

EXPLORING GEOTHERMAL ENERGY DEVELOPMENT IN INDONESIA: Policy Failures and Impacts on Women's Rights



RECOURSE

Making finance accountable to people and planet



Solidaritas Perempuan

Women's Solidarity for Human Rights



EXPLORING GEOTHERMAL ENERGY DEVELOPMENT IN INDONESIA: Policy Failures and Impacts on Women's Rights

Published by Recourse and Solidaritas Perempuan

October 2023

Authors: Salsabila Putri Noor Aziziah, Arieska Kurniawaty, Mark Moreno Pascual with contributions from Solidaritas Perempuan Flobamoratas and Solidaritas Perempuan Sebay Lampung.

For further information on the issues raised in this report please contact:

Recourse
Kraijenhoffstraat 137A
1018 RG, Amsterdam
The Netherlands

Recourse campaigns for a world where people and planet are at the heart of development. For more information, please visit www.re-course.org.

This publication may be used free of charge for the purposes of advocacy, campaigning, education, and research, provided that the source is acknowledged in full. We request that all such use be registered with us for impact assessment purposes.

CONTENTS

Executive Summary	4
I. Geothermal Energy Policy in Indonesia	6
II. A Grassroots Study: World Bank Geothermal Projects in Indonesia	9
A. Rajabasa Geothermal Project Situation, Lampung	11
B. Situation of the Watuwawer Geothermal Project, Atadei, NTT	15
III. Conclusion and Recommendations	19
Glossary of Terms	21
Endnotes	23

EXECUTIVE SUMMARY

The relentless pursuit of geothermal energy sources in Indonesia has sparked a range of concerns that warrant careful examination on the national government's agenda for geothermal expansion (e.g. Plan for Flores Islands to be a geothermal hotspot) while disregarding communities' rights and needs. While geothermal energy holds significant promise as a sustainable and environmentally friendly alternative to fossil fuels, its rapid development, including aggressive exploration and drilling operations, raises a series of pressing issues. These concerns encompass economic viability, technological challenges, social implications on indigenous communities and women in particular as well as potential environmental risks. The government's indifference to the ecological, social, economic and cultural factors of the local community is reflected in the following case studies covered in this research.

The World Bank's active support for the development of geothermal energy in Indonesia has played a pivotal role in advancing the country's energy objectives. As Indonesia strives to harness the potential of geothermal energy to address its energy needs and climate goals, it is imperative to address these key concerns in a comprehensive manner to prevent further negative impacts on communities and avoid further reputational risks on renewable energy development in general.

The experience presented in this report detail a chain of failings by the Indonesian Government and the World Bank as investors, including:

- ▶ While geothermal energy is a sustainable and renewable power source, the way related projects are being implemented in Indonesia lacks concern for the people or nature in the target areas.
- ▶ WB support for geothermal expansion increased Indonesia's national debt, as it did not cover the highly expensive exploratory drilling operations, and the WB does not take responsibility for the impacts of the testing phase of the project.
- ▶ Government laws for geothermal development give priority towards permit granting, allowing little community recourse when there is environmental damage or issues related to land acquisition.
- ▶ Corporations that have vested interest in geothermal projects usually undertake the environmental and social impact assessment process, which results in an over-emphasis on the benefits of profit-oriented development over potential project impacts on the ecosystem and communities.
- ▶ Gender impact assessments for geothermal projects studied in this research were too narrow, only considering employment and not the impact on women in project-affected communities.
- ▶ There is a lack of information on the potential scope and impact of projects provided to communities, and whatever available information is not provided in an accessible format for the communities to use (i.e., documents are only available in English).
- ▶ Investment-induced large scale expropriation of land and living space has now taken a new form under the auspices of energy transition, including geothermal power plant development.

Based on the findings of this study, we forward the following recommendations:

- ▶ The exploration and implementation of geothermal power plants must be only conducted and driven by the consent and needs of local communities, especially women and indigenous communities in the area.
- ▶ The Government of Indonesia and the World Bank Group (WBG) must ensure a meaningful participation of project-affected communities in every step of the geothermal project and other large scale development projects.
- ▶ The WBG must ensure that their financial intermediaries and all entities within their projects comply with strengthened Environmental and Social Standards (ESS).
- ▶ The WBG and all entities involved in geothermal development projects must ensure the accessible and understandable information (e.g. Gendered Environmental Impact Assessment) for local communities and Governments in order for them to rationally determine and/or provide their consent.
- ▶ The Government of Indonesia must fulfil their constitutional mandate to respect and protect the rights and lives of the Indonesian people over any large-scale climate investment projects.
- ▶ The Government of Indonesia must strengthen the capacity of local governments to manage environmental and social risks related to geothermal projects in order for them to critically examine the impacts toward communities in their area.

I. GEOTHERMAL ENERGY POLICY IN INDONESIA

The shift towards renewable energy sources, a crucial component in mitigating the impact of the climate crisis, is perceived as a chance for Indonesia to harness renewable energy resources, including geothermal energy. However, the extractive economic model is evident in the promises made by the Government regarding the climate agenda. This study examines the incorporation of geothermal energy as a renewable energy objective in Indonesia's energy policies, subsequently showcasing instances of geothermal projects in the country with particular focus on projects supported by the World Bank (WB). Lastly, it puts forth a feminist just transition framework as a means to challenge the geothermal energy agenda in Indonesia.

The Indonesian government argues that the potential for 'renewable energy' in Indonesia can reach up to 3,686 gigawatts (GW). According to the Secretary General of the Ministry of Energy and Mineral Resources (ESDM), Rida Mulyana, this potential can become Indonesia's capital for the energy transition. Indonesia is estimated to host 40% of the world's geothermal reserves. The Government has found at least 300 potential geothermal energy reservoirs with an energy potential of 24 GW in Sumatra, Java, Nusa Tenggara, Sulawesi and Maluku. However, the Government of Indonesia's extractive approach to geothermal development has resulted in various policies and operations targeting the development of destructive 'renewable energy' projects and facilities in various regions.

Energy policy in Indonesia is regulated under Law no. 30 of 2007 (Energy Law). The Energy Law defines renewable energy as sources produced from sustainable means which includes for example geothermal, wind, bioenergy, sunlight, water flows and waterfalls, as well as the energy harnessed from the movement and differences in sea temperature. Article 4 of the Law states that geothermal resources are controlled by the state and utilised for the 'prosperity of the people.' The notion of State control over land and resources (Hak Menguasai Negara/HMN) is also enshrined within Article 33 of Indonesia's Constitution. The Constitution presumes that people lawfully delegate their control to the State in managing their lands and resources for matters that are beyond the people's capability to manage, and therefore not a delegation of ownership. However, State's and corporations' interests often collide in the process resulting in a tendency to prioritise profit-driven interests over the rights of communities and environmental conservation.

The Energy Law also mandates the Government of Indonesia through the National Energy Council to be responsible for national energy policies that ensure fair, sustainable and environmentally sound principles for national energy independence and security. The mandate was later reduced to Government Regulation No. 79 of 2014 concerning National Energy Policy (PP No. 79 of 2014) which includes energy availability for national needs, energy development priorities, utilisation of national energy resources, and national energy reserves.

The National Energy Policy stipulates that at least 23% of new and renewable energy (Energi Baru Terbarukan/EBT) must contribute to nationwide energy production by 2025. The Government then issued Presidential Regulation (Perpres) No. 112 of 2022 which aims to accelerate renewable energy development for the provision of electricity. Presidential Decree No. 112 of 2022 still contains a loophole that allows further financing of coal-fired power plants (PLTU). The Decree justifies the establishment of new coal power plants to operate till 2050 and those that are utilised for National Strategic Projects (PSN).

The energy sector is one of the important sectors covered for the purpose of reducing greenhouse gas emissions, especially the energy transition commitments that the Government has agreed to participate in various international forums. For this reason, the Government of Indonesia drafted the New Energy and Renewable Energy Bill (EBET Bill/RUU EBET) which it claims aims to provide energy access to communities. The EBET Bill is currently under discussion in the House of Representatives (Dewan Perwakilan Rakyat/DPR) but there has been no meaningful participation with project-affected communities thus far. The EBET bill also proposes a number of false solutions including the classification of coal derivatives as 'new energy.' Geothermal is also listed as a priority renewable energy source in the EBET Bill.

The Government through Law no. 21 of 2014 concerning geothermal development outlines the principles that guide the implementation of geothermal activities, namely benefits, efficiency, fairness, economic optimization in the utilisation of energy resources, affordability, sustainability, independence, security and safety, and preservation of environmental functions. These principles conflict with one another, in which some have ecological and social nuances and the rest are based on profit-driven and economic interests.

In past years, the Geothermal Law (Law No. 21 of 2014) delegates the granting of geothermal permits to be shared among National, Provincial, and Municipal Government levels. Previously, corporations were required to obtain (1) Borrow-to-Use Permit (IPPKH) for protected forests or productive forests; and (2) utilisation permit for conservation forests in order to conduct geothermal business for indirect use. However, after the passage of the Omnibus Law on Job Creation in 2020, the requirements for the provision of geothermal permits were reduced and the conditions now depend only on the fulfilment of NSPK (Norms, Standards, Procedures and Criteria). Provisions on sanctions in the form of revocation of permits or temporary suspension of geothermal projects from the previous regulations were removed through Omnibus Law on Job Creation. Further, the authority to approve land use changes that are needed to facilitate the building of geothermal energy infrastructure was shifted to the National Government and can now be carried out under a borrow-to-use approval scheme. In addition, public access to information became more difficult because the authority to supervise, guide, manage geological information data was withdrawn to the central government.

Instead of providing energy justice for rural communities, the Government is providing fiscal and non-fiscal incentives for corporations that develop renewable energy infrastructure. With the government engaging in the construction of renewable energy infrastructure, there must be clear guidelines and safeguards drawing the lines between the role of two entities. On top of that, the government must ensure that the incentives given will be sufficient for corporations to not excessively exploit the facility in pursuit of profit-based interests.

Based on the various policies drafted by the government together with the The House of Representatives of the Republic of Indonesia (DPR), it can be seen that there is a tendency for exploitation related to the energy transition agenda in Indonesia. The deregulation facilitated by the Job Creation Law makes it easier to issue permits for geothermal projects which increases the potential for land grabbing in the name of climate and renewable energy initiatives (See Box 1). On top of that, the permit issued by the Government does not require meaningful participation of project-affected communities.

According to the Geothermal Handbook published by the World Bank in 2012, there are 8 development phases in developing a geothermal power plant including Preliminary Survey, Exploration, Test Drilling, Project Review and Planning, Field Development, Construction,

Start-up and Commissioning, and Operation and Maintenance.¹ The document states that test drilling is the riskiest phase in developing geothermal power plants. However, recent experience of affected communities suggest that risks are not being explained sufficiently and are mostly related to technical and operational matters as well as financing risks without elaborating impacts towards project-affected communities.

Case box 1. People of Poco Leok, Flores, East Nusa Tenggara Defending their Communal Land against Geothermal Project by National Electricity Company (PLN)

JATAM.org - On 9 June 2023, residents of Poco Leok, Flores, East Nusa Tenggara, were barricading their lands to block vehicles belonging to PLN who are currently demarcating land for the Poco Leok geothermal project. The arrival of the PT PLN team was escorted by fully armed police officers and a number of soldiers. Even so, residents from the four traditional villages, namely Gendang Lungar, Gendang Tere, Gendang Racang and Gendang Rebak built barricades, prohibiting company vehicles from entering the Lingko Tanggong area (communal land) which was designated as one of the geothermal drilling points, well pad D. The geothermal project at Poco Leok itself is an expansion project for the Ulumbu Geothermal Power Plant (PLTP) which has been operating since 2012. The expansion of the geothermal project to Poco Leok—about 3 kilometers to the east of the Ulumbu PLTP, is in order to meet the target of increasing the capacity of the Ulumbu PLTP from the current 7.5 MW to 40 MW. The government and company's forced efforts to expand the Ulumbu geothermal drilling area to the Poco Leok area were opposed by the residents. The barricade is the eighth action following the last confrontation on 27 February against Manggarai Regent, Henry Nabit, who issued the project location permit in December 2022.

The authors have conducted interviews with mining and geothermal academics to learn more about the dangers associated with the geothermal drilling phase. The interviews suggest that drilling operations for geothermal projects can potentially impact the geological stability of the surrounding area. Drilling activities can potentially increase the probability of seismic activity or earthquakes affecting communities. Even if the geothermal project in the area is suspended, there is no guarantee that corporations will take steps to mitigate and address the impact of wells—such as in Atadei, East Nusa Tenggara.

Although considered clean energy or 'renewable energy,' building a geothermal power project requires a large investment in both exploration and implementation phases. Development of a geothermal energy power plant in Indonesia requires \$4-5m for 1 Megawatt (MW) of power generation capacity. Approximately up to 60% of cost in developing geothermal power plants streamed into the drilling stage. On top of that 10–15% of the cost will be needed for the supporting infrastructure of a geothermal power plant. According to the chairperson of Jakarta Drilling Society, the drilling stage costs approximately \$60,000 - \$80,000 per day.² As a result, the Indonesian government sought climate investment from different international financial institutions including the World Bank. However, past experience shows that such investments are carried out with insufficient safeguarding in place particularly on gender equality and environmental standards.

II. A GRASSROOTS STUDY: WORLD BANK GEOTHERMAL PROJECTS IN INDONESIA

In 2015, the Ministry of Energy and Mineral Resources together with the WB and the Asian Development Bank (ADB) issued a report that reviewed the potential of geothermal resources in Indonesia.³ The report states that the challenge in developing geothermal energy is capital mobilisation due to high financial needs. To add 3,000 MW of geothermal electricity capacity, \$4b of equity and \$9.5b of national debt are needed. However, international financial institutions such as the WB and the ADB are often reluctant to fund the geothermal exploration phase due to profit risks involved. Most of these institutions will channel funds once the exploration stage reaches more than 50% and it is certain that there are geothermal resources that can be exploited. Furthermore, the WBG with their 2021-2025 Climate Change Action Plan (CCAP) states that the Multilateral Investment Guarantee Agency (MIGA) would bring together investors to invest in the 'renewable' energy sector including geothermal.⁴

These two documents (WB-ADB report and CCAP) promote a very profit-oriented framework that solely focuses on methods to mobilise geothermal investment funding in Indonesia. In order to obtain climate funding through investment, the risks of investing in geothermal energy and other renewable energy sources are transferred to the public sector in the form of loans, equities and guarantees which in turn increases foreign debt.⁵ The increase in foreign debt due to the need for climate finance was not well anticipated by the Government. Excessive foreign debt servicing has triggered cuts in public spending for public services such as health, education, and social protection programs which are known to benefit women.⁶

Further, these two documents from the WB and ADB do not address the potential impact of natural disasters and land grabs on project-affected communities, particularly women and the surrounding ecosystem. The same patterns of land-grabbing generated by development investments have now been adopted in the name of energy transition. Despite the fact that geothermal projects have a considerable impact on the living space of the surrounding population and the ecosystem, information about geothermal projects is difficult to obtain, particularly for local residents. It therefore becomes critical to study the situation at the grassroots as a result of geothermal projects, both those that are currently being planned and those that are already underway.

The WB project website shows that there are currently three active geothermal projects in Indonesia that were financed by the WBG between 2017 and 2019. These are the Indonesia Geothermal Resource Risk Mitigation Project (GREM) and the two Geothermal Energy Upstream Development projects (P155047 and P161644). The total funding for the three projects is \$380.25m and each project covers several points in Indonesia. Authors will discuss details of the GREM Project in the following subsection. The following is a case study of the GREM project in Lampung and East Nusa Tenggara (Nusa Tenggara Timur/NTT). The authors are focusing on the GREM project in Rajabasa, Lampung, and Atadei, NTT as it is located in Solidaritas Perempuan's work areas. As a result, approaching local populations and obtaining documentation of their lives and surroundings in close proximity to a specified geothermal project area will be much more feasible.

Project Title	Total Project Cost	Commitment Amount	Borrower	Implementing Agency	Environmental Category
Indonesia Geothermal Resource Risk Mitigation (GREM) ⁷	\$465m	\$325m	Government of Indonesia	PT Sarana Multi Infrastruktur (Persero)	F
Geothermal Energy Upstream Development	\$6.25m	\$6.25m	PT Sarana Multi Infrastruktur (Persero)	PT Geo Dipa Energi, PT Sarana Multi Infrastruktur (Persero)	A
Geothermal Energy Upstream Development ⁸	\$360.3m	\$49m	PT Sarana Multi Infrastruktur (Persero)	PT Geo Dipa Energi, PT Sarana Multi Infrastruktur (Persero)	A

Table 1. World Bank Geothermal Projects in Indonesia

The GREM project is financed via various funding sources, one of which is the Green Climate Fund (GCF). To date, \$325m has been raised out of a total of \$465m required to implement all GREM sub-projects. This project consists of two components, namely, the geothermal drilling mitigation process and technical assistance. According to GCF documents, the GREM project includes 45 geothermal locations which are projected to be developed into geothermal power plants. The Implementing agency PT Sarana Multi Infrastruktur (PT SMI) in this project acts as an entity that cooperates with corporate parties, both the State Electricity Company (PLN) and other companies to carry out geothermal exploration.

As an entity implementing World Bank projects, PT SMI created an environmental and social management (ESM) framework for the GREM project. The ESM framework mapped at least 64 potential impacts, starting from the exploration process to the PLTP's project implementation. These impacts include: (1) environmental damage such as air, water and noise pollution; (2) loss of agrarian resources for the local community, including groundwater sources and community management areas; (3) socio-cultural impacts such as potential damages to local cultural heritage; and (4) the impact on indigenous peoples and their way of living.

An example can be seen in mitigation efforts listed by PT SMI for projects located in the middle of a protected forest. Instead of addressing the issue of potential environmental damage to a protected area, PT SMI merely justified their choice by arguing the 'lack of other alternatives for project locations or sites.' PT SMI's actions therefore demonstrate how it prioritises environmental exploitation over environmental sustainability by creating a comprehensive analysis that shows project benefits that presumably outweigh the environmental costs. In reality, the destruction of the protected forest will curtail nearby communities' access to food and resources.

It can be seen that there is a misleading paradigm in viewing gender inequality as a result of climate projects. In this case, the WBG, the GCF and PT SMI are indifferent to the reality that gender inequality will be exacerbated due to the land grabbing as a result of project site operations. The project they are pushing for not only deprives women from their living space but also exacerbates the impact of the climate crisis that women are experiencing in rural areas. The destruction of natural resources, the loss of local wisdom and threats to cultural heritage due to projects made in the name of addressing climate change cannot be converted to mere wages. Climate funding that prioritises large-scale projects instead of looking at the role and knowledge of women in mitigating the climate crisis and eliminating structural injustice will only worsen the situation of inequality they experience. There are hidden impacts of large-scale investment towards women, starting from the lack of women's participation in research and impact assessments. The lack of gender and intersectional perspective in scrutinising impacts of investments then lead to impacts on voice and agency, socio-economic and environmental repercussions, as well as negative effects on physical and psychological wellbeing and bodily integrity

Although the WBG, GCF and PT SMI have compiled these documents, there is no information that publicly lists the location of the geothermal project in Rajabasa, Lampung or Atadei, Lembata, East Nusa Tenggara. The existence of the Rajabasa and Atadei geothermal projects in the Indonesia Geothermal Resource Risk Mitigation Project (GREM) through the World Bank website can only be accessed by browsing procurement documents. The lack of information provided to the public actually violates the access to information policy made by the World Bank. The information referred to in this case is not only the disclosure of technical documents but more importantly to provide information that can be easily understood by women and the community at the grassroots level. Furthermore, the annual performance report released by the GCF in 2020 shows the absence of implementation of a series of social and environmental and gender assessments.

A. Rajabasa Geothermal Project Situation, Lampung

Particularly in the Rajabasa geothermal project, PT Supreme Energy Rajabasa (SERB) acts as the party implementing and developing the exploration plan in Lampung. PT SERB will supply the generated electricity to PLN through an electricity sales agreement under the Ministry of Energy and Mineral Resources. The Rajabasa geothermal project is expected to generate 220 MW of electricity, mainly executed by PT SERB along with a French corporation (GdF Suez or Engie) and a subsidiary of Fortune 500, Sumitomo Corporation.

Since the start of exploration in 2013, PT SERB has continued to push the exploration despite indigenous communities of Mount Rajabasa objections against the exploration of geothermal have been voiced.

The Rajabasa geothermal exploration was carried out within a protected forest and PT SERB assumed that the obligation to reforest would redress natural damage. This assumption is made without regard to the cultural values and attachment of the indigenous people in Rajabasa to their forest. As the Government deregulated land acquisition within forests for business purposes through Job Creation Law, exploration within protected forest is not violating the law per se. However, this law has failed people and project-affected communities in protecting the ecosystem and resources.

Impacts on women

It must be noted that land grabbing incidents in Rajabasa disproportionately impact women. Concession or land grabbing, especially in the Indonesian context, can be interpreted as the allocation of land or property rights from the community to the government or corporations, or individuals largely done in the name of 'development'. These lands are basically granted for a certain period of time and are earmarked for mining activities, large-scale plantations, and logging for which permits are granted by the Government to state-owned enterprises and private corporations. Before the talk of developing large-scale climate projects spread, Indonesia was the country with the highest instance of land grabbing in the world. This is due to the conversion of land functions into areas for monoculture agricultural production and large-scale forestry.

Unfortunately, the same pattern is currently being carried out in the name of an energy transition. The order of environmental institutions and their current agenda exacerbates land grabbing which can be called green grabbing. Initially, the term green grabbing emerged from a conservation discourse in which many charitable organisations and organisations that focused on conservation carried out the commodification of forests without paying attention to the lives of indigenous peoples around the area. John Vidal, who coined the term, also highlighted the elements of colonisation and accumulation, where colonisation also came in the form of environmental conservation. The author sees that green grabbing can also be used to describe land grabbing that is happening in Indonesia due to geothermal expansion.

The injustice felt by the people at the grassroots is then exacerbated by plans to develop geothermal projects in various regions. In the name of 'zero emission' targets, the government allows State-Owned Enterprises and other corporations to convert community land into geothermal drilling sites. Even though in some cases the community is still allowed to carry out activities on the plantation or land around the project, appropriation in the name of climate then requires changes in rules and authority over access, control, use and governance which lead to the marginalisation of the community and exacerbate the situation of women. This very much describes the situation of women in communities studied for this research as in the case of the Atadei and the Rajabasa geothermal development sites.

There are several special vulnerabilities that women have in relation to large-scale land grabbing, namely -

- 1) women's limited access to and control over land both under customary law and state law;
- 2) systemic discrimination in political and sociocultural relations, especially in decision-making related to living space, which often keeps women from being involved in development planning discussions and negotiations;
- 3) feminization of poverty; and
- 4) women's vulnerability to domestic violence, sexual exploitation and other injustices experienced by women, especially women heads of households.

This series of vulnerabilities shows that investment flows that target large-scale projects, including in this case geothermal projects, will only add to the multiple oppression experienced by women.


For women, being deprived of nature due to appropriation in the name of climate exacerbates the injustice they have experienced so far. In the Indonesian context, with its deep-rooted patriarchal culture and social order, women's ownership and control of land is very limited. At the same time, women are required to fulfil reproductive roles such as providing food and water resources for family needs which make them very dependent on nature. This in turn makes Indonesian women especially vulnerable to the impacts of environmental damages. In addition, failure to fulfil their reproductive and socioeconomic roles will encourage women to leave their village or find opportunities abroad to become migrant workers and be trapped in jobs that lack protection.

The length of time that women spend fulfilling their domestic roles results in a loss of time to participate politically and express their opinions in decision-making forums. The principle of free, prior, informed consent, which is carried out haphazardly by the World Bank in its various projects, is actually used as a tool to force various conversions of land and landscape functions into large-scale geothermal projects.

Impacts on indigenous peoples

Meanwhile, indigenous peoples around Mount Rajabasa reject geothermal exploration that will deprive them of their living space. According to an interview with the Chief of East Way Muli Village, Rajabasa Districts, community members had lost their farming space due to land acquired by PT SERB. At this point people are only allowed to plant within the area acquired by the PT SERB under the approval of their security guards. In this case, people have been deprived of their control over their lands as ownership shifted to PT SERB.

PT SERB continued to start the construction of the jetty to supply the heavy equipment needed for geothermal exploration although at that time the Government had not issued the permit. This was later dismissed by the community. One of the representatives of the indigenous peoples told of their place of attachment to Mount Rajabasa which became the shelter for their ancestors during the eruption of Mount Krakatau in 1883 and played an important role in the defence against invaders.

 *There are tens of thousands people in 8 sub-districts who depend on Mount Rajabasa for their livelihood. We are ready to sacrifice ourselves in defending Mount Rajabasa. It is no longer a matter of honour but a matter of life.*

– Yusuf Kahyar, Indigenous People's Representative of Rajabasa

Mount Rajabasa is one of the pillars of the Saibatin Paksipak Sekala Brak Customary Kingdom, in addition to four other mountains in Lampung. Not only that, Mount Rajabasa also has a spring that residents use for their daily needs. The community also stated that because Mount Rajabasa is a single mountain, it does not have a large amount of water reserves. The devastation of the environment surrounding Mount Rajabasa will also harm indigenous peoples' historical symbols, identities, and struggles, making it harder for future generations to sustain the cultural values that indigenous peoples have protected. Interview with Way Muli Village Chief, stated that the destruction of protected forest of Mount Rajabasa will potentially impact the lives of communities in 39 villages of 4 districts. On top of that, horizontal conflict is a concern as the

community is divided into opponents and proponents of the project. One of communities that are still opposing the execution of Rajabasa geothermal project is Panglima Alip indigenous community in Kampung Baru Village, Penengahan District, Rajabasa. From a map created by PT SERB, it shows that the area of exploration is mostly intersecting within the protected forest area. PT SERB claimed that the exploration area has lowest resource risk where high temperature systems with good permeability are expected to be encountered by wells. Their plan is to construct a 6m wide and 1,000-2,000m deep wells in 6 points on Mount Rajabasa (see Figure 1).

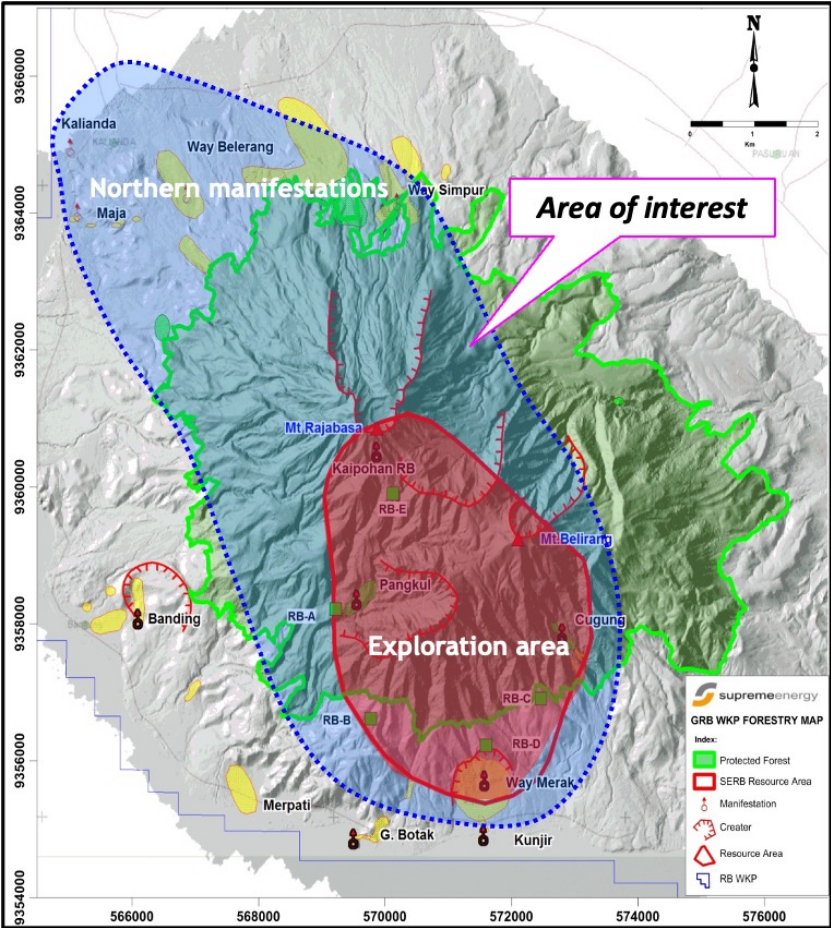


Figure 1. Designated Geothermal Project by PT Supreme Energy Rajabasa on Mount Rajabasa, Lampung

In the midst of ongoing waves of rejection, PT SERB obtained a permit from the Ministry of Environment and Forestry. Through the Decree of the Minister of Environment and Forestry Number 422/Menhut-II/2014 dated 25 April 2014 concerning the Borrow-to-Use Permit for Forest Areas (IPPKH) for Mount Rajabasa. The Minister of Environment and Forestry, through the permit, has allowed PT SERB to explore geothermal within 50 acres of land on Mount Rajabasa.

The Indigenous People of Saibatin Wayhandak then filed a citizen lawsuit against the Minister of Environment and Forestry and PT SERB through the Jakarta State Administrative Court (PTUN) with case number 152/G/2014/PTUN-JKT. The case emphasises indigenous communities' objection against the geothermal project of Rajabasa conducted by PT SERB. Saibatin Wayhandak indigenous communities claim that Mount Rajabasa is one of the pillars of their heritage among other four Mountains including Mount Seminung,

Mount Pesagi, and Mount Tanggamus. Besides the cultural aspect of Mount Rajabasa, as mentioned above, it has limited water reservoirs and communities will be prone to drought when water is heavily diverted for use of geothermal projects.

However PTUN later ruled in favour of PT SERB in a case related to the Rajabasa Mountain Forest permit on the pretext that the permit granted was legally valid and the activities that PT SERB would carry out were proven to be appropriate and protected by law. PTUN Jakarta also assumes that the electricity generated will contribute to the welfare of the community around the project. The Regent of South Lampung at that time welcomed the decision of the Jakarta Administrative Court. This case shows that law enforcement is not always accompanied by justice. The decision made by the PTUN Jakarta was not in favour of the environment, indigenous peoples and women affected by the project. Without considering the impact on people's lives, the Jakarta Administrative Court provides legitimacy and justification for the exploitation of Mount Rajabasa through its decision. The next step will be taken by PT SERB as they continue to carry out pre-exploration activities within the year.

B. Situation of the Watuwawer Geothermal Project, Atadei, NTT

East Nusa Tenggara is one of the provinces planned to become a centre for renewable energy and is identified as one of the areas to be supported by geothermal financing through GREM. One of the efforts to make this happen is through Decree of the Minister of Energy and Mineral Resources Number 2268 K/30/MEM/2017 dated 19 June 2017 which stipulates the Flores Islands as a Geothermal Island, which includes Lembata Island. This was then followed by socialisation of geothermal development in the Atadei Geothermal Working Area (WKP) by the Director General of EBTKE, Ministry of Energy and Mineral Resources in Lembata Regency, NTT. PLN was then assigned to manage the Atadei Geothermal Working Area (Wilayah Kerja Panas Bumi/WKP) with a 10 MW development plan and planned to operate commercially (Commercial Operation Date) in 2022.

Way before the Government issued an agenda to create Geothermal Island in NTT, two 800m deep wells had been drilled in 2005 namely Atadei Geothermal 1 and Atadei Geothermal 2. The two projects are extended in two villages, Atadei Geothermal 1 is in Atakore Village (Watuwawer Village) whereas Geothermal Atadei 2 is located in Kneping, Nubahaeraka Village (Waiwejak Village). However, it was cancelled due to technicalities

The discourse on the development of the Watuwawer geothermal plant then continued to 2008 through the Decree of the Minister of Energy and Mineral Resources number: 2966K/30/MEN/2008 dated 30 December 2008 which stated that the Watuwawer Geothermal WKP has an area of 31,200 hectares with a reserve of 40 MW. Shallow excavations were carried out in 2000 by the Ministry of Energy and Mineral Resources. Based on the investigation conducted by a team of community leaders in Lembata, Atadei District Government has not received any supporting documents (i.e. Environmental Impact Assessment) regarding the geothermal project in their area.

Even so, there are several locations of exploration plans in Atadei that are within proximity of two villages, Atakore and Nubahaeraka. The first well of Atadei Geothermal 1 is located only 114m away from the periphery of Atakore Village when estimated through Google Earth—approximately only 586m away from the centre of Atakore. Second drilled wells, Atadei Geothermal 2, is also adjacent to residential and community farming areas. The perimeter of Atadei Geothermal 2 is parallel with the community's farming lands.

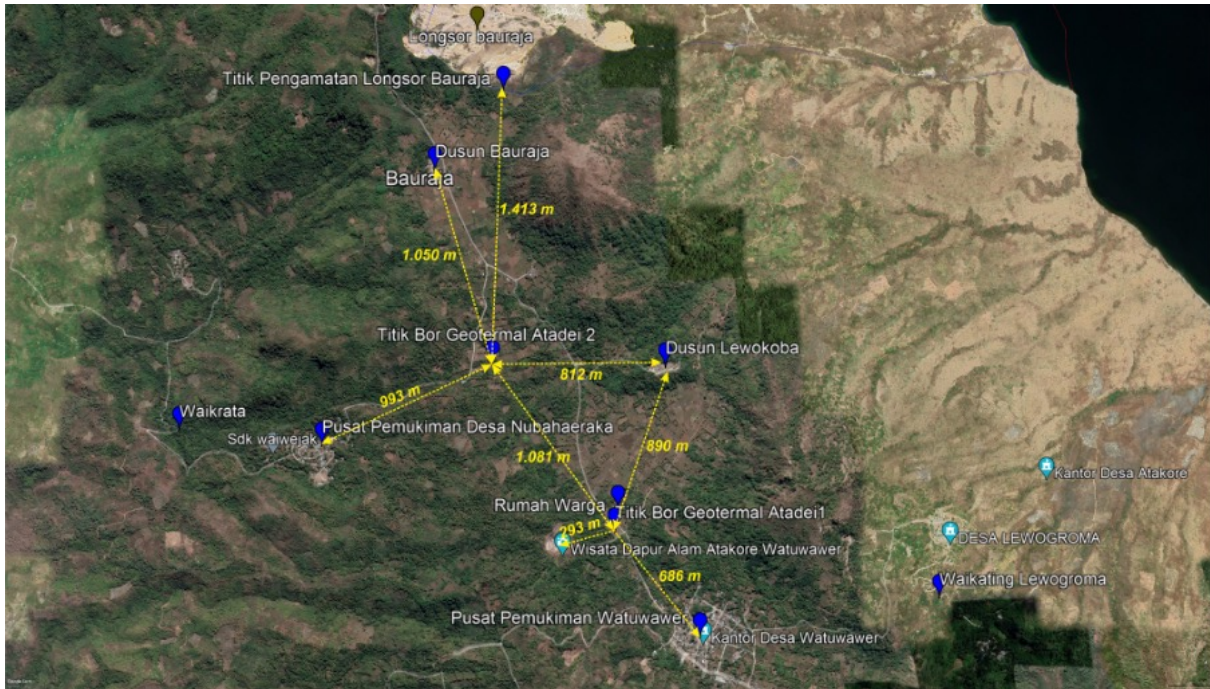


Figure 2. Investigation Team Mapping Result.

Loss of heritage and cultural values

In addition to land grabbing, pollution and disasters that can potentially occur, another impact that has the potential to arise is the loss of the cultural heritage of the local community. The cultural integrity of the community will be threatened along with the loss of land that has been occupied for generations. Many of the geothermal projects claim that they will look for geothermal sources far from customary lands, but the reality shows that exploration is still being carried out even though the land is not only a source of life but also the identity of the residents.

For example, the impact on agriculture will then lead to the potential extinction of the tradition of "Tun Kwar" or Grilled Corn in Atadei. The tradition, which is a form of gratitude for the abundance of corn crops, which is an important part of the identity of the Atadei people, is in danger of being lost. The loss of cultural values that cannot be converted into money is then not considered by the Government. Testimonial evidence from indigenous peoples in Atadei point to them experiencing a foul-smelling odour coming from the geothermal wells in Kneping. This in turn dissuades the community from conducting their Tun Kwar ritual in areas surrounding the wells.

According to community leaders, the ritual is threatened with extinction if it cannot be carried out.

The series of potential impacts are not heeded by decision makers. The Lembata Regency Government said that the geothermal development project will be included in the Draft Regional Regulation (Ranperda) concerning the Regional Spatial Plan (RTRW) of Kab. Lembata 2023-2043. This decision was taken following the policy set by the Central Government, namely a mining business licence (WIUP) for geothermal power plants.

Instead of taking sides with the people in Lembata, the Regent of Lembata avoided responsibility by stating that he was not the decision maker in the geothermal mine plan in Atadei. In fact, since the early 2000s, Indonesia has implemented decentralisation in which

the local government also has an important role and power to protect its people. The local government does not even have access to knowledge about geothermal development. This situation has also swayed the opinion of the local community.

One of the cases that occurred in relation to the World Bank's geothermal project affecting indigenous people is one experienced by indigenous Maasai in Kenya (see Case box 2).

Case box 2. Inconsistent Implementation of FPIC Principles for World Bank's Geothermal Projects Affecting Maasai Indigenous Community in Kenya

Brettonwoodsproject.org - On June 26, 2016 reported that \$330m loan from the World Bank to Kenya Electricity Expansion Program. Since the World Bank opted not to consider the Maasai as indigenous peoples, there was no meaningful consultation, their rights were not respected and free, prior, and informed consent (FPIC) was not obtained. This has led over 1,000 people, mostly indigenous Maasai, to be directly affected and an estimated 2,000 people indirectly affected by the programme in the Greater Olkaria Geothermal Area. The resettlement process conducted by Kenya Electricity Generating Company Ltd. (KenGen) has been problematic. Project affected persons (PAPs) had only agreed to relocate provided they receive the collective title to the land before resettling, however, this has not happened. In addition, the community's land was reduced from 4,200 to 1,700 hectares in the resettlement, and 14 families have still not received housing. Despite that keeping of livestock serves as an integral component not only of the Maasai economy but also of their identity, the land chosen is not suitable for grazing and no viable alternatives for the resettlement site have been offered.

In the context of Indonesia, the implementation of FPIC principles is complex since there is no law protecting indigenous peoples' rights. Indonesia currently does not have legislation that recognizes the collective identity of indigenous peoples.⁹ Even when the consultation forum is held, (indigenous) women are often denied their right to speak, their right to information, and their right to be considered in decision making. At that point, women lose their power and sovereignty to determine the form of development that suits their needs.

Environmental pollution and vulnerability to natural disasters

The narrative that geothermal energy will be the source of clean and renewable power in the future is not as simple as it seems. Air and water pollution are two leading environmental issues associated with geothermal energy technologies.¹⁰ Geothermal fluids generally contain carbon dioxide (CO₂) and hydrogen sulphide (H₂S) compounds. However, in several geothermal sources, ammonia, hydrogen, nitrogen, methane, radon, arsenic, and mercury were also found.¹¹ The compounds that are released and inhaled by the surrounding community can potentially cause various respiratory diseases. This risk will be difficult to handle especially as health services around the village cannot be accessed easily.

An increase in water temperature of around 2–3°C has the potential to affect the marine ecosystem around the geothermal project. The heating of the water temperature is then followed by compound particles which will damage the aquatic ecosystem affecting fish and plants which are also sources of livelihood for nearby communities. Coupled with the large demand for water to operate a geothermal power plant, it will have an impact on the breeding of fish and other aquatic species as well as local water consumption.¹² In this way, the livelihood of people who depend on rivers and other aquatic ecosystems are threatened.

For women who are attached to domestic household roles, they will be required to prioritise fulfilling family food above their needs. The reduced number of food and agrarian sources such as fish and water will add to women's domestic workload.

In addition to environmental pollution, the activities of geothermal plants can potentially increase seismicity.¹³ During the exploration stage, steam removal and water return produces new instability along existing fault or fracture lines which can cause small earthquakes that are felt by nearby communities.¹⁴ This tends to be very risky if the project is implemented within the area called the 'Ring of Fire'¹⁵ which includes Indonesia. Moreover, if the project is carried out in an area prone to hydrometeorological, geological, and volcanic activity such as Lembata Island, the possibility of triggering increased seismic activity becomes a huge concern for communities.¹⁶ Underground mines such as geothermal are more risky than surface mines because there are unpredictable seismic and volcanic activities. Therefore, corporations involved in geothermal projects must carry out continuous monitoring of seismic activity to prevent disaster risks toward communities around geothermal drilling areas.¹⁷

III. CONCLUSION AND RECOMMENDATIONS

In the context of the current energy transition, the climate finance agenda is being pushed through investment flows in large-scale climate projects including geothermal development. The same model of capitalist development is then implemented in the global climate agenda. When examined through a feminist just transition perspective, geothermal projects pushed by the Government of Indonesia together with big businesses and with the support of the World Bank are not providing a sustainable solution that addresses the impact of the climate crisis faced by women, indigenous peoples, fisherfolks, farmers and rural communities. Instead, the way geothermal energy projects are being developed in the country are providing further reputational risks for renewable energy solutions overall.

The Need for a Feminist Just Transition Framework

The case of aggressive geothermal expansion in Indonesia that does not consider the needs of women and indigenous communities demonstrates the need to come up with alternative frameworks of just transition. The idea of a just transition has been around since the 1980s and initially came from the demands of the labour movement. However, approaches to the concept of just transition was initiated mainly by male workers working in the mining sector towards pushing for the transformation of carbon-intensive economies to low emission industries.

In order for energy transition to be truly just and transformative, it must be seen from a feminist perspective taking into consideration the struggles of women, indigenous communities and other marginalised sectors of society - hence the concept of a 'feminist just transition framework.' This idea seeks to unite the concept of justice in feminist theory, both redistribution and recognition as well as meaningful participation of women in decision-making. The feminist perspective on just transition encourages a systemic transition and transformation. It pushes structural shifts away from current patterns of excessive consumption and production, as well as addressing inequality in work relations at the global level as well as transformation of the division of labour and gender relations at the family level, the reduction and redistribution of care work arrangements, and the elimination of economic inequality both between men and women and between countries.

The World Bank and the Government of Indonesia as two important entities promoting geothermal development. These institutions must ensure the following:



The exploration and implementation of geothermal power plants must be only conducted with and driven by the consent and needs of local communities, especially women and indigenous communities in the area.



The Government of Indonesia and the WBG must ensure a meaningful participation of project-affected communities in every step of the geothermal project and other large scale development projects.



The WBG must ensure that their financial intermediaries and all entities within their projects comply with strengthened Environmental and Social Standards (ESS).



The WBG and all entities involved in geothermal development projects must ensure the accessible and understandable information (e.g. Gendered Environmental Impact Assessment) for local communities and Governments in order for them to rationally determine and/or provide their consent.



The Government of Indonesia must fulfil their constitutional mandate to respect and protect the rights and lives of the Indonesian people over any large-scale climate investment projects.



The Government of Indonesia must strengthen the capacity of local governments to manage the environmental and social risks associated with geothermal projects in order for them to critically examine the impacts toward communities in affected areas.

GLOSSARY OF TERMS

ADB	Asian Development Bank
CCAP	Climate Change Action Plan
COP	Conference of Parties
DPR	Dewan Perwakilan Rakyat (House of Representatives)
EBET	Energi Baru dan Energi Terbarukan (New Energy and Renewable Energy Bill)
EBT	Energi Baru Terbarukan (National Energy Policy)
EIS	Environmental Impact Statement
ESDM	Ministry of Energy and Mineral Resources
ESS	Environmental and Social Standards
ESF	Environmental and Social Framework (World Bank)
ESIA	Environmental and Social Impact Assessment
ESM	Environmental and Social Management
FPIC	Free, Prior, and Informed Consent
FY	Fiscal Year
GCF	Green Climate Fund
GREM	Geothermal Resource Risk Mitigation Management Project
GW	Gigawatt
HMN	Hak Menguasai Negara ('Right of State control over land and resources')
IPPKH	Izin Pinjam Pakai Kawasan Hutan (Borrow-to-Use Permit for Forest Areas)
MIGA	Multilateral Investment Guarantee Agency
MW	Megawatt
NTT	Nusa Tenggara Timur (location of one of the GREM-supported sub-projects)
NSPK	Norms, Standards, Procedures and Criteria
PAP	Project-affected person
Perpres	Peraturan Presiden (Presidential Regulation)
PLN	PT Perusahaan Listrik Negara (State-owned Electricity Company)
PLTP	Pembangkit Listrik Tenaga Panas Bumi (Geothermal Power Plant)
PLTU	Pembangkit Listrik Tenaga Uap (Coal-fired Power Plant)
PP	Peraturan Presiden (Government Regulation)
PT SERB PT	Supreme Energy Rajabasa

PT SMI	PT Sarana Multi Infrastruktur
PTUN	Pengadilan Tata Usaha Negara (State Administrative Court)
RTRW	Rencana Tata Ruang Wilayah (Regional Spatial Plan)
UN	United Nations
WB	World Bank
WBG	World Bank Group
WIUP	Wilayah Izin Usaha Pertambangan (Mining Business Licence)
WKP	Wilayah Kerja Panas Bumi (Geothermal Working Area)

ENDNOTES

- 1 World Bank, "Geothermal Project Development Phases and Risks," Geothermal Handbook: Planning and Financing Power Generation https://www.esmap.org/sites/esmap.org/files/DocumentLibrary/FINAL_Geothermal%20Handbook_TR002-12_Reduced.pdf accessed on 25 July 2023
- 2 Rayful Mudassir, "Masih Mahal, Pengembangan Energi Panas Bumi Capai US\$4 Juta per MW," 26 September, 2021, <https://ekonomi.bisnis.com/read/20210926/44/1446933/masih-mahal-pengembangan-energi-panas-bumi-capai-us4-juta-per-mw> accessed on 25 July 2023.
- 3 Asian Development Bank and the World Bank, Unlocking Indonesia's Geothermal Potential, 2015. <https://www.adb.org/publications/unlocking-indonesias-geothermal-potential>
- 4 World Bank Group, Climate Change Action Plan, p. 22.
- 5 Sean Francis Kennedy, "The global energy transition and its contradictions: emerging geographies of energy and finance in Indonesia and California," UCLA Thesis and Dissertations <https://escholarship.org/uc/item/5tg2r3z2> pp. 27-28.
- 6 Julia Ravenscorft, "Impoverished countries spending up to 40% of government revenues on repaying debt, according to new research," Eurodad, 20 February 2020, https://www.eurodad.org/outofservice_press accessed on 25 September 2023.
- 7 World Bank, "Indonesia Geothermal Resource Risk Mitigation Project (GREM)," <https://projects.worldbank.org/en/projects-operations/project-detail/P166071> accessed on 25 July 2023
- 8 World Bank, "Geothermal Energy Upstream Development," <https://projects.worldbank.org/en/projects-operations/project-detail/P155047> accessed on 25 July 2023
- 9 Amnesty International Indonesia, "Hak Masyarakat Adat," Amnesty International Indonesia, 11 August 2022, <https://www.amnesty.id/hak-masyarakat-adat/#:~:text=Masyarakat%20Adat%20berhak%3A,pengetahuan%2C%20identitas%20budaya%20dan%20bahasa>. accessed on 10 August 2023.
- 10 <https://www.fws.gov/node/265252#:~:text=Air%20and%20water%20pollution%20are,for%20cooling%20or%20other%20purposes>.
- 11 Environmental Impact, http://web.mit.edu/nature/archive/student_projects/2009/bjorn627/TheGeothermalCity/Environmental.html accessed on 15 June 2023.
- 12 US Fish & Wildlife Service, "Geothermal Energy," <https://www.fws.gov/node/265252#:~:text=Air%20and%20water%20pollution%20are,for%20cooling%20or%20other%20purposes> accessed on 15 June 2023.
- 13 Loes Buijze et. al, "Induced seismicity in geothermal systems: Occurrences worldwide and implications for the Netherlands," European Geothermal Congress 2019, p. 8.
- 14 <https://www.scientificamerican.com/article/how-does-geothermal-drilling-trigge/>
- 15 The Ring of Fire is a region around much of the rim of the Pacific Ocean where many volcanic eruptions and earthquakes occur. The Ring of Fire is a horseshoe-shaped belt about 40,000 km long and up to about 500 km wide.
- 16 Ricardus Wawo, "Geothermal Masuk Dalam Ranperda Rencana Tata Ruang Wilayah di Lembata," Pos-Kupang, 5 March 2023 <https://kupang.tribunnews.com/2023/03/05/geothermal-masuk-dalam-ranperda-rencana-tata-ruang-wilayah-di-lembata> accessed on 15 June 2023.
- 17 Dominikus Karangora, "Obrolan Tengah Malam Bersama Andreas, Demokratisasi Transisi Energi Sebagai Solusi Krisis Iklim," Indonesiana, 25 May 2023, <https://www.indonesiana.id/read/164479/obrolan-tengah-malam-bersama-andreas-demokratisasi-transisi-energi-sebagai-solusi-krisis-iklim> accessed on 10 August 2023.



Kraijenhoffstraat 137A
1018 RG, Amsterdam
The Netherlands
www.re-course.org