

The Right of the Community to Geothermal Energy Management in Bener Meriah

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Abstract

This research discusses the rights of the community in geothermal energy management in BenerMeriah. Geothermal management with low cost and environmental friendliness to support the economic progress of the community. Article 4 (2) of Law Number 21 of 2014 concerning Geothermal states that the control of geothermal by the state as referred to in paragraph (1) is organized by the Government, provincial governments, and district/city governments in accordance with their authority and based on the principle of utilization. Opportunities for the community to manage and utilize geothermal energy in Bener Meriah are still open, but the reality has not been properly utilized. The purpose of this research is to find out and analyze the rights of the community, geothermal energy management to improve the economy of the community in Bener, Meriah, Central Aceh. This study uses a sociological juridical approach that aims to look more deeply at the community's rights to the management and utilization of geothermal energy in Bener. This research is supported by primary and secondary data. Primary data was obtained by conducting field research in Bener, Meriah, Central Aceh Regency. While secondary data was obtained by searching the literature and regulations related to the focus of the research, the data collection technique was carried out through structured interviews and *focus group discussions* (FGD) with the parties involved in this research. Thus, the community's rights in the management of BenerMeriah have not been utilized because there are obstacles that hinder the use of geothermal energy in the form of hot water in the form of land ownership conflicts. In addition, the public has not been informed, socialization about geothermal energy can be used as electricity and for other business aspects. To overcome the obstacles, the local government and the

gampong apparatus intervened to resolve internal conflicts over land ownership and educate the community on the use of the energy contained on their land on a simple scale and which limits they can use for the progress of the community's economy in general.

Keywords: *Rights, Community, Management, Geothermal Energy, True Festive*

Background

The scarcity of mineral fuels is a trigger for the need for alternative energy. The energy in question is in the form of renewable energy. According to Ladislaus Rybach energy that renewables are characteristic of its energy support removed from its source, similar to that needed to remove energy. Among the alternative energies is geothermal energy. Geothermal is a low-cost and environmentally friendly energy. Geothermal can be used directly and indirectly. Use directly for non-electrical purposes such as hot springs.¹

Indonesia has geothermal energy potential consisting of 40% of the world's geothermal reserves. This potential is a strong reason why the Indonesian government issued the National Energy Policy declaring that by 2025 Indonesia will increase the energy mix derived from renewable energy by 23% and the role of geothermal by 9%. Meanwhile, in the energy policy in 2050, Indonesia stated that it was already in a condition of energy security.

However, the weak management and utilization is still very low at 3.1%² as found on the southern slope of Mount Slamet, Central Java. Mount Slamet Hill has 8 (eight) geothermal manifestations consisting of four points on the northern slope, two points in the northwest, and two points in the south (Baturraden) which have the closest distance

¹ Ladislaus Rybach, *Geothermal Sustainability*, Klamath Falls: Oregon Institute of Technology's Geo-Heat Center, (2007), p. 2

² Daniel Rohi, *Alternative Environmentally Friendly Power Generation in Indonesia*, Surabaya: EECIS, 2008, p. 2.

of 7 km from the eruption center.³ Geothermal energy is produced and used in a way that is compatible with the foundation of future generations and the environment's well-being.⁴ Considering that these resources have minimal negative effects on the environment, Ruggero Bertani,⁵ revealed that the use of geothermal energy for power plants only produces few elements that have an impact on the environment and can maintain national energy stability and security.

The facts show that the management and utilization of geothermal energy resources to improve the community's economy has not been carried out by both the community and the local government. In the context of this study, the community's right to manage geothermal energy resources for the sake of improving the welfare of common life.

According to Joshua Were et al⁶, management is in the form of partnerships with the best approach to community involvement that gives birth to the development of geothermal power as well as sustainable development and cultural preservation of the local community. Utilization can be done either directly or indirectly. John W. Lund and

³ Asmoro Widagdo, Adi Candra, Sachrul Iswahyudi, and Chalid Idham Abdullah, *Effect of Geological Structure of Young and Old Mount Slamet on Geothermal Distribution Patterns*, Bandung: IRWNS Bandung Polytechnic, (2013), p. 206

⁴Samah Elbarbary et. al, Geothermal renewable energy prospects of the African continent using GIS, Elbarbary et al. *Geothermal Energy* (2022) 10:8 <https://doi.org/10.1186/s40517-022-00219-1>, accessed 10 August 2024.

⁵Ruggero Bertani, *Geothermal Energy: An Overview On Resources And Potential, Session 1 Geothermall Electricity Production: Possibilities, Technical And Economic Feasibility In Central European Region*,

⁶Joshua Were, *Sharing Value Based Practices of Community Engagement for Geothermal Development: Kenya and New Zealand Partnership*, Proceedings World Geothermal Congress 2020+1, Reykjavik, Iceland, April - October 2021.

Aniko N. Toth⁷ revealed that the direct use *of* geothermal energy is one of the oldest and most versatile forms of geothermal utilization.

According to the utility theory of Jeremy Bentham, an action is worth doing or not is seen from the benefits it produces. This utility theory is as quoted by Saphiro,⁸ that the principle of benefit is the principle that underlies the consideration of all activities to the extent that such actions will increase or contradict happiness. Related to the rights of the community in terms of geothermal resource management and its urgency in today's time, it is used to analyze the issue in finding the answer seen from the benefits it brings to the interests of the public, so that the importance of using geothermal resources must be proven to provide the greatest benefit for many people. The ethical quality of an action is obtained if the goal of an action is achieved. The benefits obtained are in the form of benefits to encourage the economic progress of the local community by utilizing geothermal energy around them.

Exploitation in various sectors to increase the country's income and foreign exchange without paying attention to the principles of justice, economic democracy without paying attention to the preservation of natural resources and not considering the carrying capacity of the environment, waste, draining something unimportant and inefficient still continues.⁹Indonesia depends on the fertility of abundant resources such as petroleum, coal, copper, geothermal, gold and tin. Excessive exploitation of natural resources that leave giant holes, air and water pollution, as well as excavation residues

⁷John W. Lund and Aniko N. Toth, Direct Utilization of Geothermal Energy 2020 Worldwide Review, Proceedings World Geothermal Congress 2020, Reykjavik, Iceland, April 26 – May 2, 2020

⁸Bentham, J. in Saphiro, I. 2006. *Principles and Morals in Politics*, Jakarta: The Indonesian Torch Foundation in collaboration with the U.S. Embassy Jakarta and the Freedom Institute, p. 14.

⁹Fitrian Noor, Natural Resources Management Based on the Principles of Fiqh Al-Bi'ah, Scientific Journal of Pancasila and Citizenship Education, Vol. 3, Number 1, June 2018.

that require the cost of returning nature and others without paying attention to the carrying capacity of the environment has an impact on the destruction of the earth.¹⁰

In developing geothermal energy as one of the backbones of renewable energy in Indonesia's energy mix, the participation of all stakeholders and collaboration are needed.¹¹ This study aims to analyze the utilization of geothermal energy based on local potential in Aceh. Geothermal is an environmentally friendly energy and an asset that can be used to support national development. In accordance with the mandate of the 1945 Constitution of the Republic of Indonesia, the natural resources contained in the earth are controlled by the state and used to the greatest extent for the prosperity of the people. The state's responsibility in realizing the welfare of the people is carried out by the Government in the form of Geothermal implementation.

Article 4 (2) of Law Number 21 of 2014 concerning Geothermal states that the control of geothermal by the state as referred to in paragraph (1) is organized by the Government, provincial governments, and district/city governments in accordance with their authority and based on the principle of utilization. Article 156 of Law Number 11 of 2006 concerning the Government of Aceh which regulates the management of natural resources The district/city government has the authority to manage natural resources in Aceh both on land and in the sea, including geothermal energy. Therefore, opportunities for the community to utilize geothermal energy are still open but the reality is that it cannot be used properly.

Although norms related to management, the use of geothermal has been regulated in such a way, but the reality of management, the use of geothermal has not been carried out optimally. This can ignore the right of the community to utilize the geothermal resources around them, in addition to hampering the economic development of the local

¹⁰Maya Zulfa Maslihatin and Moh. Qudsi Fauzy, Conservation of Marble Mine Natural Resources in a Review of Islamic Perspectives (Case Study of PT. Indonesian Marble Industry Tulungagung, Besuki District), Journal of Sharia Economics Theory and Applied Vol. 3 No. 11 November 2016: 915-927.

¹¹ Mukhamad F, et al. Renewable Energy Literacy in Supporting Geothermal Project in Indonesia: Where Are We Now?, Proceedings, 46th Workshop on Geothermal Reservoir Engineering Stanford University, Stanford, California, February 15-17, 2021 SGP-TR-218 1

community in particular and the wider community in general. This study will analyze the factors that hinder the rights of local communities to management, the use of geothermal energy to improve welfare in BenarMeriah and find solutions.

Research Methods

This research is a qualitative research, using legal research methods with an empirical juridical approach and socio-legislation. Specifically, the research location was taken in Benar, Meriah, Central Aceh. Data collection activities were also obtained through field research in the form of interviews. As for secondary data, it was obtained through literature studies. This analytical and critical data is needed to be able to find out the problems that occur, as well as revise laws related to the right of the community to manage and utilize geothermal energy around them. Charterjee¹² stated that this method is used to open up space for researchers to criticize, improve and provide suggestions for revision or cancellation and changes to weak and ineffective laws. In this context, it is related to the community's right to management, the use of geothermal energy to improve welfare in Benar.

Discussion:

3.1 Rights of Geothermal Energy Management Communities

The rights of the community in the management and utilization of geothermal energy sources, in Indonesia, which is an archipelagic country consisting of around 17,000 islands, where the land area reaches 1,811,569 km² and the ocean area reaches 93,000 km². where the land area is larger than the ocean. Sabang in the west to Merauke

¹² Charterjee, 2000, *Methods of Research in Law*, Old Bailey Press, London, p. 38 (NA-34).

in the east. Indonesia's geothermal resources range from Weh Island in Aceh province to the islands of Maluku and Flores in eastern Indonesia.¹³

Geothermal energy management as one of the natural resources and its useful use for humans. natural resources water resources Natural resources include all resources found in nature and all systems that can be useful for humans, technology and society (Flavin C., 2002).¹⁴ Although self-flowing geothermal resources have been used for bathing for centuries, the direct utilization of geothermal resources has not received the same attention as electricity generation. Over the past few years, the direct use of geothermal has increased its momentum and received attention from the community, governments, investors, and multilateral development organizations.¹⁵

Direct utilization of geothermal energy that is considered an object for the public interest according to Anthony I. Ogus that goods that contain the meaning of public interest¹⁶ Both classified as public goods and public ownership. Public Goods contain the meaning that the goods have the meaning of public interest and the goods are not owned by anyone. Thus, the government is obliged to control its use through various permits in the form of *vergunning*. Meanwhile, public ownership means that the goods have a meaning of social importance and the goods belong to all the people, so the business must be able to provide benefits and welfare for all people equally.

New renewable alternative energy is a substitute energy that can be used continuously that is available in nature. The use of new renewable alternative energy has

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¹⁴ Flavin C., 2002, *Starea lumii (The world state)*, Edit. Tehnică , București, Romania, in: Carmen Zaharia, Daniela ȘUTEU, *The Natural Resources And Sustainable Development, Cercetări Agronomice în Moldova*, Vol. XLIV , No. 1 (145),2011

¹⁵ Lilja Tryggvadóttir, *Direct Utilization of Geothermal Resources: Overview with focus on Africa*, Proceedings, 8 th African Rift Geothermal Conference, Nairobi, Kenya: 2 – 8 November 2020

¹⁶ Anthony I. Ogus, *Regulations Legal Form and Economic Theory*. Portland, Oregon: Hart Publishing, 2004, p. 227.

been regulated by the government through Presidential Decree No. 5 of 2006 concerning the National Energy Policy for 2006-2025 which explains that 17% renewable energy must be met in the energy supply. New and renewable energy (NRE) available in Indonesia include geothermal, water, biomass, and solar energy. Excessive dependence on limited energy such as fossil fuels, while the need for high energy can lead to an energy crisis (Logayah et al., 2023). This energy crisis needs to be overcome through the use of new and renewable energy so that Indonesia is not completely dependent on non-renewable energy. This new and renewable energy is a target that Indonesia wants to achieve which is enshrined in Government Regulation No. 79 of 2014, where in 2025, the use of new and renewable energy can reach 23%, while in 2050, it is expected to reach 31%. The goal is not only to prevent further energy crises, but this new renewable energy has a low impact on environmental damage and also ensures future energy sustainability (Sih Setyono et al., 2019).

The government focuses on the use of new and renewable energy based on the excess of new and renewable energy. The advantages of new and renewable energy include relatively easy sources to obtain, free of charge, minimal waste, not affecting global temperatures, and not affected by rising fuel prices (Tulong et al., 2021).¹⁷In addition, the advantages of using new and renewable energy include: 1) many types with large quantities, 2) the potential for new and renewable energy in Indonesia to be much cleaner and more affordable, 3) environmentally friendly because it can reduce emissions in the air due to the use of fossil energy, and 4) easy to obtain in Indonesia (Guna & Mubarak, 2021).¹⁸

¹⁷ Tulong, J., Kolibu, H. S., Pasau, G., & Suoth, V. A. (2021). Study of Wind Energy Potential in Mount Tumpa Tongkaina Village, Bunaken District <https://doi.org/10.35799/jmuo.10.2.2021.33989>

¹⁸ Guna, G. D., & Mubarak, A. (2021). Implementation of the development of new renewable energy for micro hydro power plants (Pltmh) by the West Sumatra Provincial Energy and Mineral Resources Office in South Solok. *Journal of Management and* <https://doi.org/10.24036/jmiap.v2i4.176>

3.2 Land Ownership Management and Conflicts.

The management and utilization of geothermal energy sources are often hindered by conflicts of interest in land ownership. This is due to a violation of regulations or the background of someone who behaves deviantly. In the perspective of conflict that emphasizes the pluralistic nature of society and the emergence of unrest in society due to the imbalance of social and economic positions and statuses as well as legal status that has an impact on legal protection in the middle of the community that occurs between various groups among them. Therefore, it raises legal problems in the management and utilization of geothermal energy sources on land owned by the community, which is thought to be used to encourage their economic development.

. According to Sorokin, the basis and core of the layers in society is the absence of balance in the distribution of rights and obligations, and the responsibilities of social values and their direction among members of society.¹⁹ According to the conflict theory of Ralf Dahrendorf, conflicts of interest and coercion or coercion that unite society under various pressures. Society is united by constraints in which society is delegated power and authority over other parties. The difference in the benefits of authority has always been a determining factor in systemic social conflicts.²⁰ This theory understands society in terms of conflict which starts from the fact that the members of society consist of two categories, namely those in power and those who are dominated. This dualism includes the structure and nature of living together so that it gives rise to different interests and may even be opposite, thus triggering clashes between them.²¹

Conflict Theory as a perspective that views society as a social system consisting of different interests where there is an effort to conquer other components in order to fulfill other interests or obtain maximum benefits. Internal family conflicts of interest related to land ownership of geothermal energy sources have the potential to have a negative

¹⁹Soerjono Soekanto, 1995. *Sociology of an Introduction*, Jakarta, Raja Grafindo Persada, p. 220.

²⁰Ritzer, G and Goodman DJ. 2009. *Sociological Theory from Classical Sociological Theory to the Latest Development of Postmodern Theory*, Yogyakarta, Kreasi Wacana, pp.282-283.

²¹George Ritzer, 2004. *Sociology of Science with Dual Paradigm*, Terj. Alimandan, Jakarta, Raja Grafindo Persada, p. 26.

impact on the use of this energy. These conflicts need to be resolved properly in this case a win-win solution between internal families. According to Lewis Coser²², conflict resolution is carried out using a conflict rescue valve, in this study the rescue valve is a win-win solution that is realized in the form of effective resolution that is resolved (mediated) by the gampong (village) apparatus and the local government.

The effective management and utilization of geothermal energy is part of the implementation of good state management for the welfare of the community. These activities are used to meet the needs of human life so that they can prosper human life (Amalia et al., 2021).²³ In the event that geothermal energy sources are not managed, the purpose of implementing geothermal activities to provide the greatest benefits for the welfare and prosperity of the people will not be realized.²⁴

Conflicts of interest that occur in the control of land for geothermal energy sources have an impact on the right of the community in general to enjoy the benefits of geothermal energy such as hot springs in BenarMeriah, Aceh Province. Thus, an effective utilization pattern is an important matter to be carried out immediately. This is necessary as part of good business management to minimize the neglect of the community's right to utilize the available hot springs on their land and in their areas for the welfare of the people, so a pattern of conflict resolution and effective use of energy resources is needed.

Conflicts can have a direct or indirect impact on social capital and human resources to carry out governance related to the management and utilization of geothermal energy in this study in the form of hot springs along with governmental, social or political systems that maintain the realization of the functionality of natural resource management, especially good geothermal energy as a means of protecting the rights of

²² Lewis A. Coser, *Social Conflict and the Theory of Social Change*, The British Journal of Sociology, Vol. 8, No. 3. (Sep., 1957), pp. 197-207.

²³ Amalia, Syarifah, A., Rahmawati, L., Syariah, N., Miskiyah, Z., & Rosia, R. (2021). Natural resource management to create human welfare. *Al-Hisab; Journal of Sharia Economics*, 1(2), 12–26.

²⁴ Article 3 of Law No. 21 of 2014 concerning Geothermal

citizens. Conflict will have negative impacts and long-term implications on people's well-being, and political, social, and economic consequences.²⁵

The utilization of geothermal energy involves aspects of exploration, exploitation and utilization activities in an integrated manner. This energy source is said to have economic significance if the reserves found can be exploited and used directly as a source of thermal energy near the source, namely by turning it into a power plant or indirect use is by making geothermal energy as a dryer for tea, tobacco, cloves or other plantation products and also can become a hot spring pool which is a tourist facility for the community. Energy is low-cost and environmentally friendly, in addition to the source can be used directly or indirectly. Use directly for non-electrical purposes such as hot springs.²⁶ Therefore, proper management of geothermal energy is a serious concern so that the goal of natural resource management to be used for the welfare of the community to realize a prosperous society becomes a reality.

3.3 Community Rights to Geothermal Energy Management in Benar-Meriah

The rights of the community in terms of geothermal energy management in Benar. Usually, people in areas with the habit of living together together, as well as in facing a conflict. In the context related to the issue of management law, the use of geothermal resources in the form of hot springs due to conflicts of interest within the landowners is still hindered from the use of hot spring energy to improve the welfare of the community, especially the local community and the general public.

According to the results of a field study conducted in the research area, the obstacles to community economic development through the use of geothermal energy

²⁵Priyo Utomo (ed.), 1993, *Introduction to Sociology: A Student Guidebook*, Jakarta, Gramedia Pustaka Utama, p. 94.

²⁶Adam Muhammad Yanis, Utilisation of Geothermal Energy that Impact Rights to Clean Water Needs, *Fiat Justisia*, Volume 13 Number 3, July-September 2019: pp. 255-270

sources in the form of hot water resources are found around and even on land owned by themselves. Hemahayati explained that in Benar-Meriah there are 7 (seven) geothermal energy coordinate points in the form of hot water that have not been managed effectively. As far as it is only used for sweeteners such as in the gampong: Timang Gajah, Weh Pesam. Weh Pesam Village (pante raya turn right-there is a village bath). As for Bandar Lampaham, Simpang Balik (Sumber Besar), Rime Gayo Gate which is planned for geothermal there are about 7 points in it - small but many points), while in Damaran Baru, Siautama (it cannot be accessed yet because there is no detailed info for access.

Furthermore, he also explained that a draft has been tried to make a draft on the direct use of water resources, the content of which is related to not being owned by individuals in the form of a regent regulation which refers to article 33 of the 1945 Constitution that water sources are state-owned and managed for the benefit of the community. However, it is still constrained by water sources that are in the zone of land owned by the community, the community claims private property so that it becomes a dispute. Among the 7 points in point 1 above, only 1 point belongs to the local government (Pemda) and is located between state-owned land and community-owned land. The empowerment plan is such as for drying coffee because it has good steam. Coordination has been carried out with PUPR, PDAM, village heads involved, communities, business actors (receiving suggestions and inputs for the draft mentioned in point 2 above) but there are people who ask for compensation.²⁷

According to Syamsul Bahri, hot water management (there are 2 parts: the upper one is owned by the local government managed by a third party, the lower one is privately owned by the Shia kuala foundation). In early 2021, the village asked for a contract to be managed by the village, but until now it has not been responded to and there is no answer. on top of the directly adjacent spring source, which is under the flow of the above spring source which originally belonged to the community, used to be sold to the local

²⁷Hemahayati, Policy Analyst/Head of Human Resources, Trade and Energy and Mineral Resources Office of Bener Meriah Regency, interview August 28, 2024.

government in 1993 when his grandfather was the sub-district head. The local government's land is only in the pond, the road still belongs to the community (the Shia kuala foundation). The community has not received information that geothermal energy can be used as electricity, the community has not received socialization from the Regional Government regarding the further use of geothermal energy. There are internal family conflicts related to ownership. So far, residents have only enjoyed free bathing so that there is no income for PAD parking gampong and hot springs with different ownership

The village wants to manage, but there is no other point of use is the flow of hot water to residents' houses, there are 4 (four) groups that have been supplied with hot water from 2018 to 2019 with the collection of contributions. In this case, ideally, the village can use hot water to open and manage its own pond, but constrained by land using geothermal energy for direct community empowerment, there is no provision for a gampong (qanun gampong).²⁸

Closing:

Thus, the community's rights in the management of BenarMeriah have not been utilized because there are obstacles that hinder the use of geothermal energy in the form of hot water in the form of land ownership conflicts. In addition, the public has not been informed, socialization about geothermal energy can be used as electricity and for other business aspects. To overcome the obstacles, the local government and the gampong apparatus intervened to resolve internal conflicts over land ownership and educate the community on the use of the energy contained on their land on a simple scale and which limits they can use for the progress of the community's economy in general.

²⁸ Syamsul Bahri, Reje Simpang Balek, Interview August 28, 2024

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