

## Depoliticizing Decarbonization: Energy Plantations and Agrarian Inequality in Rural Indonesia

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### ABSTRACT

*The Indonesian government, in collaboration with Perhutani, has promoted energy plantations as part of decarbonization agenda, claiming they provide economic benefits to local communities. However, rather than facilitating more equal land access to farmers, these initiatives have reinforced Perhutani's control over land, exacerbating agrarian inequality in rural areas. This study critically examines how energy plantation in S Village, Grobogan Regency, Central Java, contribute to the re-concentration of land ownership and marginalization of rural communities. Based on qualitative research conducted in August 2023—including literature reviews, field observations, interviews, and focus group discussions—this study finds that the prioritization of carbon reduction has led to discursive depoliticization, which obscures the structural struggles of peasants for land rights. By framing decarbonization as a technical and market-driven solution, policymakers have weakened the political agency necessary for transformative change, allowing green investment to take precedence over agrarian justice. As a result, the current approach perpetuates inequality rather than addressing the root causes of rural dispossession. This paper argues that a just and equitable decarbonization agenda must integrate agrarian reform and empower local communities rather than serve the interests of corporate-driven climate policies.*

**Keywords:** decarbonization, energy plantations, agrarian inequality, discursive depoliticization

## INTRODUCTION

Global warming and planetary-scale crises demand an energy transition to reduce carbon emissions, or to decarbonise. The 2015 Paris Agreement agreed to limit emissions to 1.5 degrees. This agreement requires each country to submit their own emission reduction targets and actions (or so called Nationally Determined Contribution), which are updated every five years. The decarbonisation agenda includes the development of biomass energy to transition away from fossil fuels (Favero, Daigneault, & Sohngen, 2019). Before the Paris Agreement, especially after the 1997 Kyoto Protocol, awareness of the dangers of the climate crisis and the urgency of reducing greenhouse gas emissions have made biomass energy an alternative. Biomass have versatility, can be used in several fields (ie. heat, power, liquid biofuels and biobased products); and are also available from many sources (woody biomass, agricultural sources, and wastes) (Ladani and Vinterbäck, 2009, Carnia A, 2021).

Europe has become a major arena for campaigning biomass energy and/or bioenergy (Carnia A, 2021). The UK, funded by the Energy Institute, is mapping the country's land to develop energy gardens with willow trees as the commodity. In Spain, Magnon Green Energy has, since 2020, transformed Andalusian land into biomass fields. Mag Forestry Crop, a Canadian company, is developing biomass on 68,000 hectares in the Republic of Congo to supply Europe. Green Resources, from Norway, is opening energy farms in Uganda and Tanzania, to achieve the Scandinavian country's emissions-neutral target. However, the development of biomass energy has raised a global debate. The development of energy farms will take up large amounts of land and their combustion will cause high carbon emissions (Fritsche, Sims, & Monti, 2010). In a report published by the Global Forest Coalition, biomass expansion poses serious problems. Biomass requires far more land than other "alternative" energy sources. The resulting global market for biomass will in turn increase land-grabbing pressures on forests and soils, and water resources. In the context of the global north and global south relationship, the development of biomass and bioenergy only makes the rural South countries, including Indonesia, a sacrifice zone for extraction, thus perpetuating the inequality of agrarian tenure (Backhouse et al., 2021).

This paper is going to discuss how the decarbonization agenda actually perpetuates inequality in agrarian control in rural areas. The absence of economic-political changes behind the acceleration of decarbonization for the energy transition only repeats the old story of exploitation and extractivism (Daggett, 2020). This has happened in the development of biomass energy plantations in rural Java carried out by Perhutani (a state-owned enterprise managing state forest resources on the islands of Java and Madura). From the perspective of critical energy studies, bioenergy projects, including biomass, reconfigure and continue socio-ecological inequality in rural areas, as well as make rural areas an extractive area for biomass sources (Backhouse et al., 2021).

The development of biomass plants in Indonesia is a form of application of the government's commitment after ratifying the 2015 Paris Agreement, where the term decarbonization first appeared. Indonesia is then required to meet the NDC (National Determined Contribution) target, namely reducing greenhouse gas emissions by 31.89 to 43.2 percent by 2030 and 2060 or sooner. One agenda in the ratification of the agreement is decarbonization, which includes projects to stop the use of coal and to develop clean and low-carbon renewable energy. This can be achieved through the development of energy plantations in the form of planting biomass plants, such as Gliricidia sepium/gliricidia (*gamal*) and calliandra (*kaliandra*).

According to government and industry proponents the decarbonization agenda considers biomass energy as a carbon-neutral fuel. Emissions released during the combustion process can be compensated by the ability of biomass plants to absorb carbon during the cultivation process (EIA, 2024). The cultivation of the biomass plants is also considered to restore the ecosystem and improve carbon absorption in forest areas because it is able to rehabilitate degraded land (ENDC Indonesia, 2022). In addition, biomass is claimed to have the potential to develop the economic condition of the community and is promising as a commodity (Rahardyan, 2023) and can foster dynamic rural development (Sudaryanti et al., 2017). In this case, there is ecological optimism that Indonesia has a bioenergy potential of up to 57 GW which will place this country as the world's green energy center. The government considers the development of biomass energy as a sustainable program (APHI Pusat, 2020)

Amid the optimism over the decarbonization agenda, several studies show that biomass energy plantations will deforest an area of 625,000 to 2.1 million hectares (Adiguna, 2021; Muhajir, et al., 2022). This climate mitigation project also expands spatial rezoning by assuming that the agrarian

production system of rural peasants is economically ineffective and ecologically destructive so that the land needs to be reclassified (Borras & Franco, 2023) for productive purposes following the market trend of green capitalism. The impact is the seizure of agrarian resources, reduced diversity of job opportunities for peasants and women's groups, and injustice for the weakest groups in rural areas. (Stock calls the repertoire of the seizure as energy grabbing (Stock, 2022, 2023)). This is where the interests of the financial industry (finance capitalism) are more orchestrating the decarbonization program (Lang, 2024), where land and forests are reduced to carbon balance calculations.

Decarbonization or energy transition places carbon neutrality as the main focus for mitigation, thus ignoring the fundamental issues related to inequality in land tenure and land grabbing. In the perspective of political economy studies of energy, this tendency is referred to as "discursive depoliticization". This is a political disguise that frames the main problem as a non-issue. Discursive depoliticization operates by placing one issue as more important than another issue that is the primary concern of the grassroots communities at the site of energy industry infrastructure development and removing it from political decision-making discussions (Loloum, Abram, & Ortar, 2021)

In this paper, the main concern of the community at the ignored energy plantation development is inequality in land tenure and land grabbing. This paper is going to discuss the empirical case of energy plantation development in S Village, Grobogan Regency, Central Java, run by KPH Purwodadi (Forest Management Unit). In 1963, Perhutani designated Desa S as its territory under the management of KPH Purwodadi. In Perhutani management, the KPH is a district-level regional operator in managing forest areas. In the context of energy plantation development, KPH Purwodadi provided 2,330 hectares of land until 2023 to cultivate gliricidia and calliandra with a production target of 4,660 tonnes from the planting project in 2020 and 2021. In 2020, RPH Mrico RPH Mrico (Forest Management Resort) unilaterally planted gliricidia on land cultivated by residents. The land was land that had long been fought for to be redistributed through the agrarian reform agenda. The energy plantations in S Village have deepened the long history of land tenure conflicts between the community and Perhutani. Based on the background above, this paper is going to discuss the following research questions. First, how are the agrarian dynamics in S Village under the control of Perhutani? Second, how does the development of the energy plantation perpetuate agrarian inequality in S Village?

## RESEARCH METHODOLOGY

This paper examines the development of the energy plantation in Village S, Grobogan Regency, Central Java. S Village is located in the territory of RPH Mrico, KPH Purwodadi, one of seven KPHs in Central Java that are exploring the cultivation of energy plantation forests. This paper presents the results of the field studies using a qualitative research method that applied the critical agrarian perspective and political economy perspective towards energy in understanding the dynamics of energy plantation forests in rural areas. The data were collected through literature reviews and field studies in August 2023. The field data were collected using observation methods, limited group discussions, and in-depth interviews with key informants.

## FINDINGS AND DISCUSSION

### Dynamics of Agrarian Conflict in Village S

S Village, Grobogan Regency, Central Java, is located at an altitude of 147 meters above sea level in the North Kendeng karst mountain range and borders Pati Regency. This village has an area of 910 hectares with 106 hectares of rain-fed rice fields, 252 hectares of dry land, and 543 hectares of non-agricultural areas. The main livelihood of the population is located in the middle of a 2,900-hectare teak forest owned by Perhutani.

Perhutani's control over the forest in S Village has a long history back to the 1918 flu pandemic which killed almost all residents in three sub-villages. After the pandemic, the local residents left their settlements empty and abandoned the agricultural land in the three sub-villages due to trauma. However, they returned there in 1958 to farm and collect firewood but not to settle. Their rights to land in the former sub-villages were documented in Letter C, which they had kept since the Dutch colonial government. Throughout the 1950s, they planted *duwur* rice or dryland rice. In addition to planting corn and cassava, they also raised buffalo on the *pangonan* land (pastoral land controlled and managed by the village).

The conditions above changed along with the development of agrarian policies at the national level. The dynamics of Indonesian agrarian changes after independence led to the issuance of the 1960 UUPA (Basic Agrarian Law) to implement agrarian reform. However, the issuance of Government Regulation No. 17 of 1961 transformed the Forestry Service into the General Executive Body of the State-Owned Forestry Company or BPU Perhutani. It then canceled the proposal for forest areas as the objects of agrarian reform. These dynamics also affected the status of the three former sub-villages in S Village. The Local Government was going to redistribute 50 hectares of land in those three sub-villages, but the head of the village rejected the idea. In the same period, Perhutani designated those three sub-villages as its territory, and in 1963, Perhutani planted teak and mahogany. The struggle to obtain land rights was suppressed, especially because of the fear of being stigmatized as the members of the PKI (Communist Party of Indonesia) after the 1965 political genocide.

Perhutani implemented what was called as political forest in controlling its territory (Vanderveest & Peluso, 2006) (Peluso, 2006). Political forest worked with total control over territory, species, and labor and was performed by a violent apparatus, namely forestry police personnel. Under this total control, the residents of S Village experienced repression every time they entered the forest to collect either firewood or various food crops. Intensive planting of teak and mahogany gradually reduced the area of land cultivated by the residents until they completely lost access to land and agrarian resources in the forest. The land cultivated by the residents narrowed into small plots based on the rotation of logging and planting of teak and was no longer sufficient for daily livelihood. The livelihood of the residents shifted from independent peasants to *pesanggem*, peasants cultivating Perhutani land. This situation forced some residents to migrate to big cities, to urban areas.

**Table 1.** The Chronology of Agrarian Dynamics in S Village

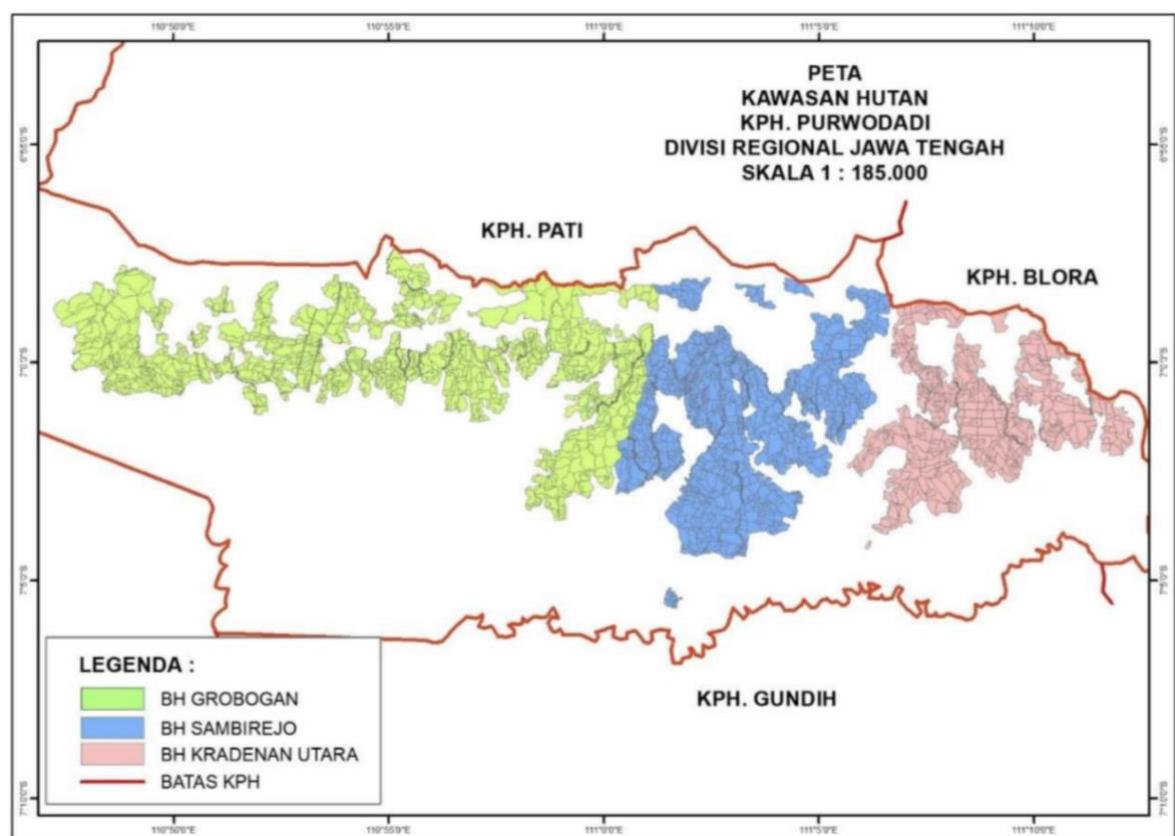
Year	Event
1918	A flu epidemic killed almost all the residents of three sub-villages in S Village. The three sub-villages were abandoned.
1958	The residents returned to farming in the agricultural land of the three former sub-villages.
1960	UUPA 1960
1961	The General Management Body of the State Forestry Company, or B.P.U Perhutani was established.
1963	The three former sub-villages were designated as Perhutani areas and planted with teak and mahogany trees.
1960-1965	In Sedayu, the Local Government offered to redistribute land in the three former sub-villages, but the idea was rejected by the head of the village because it was considered to have become part of the Perhutani area. Besides, after 1965, the struggle for land was stigmatized as the PKI movement.
1998-2002	There was a wave of occupation movements and land redistribution movements in the three former sub-villages.
2002	The land in the three former sub-villages was mapped, and the rights over the land was drawn. The results were 250 hectares of land with 911 SPPTs.
2006	Because of the internal conflict in the village between the supporters of the redistribution movement and those siding with Perhutani, the regent of Grobogan froze 911 SPPTs.
2018	Introduction to Social Forestry
2020	Energy plantations were developed in the former sub-villages. A total of 7,000 gliricidia seedlings were planted by Linduk BKPH without notice.
2022	The peasants, who owned land in the former sub-villages, resisted the energy plantation, uprooted gamal trees and replaced them with bananas, cassava and corn. Perhutani criminalized them for this resistance.

The wave of occupation movements in 1998-2002 also spread to S Village. At the same time, an initiative has emerged to legalize the status of the land in those three former sub-villages since 1998. In 2002, some residents cut down teak trees and turned them into dry land. The land seized by the residents was the land of the former sub-villages. At that time, the Head of Sedayu Village traced the evidence of land ownership rights. He found a copy of the SPPT (Tax Due Notification Letter), proof of tax payment of land for the sub-villages until 1958, and a map of S Village created in 1918. The peak of this movement was that in 2002, the residents and the head of the village submitted a proposal for the redistribution of the land in the former sub-villages. The results of the residents' consolidation reached the stage of measuring the land area. The total land area of those former sub-villages with the grazing

area was 250 hectares. The village government facilitated the redistribution of the land by drawing lots and issued 911 SPPTs. Each *pesanggem* (people who are willing to cultivate plants for Perhutani) household received 10 × 60 meters of land.

This struggle failed. There was an internal conflict at the village level between the supporters of the redistribution and the residents who sided with Perhutani. The latter bribed the Regent of Grobogan to cancel the redistribution. As a result, 911 SPPTs were frozen. In addition, there was also the release of land in the former sub-villages that had been drawn for the redistribution. This kind of agrarian dynamics reoccurred when the issue of Social Forestry was introduced in the village. Many residents were deceived by Social Forestry brokers who charged administrative fees for permits.

Amidst the agrarian dynamics, through the political forest regime, Perhutani controls the forest of S Village to this day. The sign of “Forest Area” and prohibitions on activities have been plugged in the dry land area of the villagers. Every 2-3 times a year, Perhutani collects a fee of IDR 200-300 thousand from peasants with the threat that if they do not pay, their cultivation rights will be revoked. In addition, Perhutani continues to use coercive measures by deploying Forestry Police Personnel or Territorial Police to limit residents' access to the forest. Along the way, when the historical agrarian dynamics had not been resolved and the redistribution had not been realized, in 2020, BKPH (Forest Management Unit) Linduk planted 7,000 gliricidia seedlings in the dry land in those former sub-villages. The development of energy plantations on the land in the three former sub-villages has deepened the agrarian conflict between peasants and Perhutani.



**Figure 1.** The Map of KPH Purwodadi (Source: 2024 Public Summary of Purwodadi KPH)

In 2022, the peasants, who owned land in the former sub-villages, resisted the energy plantation, uprooted gliricidia trees and replaced them with bananas, cassava and corn. Perhutani criminalised them for this resistance. The peasants argued the energy plantation locations are their land and documented in SPPT (i.e. the land tax certificate), that it was not “empty land” or “less productive” because it has been tilled and has become their source of livelihood. They are also uninformed about the energy plantation, and moreover gliricidia is livestock feed so they uprooted it, more so when it disturbs agriculture. They never change their demand for land redistribution in the former sub-villages.

## Reconcentration of Land Tenure Through Energy Plantations

As discussed above, in the name of the decarbonization agenda in the energy sector, Indonesia is committed to implementing coal co-firing with 5 percent biomass such as wood pellets in PLTUs. PLN (State-owned Electric Utility Company) is targeting 52 PLTUs to implement this co-firing practice. To realize this, PT. PLN signed a PKS (Cooperation Agreement) with PT. Perhutani to provide biomass supplies in the PLTU co-firing program in Java (perhutani.co.id, 2022). Perhutani has determined the priority area for biomass energy plantations to reach 229,286 hectares in 27 KPHs. Perhutani in an agreement with PLN will develop energy crops on 70 thousand hectares of land (Rusolono, Asycarya, & Lindboe, 2018). Perhutani of Central Java Regional Division has allocated seven KPH areas, namely KPH Blora, KPH Cepu, KPH Mantingan, KPH Pati, KPH Purwodadi, KPH Semarang, and KPH Telawa with a land area of 18,605.2 hectares. Pristiandaru (2024) reported that KPH Purwodadi provided 2,330 hectares of land until 2023 to cultivate gliricidia and calliandra with a production target of 4,660 tonnes from the planting project in 2020 and 2021. One of the KPH Purwodadi areas is S Village, Grobogan Regency.

In 2020, Perhutani opened an energy plantation forest in S Village through the BKPH Linduk. The location for planting gliricidia was the residents' dry land in the former sub-villages. The land was designated as an unproductive area and therefore was mobilized to develop an energy plantation. This planting took place the next day after the peasants cleared the land to plant corn. Although initially the peasants in S Village received an offer to do the planting, they refused to become planting laborers because of the uncertain payment system. Then Perhutani employed planting laborers from outside the village. In this case, the designation as unproductive land was Perhutani's strategy to claim the villager's land, as well as to avoid using the company's land with productive teak plantations.

The presence of the energy plantation has complicated the future of the land redistribution in the former sub-villages. Besides, of course, eliminating their source of livelihood in the agricultural sector, the 2x1 meter gliricidia planting distance did not provide space for peasants to cultivate food crops. In such a case, in 2022, peasants in Village S uprooted the gliricidia plants and planted corn, cassava, and bananas. As a consequence, they were summoned to the village office, taken to the Grobogan police station, and detained for two days. They argued that this action was taken because the gliricidia was planted in their land, and it could be proven by the SPPT.

The old story reoccurred in the case of the development of this energy plantation. The land grabbing over the cultivated land, which means closing access to sources of livelihood, was a story of land grabbing throughout the history of Perhutani's control recorded in the memory of peasants in S Village. The deployment of coercion in the form of intimidation, arrests, and security patrols was also an unhealed traumatic story that happened again. Moreover, the planting of gliricidia was not the first incident. To fence the teak forest from the livestock of the residents and to prevent people from entering the forest, Perhutani cultivated gliricidia as a plant on the edge of the area in the 1980s. Gliricidia already had a political forest function in that decade, namely an instrument to guard the territory and close access for peasants in S Village to agrarian resources in the forest. When gliricidia was planted as a biomass energy commodity, this political function gained additional economic value. Gliricidia, which was originally an edge plant (buffer zone), was transformed into a main plant in the forestry industry for the purpose of decarbonizing in the energy sector (see Table 2). Not only were peasants unable to access the cultivated land because of the political function of this plant, but they were also not allowed to use the gliricidia as animal feed or firewood because it had economic value for Perhutani.

**Table 2.** The transformation of Gliricidia in Sedayu under political forest regime

Period		Similarities	Differences
1980s	Gliricidia was cultivated as an edge plant or buffer zone to fence Perhutani's main commodity crop (teak) and to rehabilitate land.	Gliricidia had a political function as an instrument to guard the territory, thus limiting peasants' access to the forest and Perhutani's main commodity crop.	Gliricidia had no economic value, so peasants could still use Gliricidia as animal feed and firewood.
2020	Gliricidia was developed into a biomass energy commodity crop for wood pellet production.	Gliricidia had a political function as an instrument to guard territory, thus limiting peasants' access to cultivated land.	Gliricidia had economic value and became Perhutani's main commodity crop, so peasants could not use Gliricidia for animal feed and firewood.

From Table 2, it can be seen that the cultivation of gliricidia, for both buffer zone plants and energy plantations, resulted in the closure of access to agrarian and livelihood sources in the forest area. Driven by the market demand, the biomass energy commodity in this decarbonization era has doubled the political function of gliricidia plants, namely (1) closing access to forest areas and cultivated land; and (2) closing access to the plant itself because of its value as an energy industry commodity. The transformation in the function of gliricidia from edge plants (buffer zone) to energy crops has happened because it (and several other types of plants such as calliandra which are also widely developed for wood pellet biomass) has many functions (multiples), one of which is that it can be processed into other products (Borras et al., 2016).

The transformation could also be realized because Perhutani as a producer or company could flexibly cultivate any commodity according to market trends. The flexibility of Perhutani came from their dominant control, especially with the application of three political-forest mechanisms in the form of territorial, species, and labor control (Vandergeest & Peluso, 2006; Peluso 2006). This dominance provided the flexibility to claim land, test plant types, and send laborers for the development of energy plantations. With this political forestry dominance, Perhutani re-concentrated land tenure in those former three sub-villages in S Village based on the claim that it was “empty land” or “less productive” that had to be rehabilitated and developed into an energy plantation, perpetuated agrarian inequality in S Village by leaving the peasants without their rights to the land in the former sub-villages, and excluded them for livestock feed and firewood by totally controlling gamal as a biomass crop commodity.

### **Discursive Depoliticization in the Decarbonization Agenda**

The phenomena of land grabbing, access closures, and re-concentration of land that should be redistributed do not appear in the mainstream narrative about the development of biomass energy plantations. The dominant voice campaigns for the positive contribution of biomass to reducing carbon emissions, increasing the economy, and restoring land. For example, PLN places co-firing with biomass to achieve a mix target of 23 percent by 2025 which is calculated to reduce emissions of 11 million tonnes of CO<sub>2</sub> and greenhouse gases. Bagaskara (2024) also states that the use of biomass will reduce emissions by 40 percent from 103 PLTU units in the PLN network in 2040 and 23 percent of emissions from 80 Captive PLTU units in 2030.

The narrative that biomass projects will improve the economy is also widely circulated. PLN states that this project is “part of the people’s electricity ecosystem and land preservation program that involves community participation in the provision of biomass, thus increasing local economic growth” (PLN, 2023). The industrial sector also narrates the same thing. The use of biomass makes it easier for the industrial sector to obtain investment and market products because it adopts renewable energy. For example, PT. Kahatex Majalaya, a textile industry in Bandung, has used palm shells and rooftop solar panels (PLTS) so that it received a Renewable Energy Certificate (REC) from PLN. The transition to renewable energy is to meet the “green” requirements in order to compete in the market and gain incentives from investors, or in other words, to gain bigger investments (bandungbergerak.id, February 7, 2024). The transition to energy claimed to be environmentally friendly such as biomass extends the marketing of their products.

The push to accelerate the transition to renewable energy or low-carbon technology is related to the climate crisis which is considered to threaten environmental sustainability and disrupt the sustainability of the financial industry (Bryant & Webber, 2024; De Haas & Popov, 2019) with increasing investment risks (Kirjanas, 2015). This became the main discussion at the 2015 Paris Agreement conference (De Haas & Popov, 2019; Lang, 2024), regulating the acceleration and facilitation of flowing investment into the green sector in the name of decarbonization. That is why there are various demands to implement flexible investment schemes, provide incentive support, and provide regulatory support that makes it easier for the industrial sector to adopt renewable energy and low-carbon technology (Sidik, 2023; Rajul, 2024).

This kind of situation has given birth to what is called the “renewable energy investment frontier” (Schneider, 2023) that hunts for rural land. Financial investment for the decarbonization agenda targets the large-scale land, especially in southern countries. When such investment seizes rural land, and this is the reality, decarbonization ultimately devalues agrarian activities and sources of livelihood and even paralyzes people’s choices for their future (Borras & Franco, 2012; Schneider, 2023). In S Village, Grobogan Regency, the decarbonization agenda through the development of biomass energy plantations

has created a phenomenon of land grabbing over peasants' cultivated land. There should have been an agrarian reform that is concentrated back to Perhutani.

This is not a single event but resonates with phenomena in various places: that energy plantations led to land grabbing and agrarian inequality in rural areas, yet, of course, with patterns of appropriation that may differ from each other or have similarities. In West Kalimantan, the potential land for energy plantations has reached 576,000 hectares and invited the presence of giant forestry companies with a track record of large-scale deforestation. The development of energy plantations in West Kalimantan has ignored agrarian conflicts in the forestry sector (Pahlevi, 2024). In Sawahlunto, Indonesia, PT. Bukit Asam through its CSR has distributed financial assistance to farmer groups to develop calliandra plants to be processed into wood pellets. This investment legitimizes PT. Bukit Asam to maintain their claim to control land that should be rehabilitated and returned to the state. Its resonance is also not limited to the development of energy plantations. In India, the construction of solar panel power plants has actually triggered land grabbing in a very racist manner based on caste and gender (Stock, 2023). The development project has caused an explosion in the population of landless peasants, damaged agricultural life, resulted in unequal provision of electricity and water resources, dislocated firewood and grazing access, and reduced employment opportunities. This energy grabbing phenomenon is to meet the decarbonization target of achieving 500 gigawatts of non-fossil energy capacity by 2030 as mandated by COP26 (Conference of the Parties 26) (Stock, 2022, 2023).

**Table 3.** List of policy support, incentives, and permit facilitation to develop biomass cofiring

No.	Stakeholder	Support needed	Potential benefits of the support
1.	The Ministry of Energy and Mineral Resources	<ul style="list-style-type: none"> <li>Co-firing policy</li> <li>Pricing of biomass fuel based on economic calculations</li> <li>DMO scheme on Biomass fuel</li> </ul>	<ul style="list-style-type: none"> <li>Supporting the increase in the EBT (New and Renewable Energy) mix and emission reduction at the most optimal cost through the utilization of existing assets</li> <li>Ensuring the availability of biomass fuel for domestic use</li> </ul>
2.	The Ministry of Finance	<ul style="list-style-type: none"> <li>Incentives/compensation/subsidies</li> <li>0% VAT for biomass fuel sources included as strategic taxable goods</li> <li>Consideration of early discontinuation of fossil fuel power plants (PLTU)</li> </ul>	<ul style="list-style-type: none"> <li>Stimulating the biomass supply chain from producers to co-firing implementers for the economic benefits of the project</li> <li>Ensuring the stability of primary energy costs for biomass power plants</li> <li>Green energy without building new power plants</li> </ul>
3.	The Ministry of Public Works and Housing	<ul style="list-style-type: none"> <li>Funding support for the development of facilities and infrastructure in waste processing into energy for industry and biomass cofiring</li> </ul>	<ul style="list-style-type: none"> <li>Optimizing unprocessed waste piles</li> <li>No additional landfill land required</li> </ul>
4.	The Ministry of State-Owned Enterprises (BUMN)	<ul style="list-style-type: none"> <li>The synergy of State-Owned Enterprises (BUMN) in providing biomass</li> </ul>	<ul style="list-style-type: none"> <li>Increasing readiness for biomass supply through synergies with related BUMNs</li> </ul>
5.	The Ministry of Environment and Forestry	<ul style="list-style-type: none"> <li>Social forest utilization permit</li> <li>Reduction of PSDH (Forest Resources Province)</li> <li>Concessions of Work Area for the Utilization of Forest Products (Synergy with HTI (Industrial forest/Industrial tree plantations) and social forestry permit owners)</li> </ul>	<ul style="list-style-type: none"> <li>Providing stimulus to energy crop biomass producers for the economic benefits of the project</li> <li>Development of Eco Forestry Ecosystem (Based on Industrial Forests; potential land for biomass sources of 3.3 million Hectares - equivalent to 16 million tonnes/year) for PLTBm (Biomass Power Plant)/PLTU supply</li> </ul>
6.	Provincial Government/Regency Government/the Special Region Government	<ul style="list-style-type: none"> <li>Concessions/Permits of Green Economy Work Area on local government land/sultan land/people's land</li> </ul>	<ul style="list-style-type: none"> <li>Development of Green Economy Ecosystem based on Community Involvement (strategy: formation of modelling for upscaling. "From Yogyakarta to Indonesia")</li> <li>Added value of energy crops for animal feed with intercropping</li> </ul>

The series of phenomena above present a contradiction that the dream of reducing carbon emissions is haunted by injustice for the lowest class in rural areas. The fundamental question is: Why is this kind of phenomena ignored and not discussed? In the study of political economy of energy, this is a disregard considered as discursive depoliticization. In other words, this is political disguising or suppressing by denying the most fundamental issues that concern grassroots communities and not discussing the issues at all with issue framing (Flinders & Wood, 2014; Kuzemko, 2014, 2016).

This discursive depoliticization certainly has consequences. First, this depoliticization dampens the voice from the rural communities and strengthens the top-down tendency of the decarbonization agenda. In this case study research, the main concern of peasants in S Village is the redistribution of land in the three former sub-villages. The development of energy plantations on the land in those sub-villages has denied the historical struggle of the peasants and only focused on how to achieve the target of reducing carbon emissions as mandated by the decarbonization agenda in the global agreement. Focusing only on the carbon issue does not provide space for aspirations from the grassroots level that demands for the implementation of agrarian reform. The claim that this agenda involves the community in biomass planting is nothing more than a framed participation, or the exploitation of the community as plantation laborers.

Second, this depoliticization will not lead to transformative policies and ideas, but rather blind imitation of international climate agreements. It, at the same time, identifies the existing, lacking, or necessary policy instruments for the domestic energy transition, without any critical attitude. This is expressed in the list of support needed by PLN to develop biomass co-firing:

From Table 3, it can be seen that the PLN expects policies that facilitate permits to access land, market and price regulations, and incentives in the form of subsidies for industry players who develop biomass co-firing. These three demands, especially the first one, are the true face of the “renewable energy investment frontier” which is greedy for land and has the potential to continue agrarian inequality. In turn, discursive depoliticization paralyzes the political capacity or political imagination to realize the agenda of transformation in the production, distribution, and consumption of energy. The political capacity or political imagination here is a political capacity does not surrender to corporate power and market forces and does not repeat land grabbing and the destruction of rural livelihood. On the contrary, what happens in the decarbonization agenda via energy plantations is the weakening of political capacity under the pressure of the market and international climate agreements, which only look for the role of the state to facilitate the flow of investment to the green or low-carbon sector.

## CONCLUSION

This paper has presented that before the energy plantations were developed in S Village, there was already a long history of agrarian dynamics at the planting location. In this history Perhutani unilaterally controlled the land of the former sub-villages abandoned by the residents of S Village due to an epidemic. The struggle to redistribute land in those sub-villages took place in the early years of the Post-Reformation era, but ended in failure. By ignoring this history, in 2020, Perhutani planted gliricidia on the land in the former sub-villages. Perhutani actually deepened and continued the agrarian inequality. Moreover, the development of biomass plants became a means of re-concentrating control over peasants' cultivated land into Perhutani's hands and sparked latent conflicts that had been going on for a long time between the two parties.

The neglect of the agrarian issues above shows a big picture of the practice of discursive depoliticization in the decarbonization agenda, especially in the biomass energy plantation development program. State actor in charge of the energy and forestry sectors (i.e. PLN, Perhutani, KLHK, etc.) focus only on achieving decarbonization target's (as directed in the Paris Agreement and NDCs), which are wrapped in technical term that is far removed from the language of ordinary people, whose land is dispossessed to develop energy plantations. The focus on decarbonization has driven these actors to do everything possible to achieve global emission reduction targets while ignoring rural agrarian dynamics.

So, this decarbonization agenda actually deepens and continues socio-ecological inequality in rural areas; makes rural areas an extractive area for biomass resources; and prolongs the injustice for lower-class groups in rural areas. Discursive depoliticization contributes to the neglect of this fundamental issue so that the policy and implementation of biomass energy plantations tend to keep hunting for land for corporate interests. Karen Rignall in an interview with the Commodity Frontier Journal illustrates this reality by saying, “First of all, if we transition only in carbon offsets and reinforce the same system

of inequality, we do not decarbonize anything, apart from the ethical and political dimensions involved” (Cottyn & Yeni, 2023).

To avoid repeating systemic inequality, the decarbonization and energy transition agenda must prioritize grassroots political demands. This study highlights land redistribution in forest areas through agrarian reform as essential. A just energy transition cannot occur amid agrarian inequalities. The next challenge is to ensure decarbonization is community-driven—rooted in ecological urgency and public consciousness rather than market forces. This way, decarbonization serves a transformative role, reshaping energy production, distribution, and consumption for the common.

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## REFERENCES

Adiguna, P (2021, February 8). *Indonesia's biomass cofiring bet: Beware of implementation risks*. Institute for Energy Economics and Financial Analysis.

APHI Pusat (2020, October 19). *Hutan Tanaman Energi, Masa Depan Energi Biomassa Indonesia*. rimbawan.com: <https://www.ribawan.com/berita/hutan-tanaman-energi-masa-depan-energi-biomassa-indonesia-ok/>

Backhouse, M., Lehmann, R., Lorenzen, K., Lühmann, M., Puder, J., Rodríguez, F., & Tittor, A. (Eds.). (2021). *Bioeconomy and Global Inequalities: Socio-Ecological Perspectives on Biomass Sourcing and Production*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-68944-5>

Bagaskara, A (2024, July 10). *6 cara melepas jerat batu bara Indonesia secara bertahap*. The Conversation: <https://theconversation.com/6-cara-melepas-jerat-batu-bara-indonesia-sekara-bertahap-234283>

Borras, S. M., & Franco, J. C (2012). Global Land Grabbing and Trajectories of Agrarian Change: A Preliminary Analysis. *Journal of Agrarian Change*, 12(1), 34–59. <https://doi.org/10.1111/j.1471-0366.2011.00339.x>

Borras, S. M., & Franco, J. C (2023). *Scholar-Activism and Land Struggles*. Practical Action Publishing Ltd.

Borras, S. M., et. al. (2016). The rise of flex crops and commodities: Implications for research. *The Journal of Peasant Studies*, 43(1), 93–115. <https://doi.org/10.1080/03066150.2015.1036417>

Bryant, G., & Webber, S (2024). *Climate finance: Taking a position on climate futures*. Agenda Publishing.

Camia, A., Giuntoli, J., Jonsson, R., Robert, N., Cazzaniga, N. E., Jasinevičius, G., ... & Marelli, L. (2021). The use of woody biomass for energy production in the EU. Publications Office of the European Union.

Cottyn, H., & Yeni, S (2023). These are Not Forgotten Places! A Conversation with Karen Rignall about Rural Conflict, Renewable Energy, and Building Deep Relationships in Southeastern Morocco. *Commodity Frontiers*, 6, 32-37.

Daggett, C (2020). Energy and domination: Contesting the fossil myth of fuel expansion. *Environmental Politics*, 30(4), 644–662. <https://doi.org/10.1080/09644016.2020.1807204>

De Haas, R., & Popov, A. A (2019). Finance and Carbon Emissions. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3459987>

Favero, A., Daigneault, A., & Sohngen, B. (2019). Forests: Carbon sequestration, biomass energy, or both? *Science Advances*, 5(4).

Flinders, M., & Wood, M (2014). Depoliticisation, governance and the state. *Policy & Politics*, 42(2), 135–149. <https://doi.org/10.1332/030557312X655873>

Fritsche, U. R., Sims, R. E. H., & Monti, A. (2010). Direct and indirect land-use competition issues for energy crops and their sustainable production—An overview. *Biofuels, Bioproducts and Biorefining*.

Kirjanas, P (2015). *Climate Change as An Investment Risk: Asset Owners Perspective*.

Kuzemko, C (2014). Politicising UK energy: What ‘speaking energy security’ can do. *Policy & Politics*, 42(2), 259–274. <https://doi.org/10.1332/030557312X655990>

Kuzemko, C (2016). Energy Depoliticisation in the UK: Destroying Political Capacity. *The British Journal of Politics and International Relations*, 18(1), 107–124. <https://doi.org/10.1111/1467-856X.12068>

Ladanai and Vinterbäck, (2010). “Global Potential of Sustainable Biomass for Energy”, SLU, Institutionen för energi och teknik Swedish University of Agricultural Sciences Department of Energy and Technology.

Lang, C (2024). “*Article 6 is not about saving the planet. The COPs are not about climate change. This is about profit.*” Interview with Dr. Tamra Gilbertson of Indigenous Environmental Network.

Loloum, T., Abram, S., & Ortar, N (2021). Introduction: Politicizing Energy Anthropology. In T. Loloum, T., Abram, S., & Ortar, N. (Eds.), *Ethnographies of Power: A Political Anthropology of Energy*. Oxford: Berghahn Books.

Muhajir, M., et. al (2022). *Ancaman Deforestasi Tanaman Energi*. Jakarta: Trend Asia; Ranang Strategic.

Pahlevi, A (2024, September 6). *Energi Biomassa Ancam Hutan Kalimantan Barat*. mongabay.co.id: <https://www.mongabay.co.id/2024/09/06/energi-biomassa-ancam-hutan-kalimantan-barat/>

Peluso, N (2006). *Hutan kaya, rakyat melarat: Penggunaan sumber daya dan perlawanan di Jawa*. Jakarta: Konphalindo.

Peluso, N. L (2011). Emergent forest and private land regimes in Java. *Journal of Peasant Studies*, 38(4), 811–836. <https://doi.org/10.1080/03066150.2011.608285>

PLN (2023, Februari 25). *Peluang & Tantangan Pengadaan Biomassa sebagai Energi Primer Pembangkit Listrik yang Berkelanjutan*. Jakarta.

Pristiandaru, D. L (2024, September 20). *Tanaman Energi di Jateng: Strategi Transisi atau Sekadar Bisnis Biasa?* lestari.kompas.com/: <https://lestari.kompas.com/read/2024/09/>

Rahardyan, A (2023, 30 December). *Potensi Biomassa Jadi Komoditas Baru Ekonomi Kerakyatan. Bisnis*: <https://ekonomi.bisnis.com/read/20231230/44/1728296/potensi-biomassa-jadi-komoditas-baru-ekonomi-kerakyatan>

Rajul, A (2024, February 7). *Menguji Klaim Kahatex Majalaya Soal Penggunaan Energi Ramah Lingkungan*. bandungbergerak.id: <https://bandungbergerak.id/article/detail/159505/menguji-klaim-kahatex-majalaya-soal-penggunaan-energi-ramah-lingkungan>

Rusolono, T., Asycarya, D., & Lindboe, H. H (2018). *Biomass for energy prefeasibility study*. Copenhagen: Ea Energy Analyses.

Sidik, A. B (2023, October 31). *Listrik Akan Mendominasi Bentuk Energi Masa Depan Dunia*. kompas.id: <https://www.kompas.id/baca/riset/2023/10/31/listrik-akan-mendominasi-bentuk-energi-masa-depan>

Schneider, Mindi Leigh. (2023). “*Renewable*” *Energy Frontiers: Editorial Introduction*. <https://doi.org/10.26300/6F68-ZY94>

Stock, R (2022). *Surya-shakti-sharir*: Embodying India’s solar energy transition. *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 77(3), 197–205. <https://doi.org/10.1080/00291951.2022.2136584>

Stock, R (2023). Power for the Plantationocene: Solar parks as the colonial form of an energy plantation. *The Journal of Peasant Studies*, 50(1), 162–184. <https://doi.org/10.1080/03066150.2022.2120812>

Sudaryanti, D. et. al (2017). *Bioenergi Dan Transformasi Sosial Ekonomi Pedesaan (Studi Kasus: Desa Talau Dan Desa Tanjung Beringin, Kabupaten Pelalawan, Provinsi Riau)*.

Vandergeest, P., & Peluso, N. L (2006). Empires of Forestry: Professional Forestry and State Power in Southeast Asia, Part 2. *Environment and History*.