

## New Indonesia Geothermal Law: What It Will Be Like

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**Keywords:** General Topics, Business Strategies

### ABSTRACT

Indonesia geothermal power development is today energy to replace fossil and coal for electricity in some regions. The outcome is expected to meet National Energy Policy that is targeted as much as 25 percent in the Indonesia's energy mix by 2025. To-date geothermal resources contributed only around 1,100 MW of the total Indonesia power generation capacity of approximate 29 GWe. As the government of Indonesia launched the second accelerated 10,000 MW projects to be commercially operational by 2012-2018, 48 percent of the projects of which are geothermal power projects, although it has been known that it is impossibly applicable.

Before Geothermal Law no. 27/2003 had been established, geothermal projects were executed by The State-Own of enterprise): PT. Pertamina (Persero) and PT. PLN (Persero) because the construction of a geothermal power plant requires a huge initial cost of the project economics, i.e. upstream side (including exploration), pipeline system and power plant. In Indonesia, law provides normative, conceptual stipulations of regulatory perspectives. However, beyond the regulation require time and explanation below the customized conditions at that time. The ego of inter-sectors and the ministries turn into further difficult to manage.

This paper discusses business strategies to geothermal development that is possibility well addressed, coordinated and synchronized for upcoming regulations which are issued by various ministries. Government had submitted Proposed Law on Geothermal and its academic drafts to the House of Representatives in 2013. A special committee (Pansus) of several Commissions was then established to discuss the Proposed Law and plan the first and the next agenda over the meetings. It then creates the need to specify the grounds and to look up what *natural resources lies in the hands of the Government* means. As far as people's concern, founding fathers dreamed Indonesia's people make the most of their natural resources for the sake of prosperity to the nation. As their own natural resources are a mean to win wealth, a strategy to place the resources under the state is made, known as The State's Right to Control. Essentially, it aims to affirm that Indonesia's natural resources only belong to the people and can only be enjoyed to enhance their well being. The management of subsectors in mining industry as regulated in Mining Laws mentions The State's mineral rights serve to maintain those and hand Mining Rights over to the Government. This allows the Government to assign state-owned companies in exploration and exploitation with economic rights. If foreign companies are invited to do business by the Government, certainly they are entitled to get a profit share in the economic rights.

Most geothermal areas (*Wilayah Kerja Pertambangan* or WKP) are located at conserved forests, and those actually violate UU 41/1999. As the discovery hinders a sustainable development in renewable energy, the government needs to amend UU 27/2003. Geothermal will no longer be considered in mining activities. Technical mining terms are strongly rejected in the new Forestry Law to avoid the actual 'mining activities' in forestry areas. As the amendment formerly urged work areas to be built at conserved forests, it is highly recommended to redefine the mining terms in Geothermal Law.

Questions to consider: 1). How can the economic rights of companies involved in natural resources management support The 1945 Constitution? Do the current contract systems or IUP really help, as stated in Law on Coal and Mineral Resources? 2). Can the highest authority in mining activities be involved in the central-regional government partnership or solely given to regional governments? In case the central solely holds it, there should be some consideration to decentralization as mentioned in Autonomy Law of 2004, Presidential Decree No. 37 Year 2004. 3). If it is true that the central holds the highest authority in mining activities, do Law on Coal and Minerals of 2009 and Law No. 27 Year 2003 on Geothermal contradict The 1945 Constitution due to decentralization?

An out-of-box perspective is needed in search of a comprehensive barrier analysis with real-time solutions since Law No. 27 Year 2003 on Geothermal cannot make its way. It turns out that Mining Work Area (WKP) in protected forests is not the only issue to change regulations on geothermal. Others are too, but not limited to geothermal electricity cost, tariff perception, small exploration fund, extended transactions/ Power Purchase Agreement, inadequate extracted data from Mining Work Area (WKP) to goal a bid, licensing, incentive programs, a low tolerance to approved vendors who abandon their responsibilities, pricing requests and so on. Details are obtainable from the stakeholders.

One more thing to think about is how to shape a solid juridical ground which aligns to The 1945 Constitution as natural and energy sources have become the responsibility of the central and regional government. There is a need for a priority to long term and the state's economy; therefore, it should be more than recentralization.

It might worth to consider if IUP is replaced with Partnership Contract (KKS). The authority of mining (exploitation and exploration) is given to state-owned corporations (from, as an example, geothermal companies) the Law assigns. The Law also

stipulates their responsibilities, a part of which allows the corporations to work with private companies (by KKS) although the Government holds the authority.

Is the definition of “natural resources must support the welfare of the people as much as possible” also explained in Coal and Minerals Law of 2009 concerning the obligations of IUP licensee for refinery and processing in the country? It has been debated by the members of “Asosiasi Pengusaha Tambang” (Mining Association) due to their terminated raw mineral export by 12 January 2014, five years after the bill was approved. Law review occasionally includes the authority of central and regional government, demand from the regional governments regarding participating interest, the organization structure of “Badan Pelaksana Kuasa Pertambangan”, a management model to enterprises (IUP or contract-based) and Budget plan of the central and regional government. House of Representative finished to review a Law of Oil and Gas bill to be included in National Legislative Program (*Prolegnas*) of 2010 and yet it does not pass the first examination. Geothermal Law was recognized as a part of Indonesia’s 2013 *Prolegnas* and it even made it to the first review/evaluation. The issues mentioned are always involved in the discussion of the two laws.

Moreover, this paper focuses on the crucial issues for today’s geothermal development in Indonesia: transaction for geothermal business license and geothermal steam and electricity tariff (total project). To succeed immediate and numerous geothermal development in Indonesia, there is no option but to give it for state-owned of enterprises that will lead and champion into transaction for geothermal business license and power purchase agreement, geothermal steam and electricity tariff (total project), and bidding process for geothermal working areas including guarantee from the government.

## 1. INTRODUCTION

Indonesia’s Regional Administration Law Year 2004 with its presidential decree regulates the relationship of local governments and the Government (central), which do not completely refer to transfer of authority to the Government, concerning mining/mineral/geothermal cultivation (the reformulation of administrative affairs). The 1945 Constitution of Republic of Indonesia states the natural riches contained are controlled by the State, hereby refers to the Government, House of Representative, regional governments and others. Therefore, control and authorization have distinctive definition. Authority is regulated in Law concerning decentralization, powers to redistribute to regional government or disperse away from the Government (central).

Law on natural resources (Migas, Mineral/Mining and geothermal) has a considerable potential to be judicially reviewed if the control is completely in the Government (central). Furthermore, it has to have a strict ground that does not violate The 1945 Constitution of Republic of Indonesia. If the Constitutional Court rejects some of the articles in or the whole parts of the newly proposed law, geothermal will be underdeveloped. In the future, the role of the regions and the role of the Centre will be set up better for geothermal government goes further we have load.

The geothermal development position in Indonesia after the enactment of Law No. 27/ 2003 on geothermal had been expected to be more convincing as the hierarchy of the law carried more weight than the presidential and ministerial decrees applied in earlier period. However, the fact shows that no construction has been executed for the development so far. Although Government of Indonesia (GOI) has an obligation to carry out the preliminary (initial) survey and early phase of exploration activities to support Geothermal Working Region (“WKP”), this policy is not responsively executed. Meanwhile, Geothermal Fund Facility (GFF) as stated in Art. 2 of Minister of Finance Regulation No. 3 in 2012, was set up:

- To enhance sufficiency of data from Preliminary Survey in order to mitigate exploratory risk in the utilization of geothermal energy to produce electricity,
- To supply supporting data for tender documents of Geothermal Mining Work Area (WKP) for the procurement of geothermal project cooperation contract to Business Entities; and/or
- To support any exploratory activity engaged in geothermal development *project*.

Most geothermal areas (*Wilayah Kerja Pertambangan, or WKP*) are located at conserved forests, and those actually violate the UU 41/1999. As the discovery hinders a sustainable development in renewable energy, the government needs to amend UU 27/2003. Geothermal will no longer be considered in mining activities.

Direktorat General of Renewable Energy and Energy Conservation and (Komisi VII) the House of Representatives, particularly the government, tend to use the moment to make some changes to: the price, environmental assessments, participating interest to BUMN and BUMD, transfer of share ownership, assigned explorations, the Ministry of Domestic Affairs’ authority to cancel proposed geothermal explorations.

As the amendment formerly urges work areas to be built at conserved forests, it is highly recommended to simplify the mining terms for geothermal activity. What to change?

- 1) The current environmental permitting regulations. Geothermal activities in the forestry conservation are preferred excluded from the law for mineral and coal (Law No. 04, 2009).
- 2) The government’s participating interest to BUMN and BUMD. Many of auctioned WKPs are owned by BUMN, BUMD and BUMN’s subsidiaries.
- 3) Transfer of share ownership. As set in any Mining Business Permit (IUP), it is allowed after Commercial Operating Date (COE). In reality, most private electricity companies do the transfer before COE.

- 4) Temporary Suspension and Revocation of Permit, which should not involve Laws on Regional Autonomy. The revised, non-amendment Revision of Indonesia's Geothermal Law will be the result (2013/14).

Therefore, revision to the mining terms was urgent, so that Amendment UU 27/2003 has the chance to be issued in 2014. On top of that, the acceleration to geothermal development is expected to move implemented mode afterwards.

The new revision to the law has been the approach to adopt such changes roughly by July 2014. This new law is really the most lucrative major to revamp geothermal definition where according to the Geothermal Law No. 27, 2003: this is the mining activity, and it will be difficult because geothermal areas are mostly in the forestry that does not allow mining activities situated along protected forest. On the other hand a majority of Indonesia geothermal potential in the protected forest area are mining activities. The new law essentially to state that geothermal is not a mining activity.

The question is whether after this geothermal definition is revamped, the geothermal development in Indonesia will be no acceleration of development? The answer is certainly not necessarily well. If the current project that is currently hindered in forestry issues, maybe yes answer, this revamp will facilitate activities in protected forest areas. However for new Geothermal Projects namely Geothermal Project development, the determination of work-area auction proceeds WKP actually more to the absence of exploration funds. Indonesia geothermal development therefore must be carried out totally by government of Indonesia through its state-owned of enterprises (*Pertamina Geothermal Energy, PLN Geothermal, GeoDipa and PT Indonesia Geothermal, PT PLN, etc.*).

## 2. PROPOSED UTILITY DEVELOPMENT STRATEGIES

The acceleration of geothermal electric power implementation is absolute in Indonesia's needs because country energy availability is around 29 Giga watt electricity equivalents or 40% of the world's potential, and it has been proven worldwide that once geothermal energy is developed, then this will not be affected by climate change and energy price fluctuations in market internationally.

The assignment of geothermal concessions (*Kuasa Pengusahaan Panasbumi*) to Pertamina through Presidential Decree No. 22 in 1981 and Presidential Decree No. 45 in 1991 have proven implemented to geothermal projects that reached about 1,100 MW, and this kind of business contract can be more achievable (a realistic business model).

Role of Pertamina with PLN as the state of enterprise is a genuine national developer (government) also carries Public Service Obligation functions. The main objective is to immediately develop the Indonesia infrastructure needs, with related concept done in the past, the assignment of geothermal concessions (*Kuasa Pengusahaan Panasbumi*) to the state-owned of enterprises that the fact can lead and champion into transaction for fast tract development.

Electricity is a commodity and infrastructure, necessitating the presence of two approaches. To discharge business commodities of electricity producing revenue/ benefit economy value, high for state financial, should remain implemented through PT PLN (Persero). To implement electricity development which is still infrastructures regime to meet a target ratio of electrification, as well as the fulfillment of equitable development subsidies for consumers who could not afford, implemented by the Government with the State Budget funds and Budgets through public service Agencies (*Badan Layanan Umum*); its implementation can certainly be carried out by STATE-OWNED ENTERPRISES as executors, (Sugiharto et al. (2000)). So far electricity consumers, as well as the wealthy (rich peoples), still get electricity subsidies due to rupiah and US dollar conversion. In the long term basis, this high subsidy is not good for the country's economy.

In line with Law No. 30/ 2009 on electricity subsidies, it is only be given gradually to customers who are not financially capable; so that fund of subsidies, enjoyed by most of the people (electricity consumers), can be used to continue developing electricity in villages, remote areas and outermost islands with new and renewable energy application.

While people (consumers) subsidies are paid to PLN through the state budget, this led to PLN (which regained its "Persero" status in 1994) obtains government subsidies; hence PLN is not bankable and unable to conduct cooperation investment. With respect to that, subsidies should be given to people (consumers) who are unable to form of electricity payments on behalf of customers referred to. Thus, PLN should not receive a subsidy, but payment directly by the government on deficiency payment to the consumers (people).

Price difference with the rates set out in Government and the House of Representatives is subsidy from the government to consumers of PLN (people). In this way, PLN has positive cash flow, and IPP (*Independent Power Producer*) is expected to grow and raise fund easily because it will cooperate with a healthy PLN (without subsidies) and bankable also the selling price of PLN to the consumers (people) appropriate economies (tariff determined the government) because of the difference that would be government payments over government subsidies to the people (customers). Thus, PLN will become healthy and competent to perform investments or business cooperation to meet the growth of the demand. PLN does not receive a subsidy and sells its electricity according to the economic situation.

Today demand growth amounted to about 7% per year; electricity project is no longer a problem if the assignment of geothermal concessions (*Kuasa Pengusahaan Panasbumi*) to STATE-OWNED ENTERPRISES as government's hand body. By rationalizing subsidies, firmed electricity budget development and the assignment of geothermal concessions (*Kuasa Pengusahaan Panasbumi*) to STATE-OWNED ENTERPRISES as executors; Indonesia can then immediately get electricity through "*Badan Layanan Umum*" (public service Agencies) scheme.

There have been questionable permits involving obscure time scheme in granting an IUP, such as:

- a) Recommendation and location permits from governors and regents,

- b) Suggested time scheme and permit of use of the forests,
- c) Time allowed for land use,
- d) Land acquisition bill,
- e) Expiration of environmental impact assessment (AMDAL),
- f) Indefinite mechanism and procedures in imports.

The implementation, as explained above, of the projects development must be done by government through STATE-OWNED ENTERPRISES as government's hand body.

Whereas the IPP can certainly take the business, in cooperation with STATE-OWNED ENTERPRISES, so that risks remain in the hands of the Government and the development of geothermal projects can still run faster.

### **3. PRICE OF GEOTHERMAL ELECTRICITY**

In Future, an auction winner for the geothermal working area should not be determined from the lowest electricity rates offered. The price must be set by government in the beginning and is reasonable, justifiable and also must meet economics value throughout the life of the project. An independent government body is an ideal public institution to implement this new geothermal law to govern the whole related duties and responsibilities in inter-ministerial and cross-cutting bureaucracy involvement.

Annual State Budget is determined by government with approval House Representatives, and then difference '*Biaya Pokok Produksi* (BPP)' (a cost of production) and subsidies to consumers' tariff (people) are paid to PLN. The magnitude of the BPP can be set after going through an audit by an independent auditor and legal reference. The magnitude of subsidies to incapable customers (people) as a result of the difference of tariffs and BPP through the magnitude of subsidies that is put each poverty-stricken customer in account of state budget electricity. Summing subsidy in account is conducted after an audit of government payments to PLN through State Budget or of regional and technically can be conducted transparently.

Government subsidies to PLN as a determined result, converted into a subsidy to consumers in form of Payments to Government and PLN, thus PLN is financially healthy and bankable. It can moreover afford the investment cooperation. Project funding is the upmost key factor. Here, if the assignment of geothermal concessions (*Kuasa Pengusahaan Panasbumi*) to STATE-OWNED ENTERPRISES as government's hand body; the project development certainly can be developed rapidly.

The effort to implement the regulations issued by various ministries shall be obviously coordinated and synchronized in order to share the same and equal perception to geothermal stakeholders covering geothermal upstream and downstream development outlining. This moreover includes understanding on technical and economics principle, as well as, social, economic and technical benefits to developers, surrounding community and Indonesia's economy which are importantly required to have in the future geothermal regulations. Independent government body is moreover agreed on the law. The purpose is to govern the whole related duties and responsibilities in the inter multi ministerial and bureaucracy involvement. The independent government body has also an authority to perform investment loans in financing the exploration activities with criteria of geothermal concessions assignment (*Kuasa Pengusahaan Panasbumi*) to lead and champion into transaction for fast development.

The Energy Law No. 30/ 2007, Article 7, paragraph 1 states that energy cost is determined based on the a rational and fair economic value. The economic value is price of the equilibrium between demand and supply. Incentive is in the form of capital assistance, taxation, and/or fiscal. Then, the incentive of business may be given in term of simplification of procedures, licensing, and enterprise requirements. From the developer's point of view, economic value is one that meets a reasonable return on investment taking into account to the risk factors and other factors, including (but not limited to) the aspects of engineering, economy, taxation, and fiscal as well as incentives.

For that reason, liability and accountability for the independent body is directly to people of the state through the Parliament, but administratively to the Indonesia President. Geothermal electricity price policy in the future must be obtained by endorsement of national Parliament but this considers the consumers power purchase. An establishment of the geothermal steam price for generating electric power formulated in the Ministerial Regulations that shall has legal assurance on the price of geothermal electricity; therefore with this definition, the regulation is able to ensure participations for the geothermal business activities. The guideline furthermore reflects the aspect of transparency, fairness, and rationality for the geothermal stakeholders. Presidential Regulations is required to cover a tariff or electricity price produced by geothermal power plants as a result of the 'total project' scheme, which is geothermal business activity of the integrated upstream to downstream.

The most important evaluation in the geothermal bidding round is electricity price and a serious developer. This moreover determines as justifiable, reasonably worthy and having economic value throughout the life of project. The involvement of government is highly required for explorations therefore; the STATE-OWNED ENTERPRISES as government's hand body can protect the approved price from any future possible legal accusation also can facilitate the future geothermal project development without any significant hindrance.

Feed in Tariff policy that does successfully apply in Europe or other countries, cannot be applied in Indonesia due to the fact the geothermal project requires high capital investment. In addition, the geothermal electricity price formula must consider the consumers power purchase with additional make up wells for the 30 years life of project.

#### 4. GEOTHERMAL INDEPENDENT BODY & INVESTMENT LOANS

Geothermal development activity is not similar in the coal and mineral mining sectors. It furthermore extracts energy production which do not require open-cast mining activities; consequently, it can be done in the area of conservation with particular requirements because it is not considered as mining activities, but energy service activities (does not require an open cast mining activities).

Geothermal Fund Facility (GFF) as stated in Art. 2 of Minister of Finance Regulation No. 3/2012 is complicated process and this should be taken care of similar to the oil and gas business concept, which aims to charmingly convince developer for the Indonesia geothermal project with the similar concept of exploration in the oil and gas business scheme. If the assignment of geothermal concessions (*Kuasa Pengusahaan Panasbumi*) to STATE-OWNED ENTERPRISES as executors; the fact Government's Fund for an exploration can be uncomplicated into transaction implementation for development.

A start-up of the preparation of WKP, auction and implementation is now part of local government and contract of electricity (ESC) is on PLN's side. Currently, there is one and only institution regulator, namely DJEBTKE. In near future, a supervision institution may be immediately set up as the coordinator of its function between regulators and local site administration. While the assignment of geothermal concessions (*Kuasa Pengusahaan Panasbumi*) to the STATE-OWNED ENTERPRISES as executors; this certainly can lead fast and champion into transaction for development.

Through the scheme, geothermal development will grow rapidly and be growing out in good health. Meanwhile, around today 30 % of the Indonesians, that currently do not have the access to electricity and had not acquired a subsidy; will soon obtain electricity partly (some areas that have geothermal resources) from the development of geothermal project.

The current geothermal electricity price does not meet with the least cost principle used by electricity companies, namely PLN, the State Owned Electricity Co. of Indonesia. It is, therefore deemed necessary to include the full legal justification into long term quantitative benefit with regard to the agreed geothermal electricity price between investor as seller and PLN as buyer. For PLN, tangible benefits to be included among others is avoided cost of not using high price non-renewable (gas and coal) and imported fuel (oil).

The government shall provide reliable electricity price benchmark for the geothermal project that will be endorsed by national parliament. This legal basis is important for the certainty of the development project in Indonesia.

As so much geothermal resource in Indonesia cannot be developed due to land overlapping with the forestry issues; regional government is expected to be the vocal point and partnering with the minister of energy and mineral resources to bridge other geothermal development regulations and policies linked to other regulations as clear-up guidelines. An independent government body as facilitator and coordinator between regulators and local administration will be set up.

As the tender committee shall play important role in the geothermal bidding round, and shall come ideally from multi departments and functional team including elements of government, geothermal business association, experts, and the stakeholders from the society. One-door process only is required due to the fact that the less bureaucracy is the best system for the execution of any bidding round outcome.

The coordination between central and regional governments for the geothermal license and permits, and among various ministries on land authorization, environmental worthiness decision and authorization for the Climate Change issues, as well as fiscal and non-fiscal incentives shall be agreed under regional government's vocal point as stated in the Energy and Geothermal Law.

#### 5. CHANGE OF PARADIGM

To materialize in the electrical projects of investment, the important thing is to first salubrious PLN: change the subsidy to be subsidies to people (PLN Customers) by way of Government paying customers (people) to pay PLN deficiency as a payment on behalf of customers (People). Consequently, in financial book, no subsidies are to PLN from the Government.

A perception in the community that the PLN is raising the electrification ratio is the Public Service Obligation (PSO) by PLN. This concept and perception should be changed into electricity by the government through the State Budget. PLN and/or the other State-owned of Enterprises, can be the contractor, is whirled and the management of the government. Hence, it is no longer a Fund through the practice of PSO Government subsidies. If PLN is healthy, the company can run PSO (Public Service Obligation) according to the intention of the laws. Thus, PLN is healthy and can perform its function as a PT (Persero) and is able to invest and do business in order to approach business to investment occurred. On the other hand, IPP also can grow much for supplying PLN healthy.

PLN in cash flow record should be free from subsidies and no longer to receive a budget from the State Budget, except in the form of employment contract from the Government to build the village and raise electricity electrification ratio that its budget is from the State Budget. But as long as there is no clarity about the difference between State of Enterprise's money and the country's, so that resulting in the existence of the State-Owned Money cases criminal in State-Owned Enterprises financial management that does not use the APBN (State Budget). In the legislation, it is declared that "State-owned of Enterprise's money stands alone." Nevertheless, this stresses that there are barely regime change to the law of criminal law to civil law because of into money at risk according to the principle of healthy businesses.

Financial issues in this country need to resolve by the Government to step in carrying out the task as PLN Persero i.e. business to business activity to do his business, including renegotiation with IPP which does not encounter any obstacles.

The Supreme Court has issued a fatwa no. WKMA / Yud / 20 / VIII / 2006 16 August 2006 mentioned that capital of the state of enterprise is derived from the wealth of the country that has been separated from the state budget and further training and its

management, not based on a system of national budget but on the principles of the company are healthy. This needs to be ensured that PLN as can safely perform its duties effectively and productively. A new geothermal law that has recently revamped appeared to be no significant change in the future governance of industrial and project development. Moreover, under this change also could not be expected that many projects will be developed.

Law on APBN (Annual State Budget) No. 10/2010 and 2011 BUDGET article 29 described that “allocated fund for geothermal exploration of Rp1.126.500.000.000,- (about USD 95,000,000) was allocated to Geothermal explorations-based Power Plants.” But so far, there was no implementation. The government budget administered by Government Investment Center (PIP) could not implement this cost due to not ready implementation regulation.

- a) Explorations at the eastern region of Indonesia and Greenfield should be of priority.
- b) Schemes from KPS, in line with Presidential Regulation No. 13/2010, will be made a role model.

Apparently, the fund management created by PIP does not work due to a complicated scheme in fund liquidation and it currently has no standardized scheme. As a result, the aims of the program of GFF do not help Fast Track Project - II.

Geothermal Industry is a special industry that not everything can be turned over to the private sector in B to B scheme. There must be alignment and stand on the Government for intervention, especially in the works of exploration fund, and the effective intervention of the drilling risks execution that should be met to the business. Therefore, the entity state-owned of enterprise is proficient to handle the main role of project development.

## 6. CONCLUSION & RECOMMENDATION

- The only institution to accelerate Indonesia geothermal projects and lead and champions into transaction for fast-tracked development is the Government. Although the need for committed changes to the Act No. 27/ 2003 - Geothermal Law to accelerate the development of geothermal, the recommended assignment of geothermal concessions (*Kuasa Pengusahaan Panas bumi*) to the State-Owned of Enterprise is the main key in the development of Indonesia geothermal because Indonesia has proven implementations of geothermal projects to reach about 1,100 MW.
- To succeed geothermal development in Indonesia, there is no option but to give it for the Indonesia state-owned of enterprises such as government agency that can lead and champion into transaction for explorations risk, geothermal business license and power purchase agreement, and bidding process for geothermal working areas including guarantee and get full support.
- Geothermal Fund Facility (GFF) as stated in Art. 2 of Minister of Finance Regulation No. 3/ 2012 do not meet to be friendly deal with and used to attractively invite developer for geothermal project(s), except the state-owned of enterprise.
- The long term benefit analysis, which is based on the avoided cost for not using high price non-renewable fuel (gas and coal) and imported fuel (oil), with the agreed electricity price of geothermal project have to be in the government regulations and by the endorsement of national Parliament. The geothermal projects will clearly reflect the cost of developing geothermal and the long term benefit enjoyed by the nation.
- To initiate an investment status in electricity:
  - Convert PLN's job desk – based subsidy into customer based, by changing of PLN subsidy program to people with the way of that the government pays deficiency payment people into PLN as payment on behalf of people. Here, in financial book no subsidies to PLN from the government.
  - An increase of national power projects by the Government through Budget to PLN and other state-owned of enterprises as the contractors of government.

## REFERENCES

Puguh Sugiharto, Riki F. Ibrahim, and Kris Pudyastuti (2000), The Roles of Indonesia Geothermal Association (INAGA) in the Implementation of Power Sector Restructuring in Indonesia, World Geothermal Congress 2000, Kyushu-Tohoku, Japan, May 28 – June 10, 2000.

Geothermal Law No. 27, 2003, regarding Geothermal Utilization, Republic of Indonesia.

Presidential Regulation No. 5, 2006, regarding National Energy Policy, Republic of Indonesia.

Government Regulation No. 59, 2007 regarding Geothermal Business, Republic of Indonesia.

Ministry of Finance Regulation No. 178/PMK.011/2007 regarding Value Add Tax on Oil and Gas together with Geothermal Exploration Upstream Business, Republic of Indonesia.

Ministry of Finance Regulation No. 177/PMK.011/2007 regarding Import Duty Free on Oil and Gas together with Geothermal Upstream Business, Republic of Indonesia.

Ministry of Energy and Mineral Resources Regulation No. 005, 2007 regarding Geothermal Preliminary Survey Guidelines, Republic of Indonesia.

Ministry of Energy and Mineral Resources Regulation No. 11, 2008 regarding Geothermal Mining Work Permit Guidelines, Republic of Indonesia.

Ministry of Energy and Mineral Resources Regulation No. 05, 2009 regarding Geothermal Electricity Price Benchmark, Republic of Indonesia.

API NEWS, Edisi September 2011, Last Status of Revision of MoF Regulation No. 77 / 2011

Energi Panas Bumi Di Indonesia, ISBN 978-979-18509-8-8, Bandung, Oktober 2012, Kebijakan Pengembangan Dan Keputusan Investasi.

Jurnal Energi, Edisi Delapan, November – Februari 2012, Renewable Energy – Indonesia Negara Terkaya Sumber Energi Panas Bumi.

Jurnal Energi, Edisi Sembilan, Maret – May 2012, Renewable Energy – Geothermal Dapat Mengurangi Ketergantungan Bahan Bakar Fosil Dalam Menyediakan Listrik Negara.

Indonesia EBTKE CONEX 2012, Jakarta Convention Center July 17 – 19, 2012, Renewable Energy and Energy Conservation for a Better Life – We Are Ready.

CEPSI 2012, Bali BNDCC October 15 – 20, 2012, The 19th Conference of the Electric Power Supply Industry: “Enhancing Clean Technology and Securing Investment for Sustainable Electric Power Industry Development”.