



Volume 1	Issue 1	February (2021)	DOI: 10.47540/ijias.v1i1.161	Page: 12 – 18
----------	---------	-----------------	------------------------------	---------------

Is Geothermal Power Plant (PLTP) on Mount Slamet Necessary?

Biko Nabih Fikri Zufar¹, Ahmad Fadli Azami²

^{1,2}Gadjah Mada University, Indonesia

Corresponding Author: Biko Nabih Fikri Zufar; Email: bikonfz@mail.ugm.ac.id

ARTICLE INFO

Keywords: Conflict, Geothermal, Phenomenology.

Received : 12 December 2020

Revised : 21 January 2021

Accepted : 07 February 2021

ABSTRACT

This article intends to reflect on the construction of a Geothermal Power Plant (PLTP) on Mount Slamet. The construction of the PLTP has been rejected by the Banyumas community, especially the slope communities there. During the exploration process for the power plant, the people on the slopes of Mount Slamet experienced various impacts. Starting from the murky water, forest animals entering the villages, so that material losses cannot do business. This article reviews the phenomenology of how important the development of PLTP is in the midst of a surplus of electricity in Java Island. The findings in this article identify flaws in procedures from planning to implementation. The plan is to do legal acrobatics so that it is easy to get project permits. When doing exploration, it has a significant impact on the community on the slopes of Mount Slamet. Therefore the article tries to provide suggestions or input to local and central governments for; make an objective Environmental Impact Analysis (AMDAL), involve professional parties to conduct academic studies, involve the community or NGOs when determining the PLTP project, conduct intensive and periodic outreach to the community, and provide compensation to the affected communities.

INTRODUCTION

The world is currently experiencing an energy crisis; Indonesia is one of the countries that are worried about this condition. According to the Indonesian Ministry of Foreign Affairs on its website, there was a growth in demand in 2011 of 1.7%, and an increase in production only increased by 0.9%. Petroleum reserves were decreasing (Ministry of Foreign Affairs of the Republic of Indonesia, 2019). This was similarly stated by Reuters analysts in CNN's news reporting that oil prices were at US \$ 65.02/barrel in 2019 (CNN Indonesia, 2019). This price is the lowest price in the last 16 months.

In addition to the fact that the world oil price continues to decline and world oil reserves continue to decrease, Indonesia has begun to shift the use of non-renewable energy to using renewable energy. Another factor is that Indonesia agreed with the Paris agreement. The Paris Agreement is one of the

conferences discussing climate change, the aim of which is to oversee the reduction of carbon dioxide emissions in effect in 2020. Inevitably, Indonesia agrees with the issue of climate change and reduces the amount of fuel subsidies (Renner, Lay, & Schleicher, 2018). After participating in and agreeing on the contents of the Paris agreement, Indonesia made legal products resulting from the ratification of the agreement, namely; Law Number 21 of 2014 concerning Geothermal Energy. Since then Indonesia has been aggressively hunting for geothermal energy.

Geothermal energy is energy that is in the bowels of the earth. Geothermal energy has been used as a power plant since 1913. Italy is a country that initiated the use of geothermal energy, and then in 1958, New Zealand used it as a power plant (Saptadji, 2008). In Indonesia, geothermal search activities were first carried out in Kamojang Crater in 1918. Not long after, in 1926-1929, five wells

were drilled to produce hot steam. However, due to the world war and the independence war, these exploration activities were stopped.

It was not until 1972 that Indonesia carried out extensive exploration activities. Through the Directorate of Volcanology and Pertamina, assisted by the Governments of France and New Zealand, a geothermal search survey was carried out throughout Indonesia. The result is that there are 217 geothermal potential prospects in Indonesia, then this survey is continued. The results are 256 geothermal potential prospects. Consisting of 84 prospects in Sumatra, 76 prospects in Java, 51 prospects in Sulawesi, 21 prospects in Nusa Tenggara, 5 prospects in Kalimantan, 15 prospects in Maluku, and 3 prospects in Papua (Saptadji, 2008). The large amount of geothermal potential has made Indonesia intensify the development of PLTP on various islands, one of which is Mount Slamet.

Mount Slamet is an active volcano in western-Central Java, with an altitude of 3428 masl in five districts, namely; Banyumas, Brebes, Purbalingga, Pemalang, and Tegal. It has a fairly even distribution of tropical rainforests around it. However, from the other 4 districts, tropical rainforests in Banyumas are better preserved (LIPI, LPPM Unsoed, 2012). The function of the tropical rain forest on Mount Slamet is for catching rain and storing water that can be used by the surrounding community. Slope communities are very dependent on nature, water supplies are used for agriculture, livestock, or even tofu production houses.

Behind the magnificent tropical rainforest is rich in benefits, there is a geothermal potential that is being targeted by various investors. The winner of the investor is PT Sejahtera AlamEnergi (SAE). Through his president director, Daniel Moelk said that one well has the potential to produce 6-7 MW, in one location 4-6 wells will be made (Mongabay, 2018). The target is that this PLTP in 2021 can produce 220 MW of electricity; the process has been started since last June 2011.

This development activity is not merely sudden without cause. The country has launched it

through the Master Plan for the Acceleration of Indonesian Economic Development (MP3EI). In its clause, geothermal is the focus of the country in pursuing the need for total electricity production using renewable energy for 2025 (Coordinating Ministry for Economic Affairs, 2011). In order for this target to be implemented, the state has made two major stages of electricity production (Mary, Armawi, Hadna, & Pitoyo, 2017). In 2017 the country is optimistic about setting its target to occupy the second position in the world with a capacity of 1800 MW. The target for the next stage is to become first in the world in terms of the use of renewable energy with a capacity of 35,000 MW. PLTP Gunung Slamet is one of the development projects that also contributed to some of the electricity production targets.

However, it seems that the plan has actually resulted in a number of major impacts so that it is further away from his goals. One example occurred at PLTP Mataloko East Nusa Tenggara. Even though they have pocketed the AMDAL, the impact is still felt by the people there. There was pollution and sprayed mud near the power plant project, and damaged the community's rice fields, causing losses (Rosary & Sikka, 2015). It is also possible that this could happen at the Gunung Slamet PLTP. It is necessary if the construction of this PLTP project is criticized in depth through this paper.

This paper aims to provide an explanation and consideration of industrialization around the community, the focus is on PLTP. In addition to providing written criticism, it will also provide suggestions to the government or the state to make wise use of nature. Therefore, as much as possible industrialization does not have a detrimental impact on society, because the goal of development is to make society prosperous. Not, on the contrary, it will cause trouble for the community and cause future disasters or threats.

Theoretically, capitalism continued to develop over time, the beginning of the emergence of capitalism was marked by the outbreak of the industrial revolution in England. At that time the form of production began to transform itself more

effectively and efficiently. Machines replace human resources so that the production process is faster. According to Marx, the production process is not only used as a fulfillment of the necessities of life, but also to seek the maximum profit process through the results of this production (Marx, 1991). Therefore, commodity makers are not able to enjoy the results of their labor.

There is no stopping in the production process; Marx calls it an anarchic process of production. The cycle of this industry can actually plunge capitalism into its crisis hole. Like it or not, capitalism looks for ways so as not to be trapped in a crisis. In addition, the industry continues to accumulate excessively. Like it or not, some competition in the body of capitalism occurs and has caused some capitalists to go bankrupt.

Capitalism seems to have learned from the mistakes it made so that capitalists get a new method, namely the amalgamation of capital. This phase was called by Lenin as Imperialism. Imperialism has five main features of production concentration, capital merger, capital export, the formation of world associations, and the last feature is the division of world territories (Lenin, 2017). The industrial phase today is the highest stage of capitalism because imperialism is able to control production from upstream to downstream. We can clearly see these features in the condition of corporations that intervene in every infrastructure development in Indonesia.

The MP3EI policy is the main foundation for the state to carry out its development project mission. Geothermal projects are also the main target of the country in this project. Of course, it is not without reason, the state has an excuse in addition to the decreasing use of fossil fuels, it also mentions it to be used as a process to fulfill the amount of electric power nationally. The proceeds from the electricity are distributed to the public by PLN (Hariyadi, 2015). In the future, the community will buy this power as usual.

If we observe that the construction of this PLTP is in line with the process of capital accumulation within the body of imperialism itself.

This accumulation is carried out by a process or way of looting, the rights to ownership change along with the accumulation process. Rosa Luxemburg said that in the process there would be expropriation of other people's property (Luxemburg, 1968). Then the exchange of commodities turns to exploitation, and equality turns to class power. The proof is that the community was forced to provide customary land and supporting facilities for this PLTP project. If you look at the context of the PLTP on Mount Slamet, the state must be able to provide hundreds of hectares to the success of its program.

The existence of financial capital is evidenced by a number of foreign loans in the MP3EI project. ADB (Asian Development Bank) provides a loan of 400 million United States dollars (Setiawan, 2014). This loan has reasons to boost economic growth which is starting to slow down. The slowdown in economic growth is seen from the lack of infrastructure support in Indonesia. Therefore, ADB provided an injection of funds that was not small in nominal terms. This loan means to be able to invite investment so that Indonesia can provide the facilities and infrastructure for the investment.

Sure enough, the PLTP on Mount Slamet is able to attract foreign investors who work together with national businesses. The tender for the PLTP project was won by PT Sejahtera AlamEnergi (PT SAE). PT SAE is a combination of two companies, namely a German foreign company called STEAG GmbH and PT Trinergy from Indonesia. The largest shareholding is owned by STEAG GmbH with the amount of 75%, while the remaining 25% is owned by PT Trinergy.

These patterns can be analyzed using Imperialism theory. Development does not only mean the welfare of the community. But on the other hand, this infrastructure development can remove part of the community from their livelihoods, their place of residence, or worse, it can cause disaster. This is because the PLTP project can be assessed if it has projected opposite profits, or if the community bears more losses. This analysis can

be used to review the usefulness of the PLTP project in Mount Slamet.

METHODS

This paper uses a phenomenological methodology. The methodology is considered appropriate for use because phenomenology is a method of descriptive analysis through the depths of all forms of consciousness and experience. Through phenomenology, he hopes to be able to explain social phenomena or phenomena that exist in the community in the context of the PLTP project development on Mount Slamet.

According to Alfred Schutz, phenomenology is a process of meaning that comes from the individual or collective senses (Ritzer, 2012). Therefore, meaning can be divided into two poles, individual meaning or collective meaning. This paper is the result of the author's individual interpretations in seeing the phenomenon of the construction of the PLTP project on Mount Slamet. The task of a phenomenologist is of course to reveal and explain a phenomenon in *verstehen* (understanding) (Hasbiansyah, 2008). To borrow Weber's term, a meaning is identified as a motive for action.

Heidegger argues that the phenomenon comes from the term *phaino*, which means light that displays itself in itself (Moustakas, 1994). It means the phenomenon of an event within the meaning of the individual. Matters related to social phenomena from the construction of PLTP on Mount Slamet can be explained as much as possible by the author. Because the author was part of the reality, the writer's perception at that time until today was against the construction of the project.

Phenomenologists as much as possible explain phenomena through witnessing directly or exploring the language expressed. It must also be open to the reality of every possible series of meanings. Thus, it is sufficient for phenomenologists to open up reality and explain it without rushing to conclusions. All explanations are explained for the world that is experienced alone.

RESULTS AND DISCUSSION

In 2010 President Susilo Bambang Yudhoyono made a long-term plan for Indonesia. He called this plan the Master Plan for the Acceleration and Expansion of the Indonesian Economy (MP3EI). This program was ratified using Presidential Decree Number 32 Year 2011 concerning the Master Plan for the Acceleration and Expansion of the Indonesian Economy 2011-2015. This program certainly requires a lot of money; the government has a foreign investment target of IDR 4,934 trillion. Therefore SBY in his speech at the 2013 APEC meeting in Nusa Dua Bali invited various investors from all over the world to invest in Indonesia through this program.

In this program, national electricity production can be accelerated in various ways. One of them is geothermal, because it is considered capable of supporting 40% as electric fuel (Coordinating Ministry for Economic Affairs, 2011). Geothermal project development is spread across Indonesia starting from Merauke, Biak, Sorong, Jayapura, Andai, Nabire, and North Maluku. However, in 2016 the plan was extended throughout Indonesia, one of which is Mount Slamet (PwC Indonesia, 2016). The plan is that the PLTP project on Mount Slamet is able to contribute 220 MW. But on the other hand, Indonesia has a surplus of electricity; even in an area the surplus has reached 75% (Husaini, 2019).

Of course, this is in line with the explanation (Lenin, 2017), if capitalism will experience a condition called overproduction. This overproduction begins with the accumulation of excess capital, when it experiences overproduction in electricity and the distribution of capital to other industries. The reason is that amidst the electricity surplus, it is still not able to support the electricity load if there is an electric car; therefore geothermal contributes 40% of the total electricity demand in Indonesia. Whatever the risk, the geothermal project must be intensified.

Geothermal is considered as clean energy because it is considered to emit 1800 lower carbon dioxide from burning coal and 1600 times lower

than burning petroleum (PwC Indonesia, 2016). As an energy that is considered environmentally friendly, Indonesia then chooses it as an energy fuel.

The PLTP project on Mount Slamet has begun to run after PT SAE holds a Geothermal Permit (IPB) based on Ministerial Decree and Mineral Resources Number 1557 k / 30 / MEM / 2010, then updated to Decree of the Minister of Energy and Mineral Resources Number 4557 k / 30 / MEM / 2015. The decree gave PT SAE a permit for an area of 24,660 ha as the Geothermal Working Area (WKP). In fact, 90% of the area of Mount Slamet is a protected forest area. Mount Slamet in it still has 40 flora species that need to be made for conservation (Kalima, 2007). PT SAE to continue running its project must obtain a Borrowing and Use of Forest Area Permit (IPPKH) from the Ministry of Forestry as of 22 August 2014 covering an area of 44 ha. However, the IPPKH area changed on 5 October 2016 to 488.28 ha. In this condition, whatever the obstacles to export capital must be carried out so that every obstacle is in the process of capital accumulation (Harvey, 2010).

The temporary development of the PLTP project in Mount Slamet is still in the exploration stage. This stage has several activities, namely; construction of well pads, construction of roads for access to well pads, land clearing for pipe installation, disposal areas, reservoirs, and temporary structures. This stage requires 675.7 ha which will be used to build 8 Wellpad.

The presence of geothermal projects in this exploration stage has a real impact on the community. Protected forest ecosystems that are disturbed due to land clearing are turbid water. Turbid water is caused by an avalanche of infrastructure residues. This is felt by the people around the Prukut River and the Tepus River. This phenomenon certainly disrupts the activities of the surrounding community, their daily activities are threatened. Worse yet, the people in the Cilongok area experience losses in tofu and fishery production businesses (Darmawan, 2018). This

chaos occurred from November 2016 to March 2017.

This project represents the accumulation of capital through plunder. This condition has been criticized by a civil society organization called the Alliance to Save Slamet, but instead of getting a response, the state seemed to allow and repress the masses of action on October 10, 2017. The state has an important role in smoothing the PLTP project to run obediently. A country with a monopoly on violence and the rule of law. Because capitalist development is very dependent on the state (Harvey, 2010). The goal is to maintain capitalistic logic and power even though they are not directly proportional. Accumulation requires confrontation and conquest so that all aspects of society and culture have been achieved.

That is not until there, the problem stopped in this PLTP project. During the exploration stage habitat defragmentation also occurs. These wild animals come out of their habitat due to deforestation in the protected forest area of Mount Slamet. The village on the edge of the forest is certainly a target for these animals. Some are targeting the residents' agricultural fields or plantations. Animals that often come out of their habitat, namely; wild boar and deer. However, it does not rule out other animals. Residents were accidentally seen by forest fringe communities, namely tigers and monkeys (Fuadi, Hamdani, & Ahmad, 2017).

In addition to environmental impacts, geothermal can create social impacts. Moreover, this project only uses UKL-UPL, not AMDAL. The possibilities for mitigating the effects are getting smaller. In the FIG Congress in Australia in 2010, reflecting on Greater Olkaria Geothermal, geothermal can cause problems to the community, namely; tourism, wildlife conservation, education, agriculture, culture, beauty and scenery, labor, energy and economy, health, and transportation (Oduor, 2010). Several impacts have occurred and are felt by the community. The country once again does not see what the reality of the future will be. In fact, instead, maximizing individual benefits by

packaging helps the public interest (Kristeva 2015), in electricity affairs through this project activity.

The public interest is often misunderstood by the state. This pretext is used to smooth out any foreign projects or investments. The state form makes it easier for all licensing matters which are considered as obstacles. This is reflected in Jokowi's speech at the APEC CEO Summit, Jokowi encourages all state apparatus to quickly complete permits and provide business facilities. This is in line with Marx's theory which calls the state the dominant class tool (Budiman, 2003). The state is doing a patchwork of legal products to make this project smooth.

The patchwork meant that this PLTP project should not be allowed to run. But in practice, the state is changing rapidly to keep this project going. Law No. 27 of 2003 on Geothermal Energy states that PLTP activities are categorized as mining activities. On the other hand, Article 38 Paragraph 4 of Law No. 41/1999 concerning Forestry states that "In protected forest areas it is prohibited to carry out mining with an open mining pattern". The purpose of open mining (surface mining), which means mining that is carried out above the ground. It is different if the mining is closed, the conditions are necessary to create a tunnel to reach the deposits in the earth. Because PLTP is an open-pit mining activity, it automatically violates the provisions of the law on geothermal.

Protected forest referred to refers to Article 1 Paragraph 8 of Law No. 41 Year 1999 on Forestry. Protection forest has the main function of protecting life support systems to regulate water, prevent flooding, control erosion, prevent seawater intrusion, and maintain soil fertility. If you continue to carry out mining activities in protected forest areas, it can have an impact on ecosystem damage.

In order to remove these barriers, the state has revised laws and regulations relating to geothermal energy. The state made a new legal product on Geothermal Energy replacing the previous law, namely Law No. 21 of 2014 on Geothermal. The law states that PLTP project activities are environmental services and are not considered

mining. Therefore, geothermal projects can be carried out in protected forests with a lease-to-use forest area scheme. This deregulation scheme facilitates PLTP activities in Indonesia that are inside protected forests. Once again this phenomenon explains the state as the dominant class tool. Not paying attention to the impact or effects of development, for the sake of public interest, all means must be done. Even though you have to play legal acrobatics to overcome obstacles (Ahmad, 2017).

CONCLUSION

After analyzing the PLTP phenomenon in Mount Slamet, it can be concluded that the PLTP project has major problems in planning and implementation. At the beginning of planning the PLTP project in Mount Slamet, it was necessary to do legal acrobatics and obtain permits easily. When doing exploration, there are impacts that are detrimental to the community. The state seemed to close its eyes to the reality that was happening. It is necessary to replace fossil resources with renewable sources. This means that the project is flawed in every way and needs to be reviewed.

REFERENCES

1. Renner, S., Lay, J., & Schleicher, M. (2018). The Effects of Energy Price Changes: Heterogeneous Welfare Impacts and Energy Poverty in Indonesia. *Environment and Development Economics*, 180.
2. Saptadji, N. (2008). *Sekilas Tentang Panas Bumi*. ITB Bandung, 1. Retrieved from Geothermal ITB: http://geothermal.itb.ac.id/sites/default/files/public/Sekilas_tentang_Panas_Bumi.pdf
3. LIPI, LPPM Unsoed. (2012). *Ekologi Gunung Slamet*. LIPI Press.
4. Coordinating Ministry for Economic Affairs. (2011). *Master Plan Acceleration and Expansion of Economic Development 2011-2025*. Jakarta: Coordinating Ministry for Economic Affairs.

5. Mary, R. T., Armawi, A., Hadna, A. H., & Pitoyo, A. J. (2017). Panas Bumi Sebagai Harta Karun Untuk Menuju Ketahanan Energi. *Jurnal Ketahanan Nasional*.
6. Lenin, V. I. (2017). *Imperialisme Tahap Tertinggi Perkembangan Kapitalisme*. (I. D. Yuwono, Ed., & Dachlan, Trans.) Yogyakarta: October Light 1917.
7. Marx, K. (1991). *Capital A Critique of Political Economy*. In K. Marx, *The Process of Capitalist Production as a Whole (Vol. III)*. London: Penguin Classics.
8. Hariyadi. (2015). *Optimalisasi Peran Panas Bumi Dalam Kerangka Undang-Undang Panas Bumi*. P3DI.
9. Ritzer, G. (2012). *Teori Sosiologi*. (W. A. Djohar, Ed., & R. W. Saut Pasaribu, Trans.) Yogyakarta: Pustaka Pelajar.
10. Hasbiansyah. (2008). *Pendekatan Fenomenologi: Pengantar Praktik Penelitian dalam Ilmu Sosial*. Mediator.
11. Moustakas, C. (1994). *Phenomenological Research Methods*. Sage Publication.
12. Luxemburg, R. (1968). *The Accumulation of Capital*. (Schwarzschild, Trans.) New York: Monthly Review Press.
13. Setiawan, A. (2014, 09 13). Dukung Perbaikan Infrastruktur di Indonesia, ADB Beri Pinjaman 400 Juta Dollar AS. Retrieved 09 25, 2019, from Sekretariat Kabinet Republik Indonesia: <https://setkab.go.id/dukung-perbaikan-infrastruktur-di-indonesia-adb-beri-pinjaman-400-juta-dollar-as/>
14. CNN Indonesia. (2019, 09 02). Harga Minyak Dunia Melompat di Sepanjang Pekan Lalu. Retrieved 09 19, 2019, from CNN Indonesia: <https://www.cnnindonesia.com/ekonomi/20190902065004-85-426671/harga-minyak-dunia-melompat-di-sepanjang-pekan-lalu>
15. Darmawan. (2018, 09 26). Pasca Keruhnya Sungai Krukut, PLTPB Geothermal Baturraden, Apa Kabar? Retrieved 09 19, 2019, from Mongabay: <https://www.mongabay.co.id/2018/09/26/pasca-keruhnya-sungai-krukut-pltpb-geothermal-baturraden-apa-kabar/>
16. Rosary, E. d., & Sikka. (2015, 12 28). Bau Belerang Sumur PLTP ini Dikeluhkan Warga. Retrieved 09 20, 2019, from Mongabay: <https://www.mongabay.co.id/2015/12/28/bau-belerang-sumur-pltp-ini-dikeluhkan-warga/>
17. Kementerian Luar Negeri Republik Indonesia. (2019, 09 02). Sustainable Energy dan Ketahanan Energi Nasional. Retrieved 09 30, 2019, from Kementerian Luar Negeri Republik Indonesia: https://kemlu.go.id/portal/id/read/102/halaman_list_lainnya/sustainable-energy-dan-ketahanan-energi-nasional
18. PwC Indonesia. (2016). *Power In Indonesia Investment and Taxation Guide*. Jakarta: PwC.
19. Husaini, A. (2019, 07 11). Halo, pasokan listrik kini sudah surplus loh, mari mulai investasi. Retrieved 09 20, 2019, from Kontan.co.id: <https://industri.kontan.co.id/news/halo-pasokan-listrik-kini-sudah-surplus-loh-mari-mulai-investasi>
20. Harvey, D. (2010). *Imperialisme Baru: Genealogi dan Logika Kapitalisme Kontemporer*. Yogyakarta: Resist Book.
21. Kalima, T. (2007). *Keragaman Jenis dan Populasi Flora Pohon di Hutan Lindung Gunung Slamet*. *Jurnal Penelitian Hutan dan Konservasi Alam*.
22. Fuadi, M., Hamdani, D., & Ahmad, P. M. (2017). *Selamatkan Gunung Slamet dari Ancaman PLTPB Baturraden*. Banyumas.
23. Oduor, J. A. (2010). *Environmental and Social Considerations in Geothermal Development*. *Environment and Energy: Policy and Practice*. Sydney: Federation Internationale des Geometres.