addition to developing the upstream side also develop downstream side in the form of BOO or in the form of "Build Own and Transfer" (BOT). On current conditions under JOC, there are three geothermal area that already produce and generate electricity that is Darajat geothermal area with 271 MW installed capacity, Salak geothermal area with 375 MW installed capacity, and Wayang Windu area with 227 MW installed capacity.

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