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Developing Geothermal Energy in a Changing Regulatory Environment

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ABSTRACT

From the beginning of development of Indonesia's abundant geothermal reserves in the early 1980s, a key success factor for developers has been the ability to cope with a constantly changing regulatory and economic environment. This paper will describe some of the challenges faced by private developers, the impact of those challenges have had on business decisions and strategies for succeeding over the long – term investment periods required for a geothermal project.

Prior to 2003, geothermal development was regulated under a series of presidential decrees which provided the legal basis for private developers to enter into contractual arrangement with the state oil company, Pertamina, which had the exclusive rights on development of all geothermal opportunities in Indonesia. Those presidential decrees provided certainty to developers of their contractual rights and obligations and certainty in the fiscal terms applicable to geothermal development.

Following the change of government in 1998 and the enactment of a new geothermal law in 2003, a new regulatory structure was created that transferred the development rights for geothermal from Pertamina back to Government. This new law brought also a significant change in which a "business license" is acquired through a competitive tender process instead of a "joint operating contract" (JOC). The new Law explicitly grandfathered the terms and conditions of all geothermal development contracts already in existence, but left many of the details unclear as to how this would be accomplished.

In addition, new laws imposing more autonomy to regional and local governments have created a new set of stakeholders with their own expectations. These new stakeholder, whose perceptions government perceptions toward geothermal development located within their areas are increasingly important in sustaining a profitable business, lack an understanding of how the old contracts would be interpreted in the new legal structure. The changes in regulations and stakeholders expectations have introduced a new level of uncertainty to investors under both new law and the prior laws.

In the central government, new regulations sometimes have been interpreted differently by various parties. Local stakeholders' interpretations of their regulatory rights have sometimes led to conflicts with investors' contractual rights. Several specific examples of these regulation conflicts and their resolutions are elaborated in this paper.

1. INTRODUCTION

Chevron has so far developed a total of 636 MW of geothermal energy production capacity in Indonesia, consisting of the 377 MW Gunung Salak Geothermal Project and the 259 MW Darajat Geothermal Project. These fields were developed under contracts signed in 1982 between Pertamina and Unocal and 1984 between Pertamina and Chevron, respectively. Following the acquisition of Unocal in 2005 by Chevron, these projects are now operated under a single management. Geothermal energy and electricity are sold under contract to the State Electric Company (Perusahaan Listrik Negara, or PLN). The term of these contracts runs for several more decades.

Over the years since the contracts were first signed, numerous events have occurred which have tested the long-term commercial viability of the projects. Numerous commercial, legal and regulatory obstacles have had to be overcome, and new obstacles continue to arise. To have a sustainable business, project developers and operators should anticipate and must be able to adapt to these challenges over the long contract lives of a geothermal project.

The major challenges that have had to be addressed so far in the life of the Darajat and Salak contracts are discussed below. They can be categorized into those challenges driven from changes in the legal and regulatory environment, the evolution of the nature of the contract counter-parties, land use regulations, tax policy, local community expectations and both evolutionary and abrupt changes in Indonesia's overall business climate.

2. CHANGES IN GOVERNMENT AFTER FINANCIAL CRISIS

Indonesia's system of government from its official independence from Dutch colonial control in 1945 has been nominally democratic and consists of a president, legislature, and a separate judiciary. Indonesia's 33 provinces and multiple regencies within the provinces have a similar governing setup. Prior to 1997, the Indonesian government was centrally controlled, with a strong executive function controlled by the President. In practice, power was strongly held by the Presidency and the national legislature was largely compliant to the wishes of the Executive.

The devastating effects of the Asian financial crisis of 1997 and 1998 to Indonesia's economy has led to the change in the government system from centralized into decentralized control, transferring more autonomy to the provinces and regencies within each province.

The effects of this decentralization have led to many of the changes that have affected the operation of existing geothermal fields today and somehow driven the change into the current investment regulatory framework of the geothermal development.

3. EVOLUTION OF CONTRACTUAL COUNTERPARTIES

Since Joint operation contract was signed in the early 1980s, along with the time changed also contractual counterparties transformed as well.

3.1 Ministry of Energy and Mineral Resources (MEMR)

Under Indonesia's constitution, the mineral resources of the country belong to the people of Indonesia and are administered by the government. The Ministry of Mines and Energy is the arm of the government charged with this role. The geothermal energy sector was originally regulated under the Directorate General of Oil and Gas under this Ministry.

During this era, the state oil company, Pertamina, was an arm of the Ministry that had a crucial role also in both promoting and controlling geothermal development, whilst the Directorate General of Oil and Gas regulated mainly the environment and safety performance of the geothermal projects.

In 2003 a separate Directorate to regulate the development of geothermal energy and mining was created within the Ministry, distinct from the oil and gas regulatory authority. This directorate was further transformed into the Directorate for Minerals, Coal and Geothermal (MINERBAPABUM) in 2005 and has assumed many of the administrative functions for the geothermal sector formerly performed by Pertamina and Directorate for Oil and Gas.

3.2 Pertamina

Indonesia's state oil company (Perusahaan Pertambangan Minyak dan Gas Bumi Negara, or Pertamina), was, prior to 2003, an integral part of the Ministry of Mines and Energy, and was assigned the obligation to develop and administer the geothermal resources, the same function it performed in the oil and gas sector. Pertamina was allowed to enter into contracts, known as Joint Operations Contracts, or JOCs, with private companies to enable private investment in the geothermal sector. This form of contract is the basis for all geothermal projects currently in operation.

The form of Pertamina changed over time from an arm of the government to a limited liability state-owned company in 2003. The geothermal group within Pertamina was then separated from the parent Pertamina in early 2007 and given the status of a separate government-owned limited liability company called PT. Pertamina Geothermal Energy (PGE).

Recently there has been idea plan among the government institutions to combine the geothermal assets directly controlled under state-owned enterprises in order to create a larger and more viable entity. The evolving role of Pertamina, the signatory party representing the government to the current contracts for existing geothermal fields becomes a business entity, raises legal questions that have yet to be fully resolved.

3.3 PLN

Similarly, all electricity production in the country was controlled by the state-owned electricity enterprise, Perusahaan Umum Listrik Negara, (PLN). Initially, PLN was a purchaser of geothermal energy which then converted into electricity in its own facilities. In the early 1990s PLN was authorized to enter into contracts for the purchase of electricity generated by private parties from geothermal resources.

Similar to Pertamina, PLN was also converted to a limited liability company in the 1990s. However, it was also further divided into separate subsidiaries for power generation and transmission distribution, under the umbrella of the parent company. While PLN's contractual obligations remain with the parent company, PLN's operating subsidiaries, which are the parties interacting directly with the developers, have a fair degree of operating autonomy, and their perceived interests often are at odds with the performance of PLN under the contracts for geothermal energy purchase. This has led to difficulties and delays in resolving routine contractual issues, and has necessitated continuous efforts to facilitate communications among various PLN stakeholders.

In recent years plans have been discussed within the Indonesian government to partially privatize PLN's generation subsidiaries though public stock offerings. The implications of privatizing one part of PLN that operates geothermal Power plants using geothermal energy purchased by another part of PLN will surely necessitate more discussions in the future.

4. CHANGES IN LEGAL AND REGULATORY ENVIRONMENT

Geothermal legal and regulatory environment were changed from time to time in accordance with primary energy utilization and demand in Indonesia.

4.1 Regulations on Geothermal in the 1980s Era

Prior to the 1980s only Pertamina was authorized by the Indonesia Government to develop geothermal energy. To attract private investment in the sector, a Presidential decree was issued in the early 1980s that provided a mechanism for a private company to enter into a Joint Operation Contract (JOC) with Pertamina.

Under the JOC structure, a contractor (private developer) under Pertamina's supervision, developed geothermal energy for sale to PLN which owned and operated power plants. At that time, PLN was the only legally-authorized electricity producer, and was the sole customer for the geothermal energy produced.

Pertamina supervised its contractors (e.g. annual budget approvals, liaison with Ministry of Manpower for work permits and labor law compliance, etc.) and in return entitled for a small share of net operating income from the project. The contract provisions for duty-free of importation were realized using Pertamina's authority as an arm of the government.

4.2 Geothermal Regulatory Changes since the 1990s

In conjunction with the growing demand of electricity in the early 1990s, greater than the government's capacity to supply, provisions were then made for private investment in the electricity sector. A Presidential Decree issued in 1991 specified that geothermal energy development and the conversion of that energy to electricity could be undertaken as a total project, allowing the geothermal developer to generate electricity for sale to PLN.

Since then, substantial investment occurred as new companies entered the geothermal field and signed JOCs

with Pertamina and Energy Sales Contracts (ESCs) with PLN.

4.3 Regulatory Changes after the Asian Financial Crisis (1998)

In the immediate aftermath of the financial crisis, the government issued a presidential decree ordering the renegotiation or cancellation of the existing geothermal contracts as well as other power purchase agreement signed by PLN. This put those projects in operation or under active development into distress, as the validity of the contract on which their investment had been made were called into question.

Geothermal developers variously worked through this time by either accepting the cancellation of their projects, if no significant development had occurred, or by renegotiating the long-term contracts with Pertamina and PLN on a more viable basis, giving up large amounts of value in the process. Some chose to pursue arbitration of their claims against Pertamina and the government.

After the crisis, government desired to promote more competition in the energy sector, and removed Pertamina's status as monopoly developer of oil and gas as well as geothermal. This regulation led to basic change of geothermal development in Indonesia, in which geothermal mining right granted to Pertamina was transferred back to Government. However, the newly-formed PGE was given the preferential development rights to several highly prospective geothermal fields, and was still assigned the role of contract administrator for the existing geothermal JOCs developed under the old Laws.

With the issuance of Oil & Gas Law No. 22/2001 and the new Geothermal Law passed in 2003 the role of Pertamina as the sole developer of future geothermal prospects has been removed. Subsequently, a new directorate was created to oversee the existing geothermal contracts and undertake a new round of development of new geothermal resources.

This Geothermal Law explicitly grandfathered all of the terms and conditions from the old geothermal Legal structure for existing projects. However, the details of the mechanisms for realizing these terms were to be clarified in conforming regulations.

Some of Pertamina's role in geothermal energy oversight was transferred to newly-created directorate under MEMR, M INERBAPABUM. The transition of supervisory role from Pertamina to MINERBAPABUM still leaves some problems. For example, the change of PGE from a geothermal division of Pertamina to a separate limited liability company led to difficulty in realizing the continuation of duty-free importation. As PGE was no longer officially a part of the parent Pertamina, it no longer had the access to the parent's duty-free importation facility. As a result, some parts of the Customs department felt they were unable to allow the duty-free importation of goods needed to construct and operate the geothermal fields under contract with PGE, and declined to release goods from Customs. This caused substantial delays to ongoing construction. Under Indonesian Law, the appropriateness of a government levy can be challenged only if the disputed tax is paid in full. Therefore, developers had to pay the import duty improperly levied on goods in order to contest those duties using the legal process. These duties were paid, and relief was sought in the Ministries of Finance and Energy.

While the plain intent of the Law was to allow the duty-free importation, a number of other rulings needed to be sought and granted within the Ministry of Finance in order to rescind the tax levies inappropriately imposed.

The process of refunding those inappropriate levies has been a difficult process that has not yet been fully completed. To settle the problems with importation facilities, the Ministry of Finance issued Ministerial Regulations and affirmation letters to restore the duty-free importation.

PLN's monopoly on electricity sales was also revoked by a new Law in 2001 that was to eventually lead to a multi-buyer/multi-seller electricity market. However, this Law was challenged, found to be unconstitutional, and therefore revoked. A new Electricity Law was passed by the legislature in 2009. The impact of this Law on the geothermal sector will become clear when implementing regulations are issued.

5. TAX REGULATION

Nature of tax regulation was changed which dictated by a certain condition.

5.1 Tax Regulation from 1980s to 2003

In the early 1980s the government first issued regulations relating to geothermal projects. A corporate tax rate of 40% and a further tax on interest, dividends, and royalty of 10% was imposed, for an effective tax rate of 50%. This tax rate proved to be a disincentive to investment.

To resolve this problem and to provide a degree of protection for changes in taxation over the long time horizons needed for a geothermal project, Indonesia chose to exempt geothermal energy businesses from regular corporate taxation. Instead a fixed government share of 34% of net operating income for the life of the JOC was specified in the contracts and in Law. All taxes or fees assessed by government agencies were to be paid from this government share.

Indonesia further gave several tax preferences, such as a deferral of payment of Value Added Tax (VAT) until production started from a project, an accelerated schedule of depreciation of assets, and the ability to import goods used in the project without duty.

These provisions (reducing the tax rate and providing future certainty in taxation) were instrumental in resolving investor uncertainty and contributed to the surge of geothermal investment in this time period.

5.2 Changes on Tax Regulations after 2003

After the 1997/98 Asian Financial Crisis, sweeping changes in the government led to the change in Pertamina's status from an arm of the government to a Limited Liability company with the government as its sole shareholder. The government also wished to end Pertamina's monopoly in the energy sector and passed Laws creating a new legal basis for energy development. Pertamina was no longer acting as an arm of the government who contracted with and regulated private companies for energy development, including geothermal. Instead, a new Geothermal Law was passed in 2003, which created a regulatory directorate within the Mines and Energy Ministry to take over Pertamina's geothermal regulatory function.

As mentioned before, all prior geothermal contracts have been grandfathered under the new law, and those projects

will continue to be assessed at the 34% rate. With the change in Law after 2003, new geothermal projects are no longer subject to a flat 34% government share of net operating income. Instead, regular corporate income tax and other local taxes will be assessed. Indonesia's current corporate tax rate is 28%. Local and other taxes are estimated to be at 14%, which is higher than the prior government share. However, there is no protection against future tax increases in the current tax regulations. This uncertainty serves as a slight additional risk to developers.

6. LAND USE REGULATION

The uses for most lands in Indonesia are regulated by the government, and much of the land that is of geothermal prospectivity is actually owned by the government. Government Lands are classified as plantation land (suitable for managed industrial use). More sensitive areas are designated as protected forest in which development was allowed, under regulated conditions. The highest level is preserve forest (which includes national parks) in which development was allowed under special exemption.

At the time that the existing geothermal contracts were signed, the lands covered by those contracts were mostly a mixture of plantation and protected forest areas. Geothermal development was allowed, but with strict oversight by the Ministry of Forestry to ensure sustainable land use practices were followed.

Over time, some lands originally designated as protected forest hosting geothermal fields were re-designated as preserve forest, or as national parks. This placed the geothermal projects in a position where further make-up drilling or development in those existing fields would be impossible, and the issue of continued operations of existing facilities was questionable. The government addressed this issue by acknowledging the validity of development within the preserve forest and national park areas since the projects existed before 1999 when the new Forestry Law was issued.

However, for new geothermal projects, development in preserve forest or national parks will not be legally possible. Many of Indonesia's best geothermal prospects are in areas currently designated as protected forest or national parks, effectively placing them off limits for development unless the Forestry Laws are further amended.

7. COMMUNITY EXPECTATIONS

A dynamic changed of community included local government expectation and attitude towards geothermal operation within their area changing after regional autonomy.

7.1. Regional Autonomy Law

From the earliest days of geothermal development in Indonesia, local regencies hosting the geothermal resources have viewed the projects as positive contributors to their local economies. Geothermal projects are a source of high-paying jobs, opportunities for local contractors and sources of community development funds from project developers. These projects were not perceived locally as a significant source of tax revenue, however.

In the 1980s and 1990s, the central government maintained a strong grip on the tax revenues, causing a smoldering resentment among local governments and communities as they saw tax revenues from industries in their regencies flow to Jakarta, but seldom saw much benefit from those monies in their areas.

The change in government in 1998 started a transition that gave the regencies more autonomy in governing the industrial activity in their areas. In 2004 a Law was enacted that specifically entitled the regencies to a specified share of the tax revenues from developments in their area. Local governments began to expect that tax revenues from geothermal projects would now be received locally.

However, the central government did not immediately clarify with the regencies the amount of the government share paid by the geothermal developers that would be shared with the regencies. This led to a great deal of friction as the local governments pressed the geothermal developers for direct payment of the local portion of the government share, when they could not get an answer from the central government. In a few instances, local officials set up road blockades restricting access to geothermal fields as a means of making their voices heard.

Currently the central government has reached an understanding with regencies on the sharing of tax revenue. However, one important learning for the future is that a geothermal project's presence in the local community makes it an easily accessible and high profile location from which to press a claim with the central government over tax revenue sharing.

7.2 Employment and Corporate Social Responsibility

As stated above, the presence of a geothermal project is favorably regarded as a source of employment in the community. However, the nature of geothermal project development is that a number of jobs are available during initial construction, but when construction is finished, a number of those jobs disappear. Further contributing to the problem is that often local areas have a limited number of workers with the skills needed for construction (welding, pipefitting, machinists, etc.)

Misunderstandings sometime arise when communities experience the inevitable layoffs as a construction project winds down. These misunderstanding sometimes are expressed as demonstrations demanding continued employment.

Unlike in the past, the regional autonomy laws in the new government and the more democratic atmosphere throughout Indonesia have given stronger voice to local people to express their aspirations. Before, most were reluctant to challenge projects perceived to be directed from the central government. Now they are much more direct about expressing, sometimes forcefully, their desires for increased assistance with education, infrastructure, health and electricity facilities.

Coping in this environment requires a strong ability to understand the needs and desires of local communities, and the development of strong mutual relationships with local leaders and stakeholders.

8. CHANGES IN COMPETITIVE MARKET PLACE OVER LONG TERM OF CONTRACT LIFE

By its very nature, a geothermal project will achieve its financial goals only after many years of operation. Contract terms of 30 to 50 years are common in Indonesia. During that period of time, the nature of the competitive marketplace in which the project operates may undergo radical changes, both from evolutionary or from abrupt changes. A successful project should be able to anticipate, withstand and adapt to those changes.

8.1 Demand Growth

The market for electricity is greatly driven by the demand for the product. This is one area in which little change is expected in Indonesia. Its growing economy and increasing per capita income have translated into a steady increase of 8% each year in consumption of electricity. Absent a shock such as the 1998 Financial Crisis, demand growth is expected to continue at these levels. However, a disruption of demand might reasonably be expected to occur sometime in the future, and the impact of such scenarios needs to be considered in the long-term.

8.2 Cost of Alternative sources of Electricity

The costs of producing geothermal energy are to an extent isolated from other energy markets. Once a project is constructed, its ongoing costs of operation are relatively low, subject only to increases in the costs of goods and services. This allows a geothermal project to be priced at steady, predictable levels, if the form of contract supports this structure.

In contrast, other sources of electricity, such as coal and natural gas-fired power plants, carry with them a fuel supply risk that is unavoidably assumed by the purchaser of electricity. In Indonesia, all coal and gas-fired generation projects pass their fuel costs on to PLN. During periods of low gas and coal prices, geothermal is therefore perceived to cost more than electricity from coal. However, during periods when fossil energy costs are high, geothermal projects can be considerably less expensive to the customer.

A geothermal project competing in this environment should be able to compete in the event of sustained low prices for alternative fuels.

8.3 Restructuring of Geothermal Electric Power Price for Existing Projects

In 1998, the Asian Financial Crisis triggered a renegotiation of every contract that PLN had to purchase electricity, including all of its geothermal contracts. This led to the loss of a substantial percentage of the value of contracts for existing projects. Any new project should be prepared to cope with the small chance that such an event will be repeated.

8.4 Price of Geothermal Power for New Development

Geothermal power prices in the new legal structure are to be set through competitive bidding at the time a contract area is offered by the government, but below a ceiling price specified by the government.

The government's view of this cost has been evolving over time since the Geothermal Law has been put in place. Initially, a ceiling price was set for many areas that were so low that developers were unable to make a viable offer.

The price regulations set in place by the government will have a major impact on the ability of Indonesia to attract investment needed to develop this important sector for the benefit of the Indonesian people.

9. SPECIFIC EXAMPLES OF CONFLICTS REGULATION AND ITS RESOLUTION

Following are examples of conflicts regulation experienced by Chevron geothermal in both for Darajat and Salak Fields.

9.1 Salak Forestry Status changed

Prior to 2003, land-forestry status of Salak Geothermal field was a protected forest and base on the existing regulation allowed geothermal activities within this forest complex. In 2003, the Minister of Forestry issued a decree to change Salak forest from "protected forest" to "national park". Geothermal activity in such areas is prohibited by Forestry Law No. 41/1999. After a long discussion, the Forestry Ministry permitted continuing geothermal activities within this forestry complex by issuing a Minister's letter and Ministerial regulations to accommodate continued activities within this National Park since the geothermal field pre-dated the Forestry Law.

9.2 Import Duties issues

About 2004, during Salak geothermal field make-up well drilling and Darajat field Unit III construction, Chevron Geothermal experienced a problem with materials importation. Under the new Oil and Gas Law, and a new Geothermal Law, Pertamina had been converted into a limited liability company, Customs and Excise officials no longer recognized its right to import materials duty-free for geothermal activities. To solve this issue, the government issued a Finance Ministry regulation re-granting import duty exemption and an affirmation letter for import tax exemption.

9.3 Government Share Issues

About 2005, local government and local community demanded that the "Government Share" from its geothermal projects that is paid to central government be paid instead directly to the local government. A long and protracted discussion ensued between the local government and regional House of representative, members of the Central Government (Mines and Energy Ministry, Finance Ministry and others) was needed to resolve this issue.

In the end, a new regulation was created to share the "government share" paid by geothermal energy developers to the central government with local government.

10. CONCLUSION

1. Since the start of geothermal development in Indonesia in 1980, regulations have continuously changed pursuant to existing conditions including regulations related to geothermal development. Such regulatory change often created different interpretations and legal uncertainty toward work contracts and agreed economics. A capability to understand emerging issues related to regulatory change is important to maintaining a viable geothermal business.

2. Settling issues related to regulatory change requires energy, time, and high level of patience. Sometimes legal rights are subject to differing interpretations as the government is changed. Problems sometimes arise that have an immediate negative effect on business operations. However, some degree of relief can be achieved by working with relevant Ministries to issue supporting legal documents to align previous regulation with the current regulations.

3. To be successful, a geothermal project in Indonesia should be able to anticipate events that might alter the returns received on the investment. However, experience would indicate that some degree of change in conditions will be experienced over the project's life. Therefore, a developer must be able to quickly respond to unexpected events to mitigate their impact. Inevitably some effects

may not be mitigable. An investor must therefore be able to adapt to changes that may occur in the future.

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