
[‘Energy transition’ and forest destruction in Southeast Asia](#)

‘Energy’ is much talked about today, but both the word and concept are relatively new inventions. The concept of ‘energy’ as we know it today was created just a few hundred years ago. Entrepreneurs realized that they could use the fossil fuels coal, oil and gas to increase the productivity of their machines, and thus better control their workforce and accumulate capital. The wealth of the richest people on earth is built on the massive use of fossil fuels. This wealth has been created at the expense of social and ecological destruction. (1)

‘Energy transition’ does not question this understanding of ‘energy’. It does not question the structural exploitation of territories and people that is inseparable from this concept of ‘energy’. The social and ecological destruction that forest-dependent communities face as a result of energy-related projects continues very much the same in times of ‘energy transition’ – which has, above all, created more opportunities for capital accumulation for the beneficiaries of fossil fuelled capitalism. Nevertheless, it is sold by its promoters as the way to a cleaner future. Investors who got rich with fossil fuels now also invest their money into profitable business opportunities of the new wave of energy projects. This also helps them ‘clean’ up their image (see the ‘box’ about Adaro, below).

Asia has become the most industry- and energy-intensive region worldwide. A new wave of energy-related projects connected with the ‘energy transition’ are causing massive deforestation, in particular in Southeast Asia. Without pretending to present a complete picture, this article gives a glimpse of how energy-related projects impact on and threaten forests and forest-dependent peoples in Southeast Asia.

Coal extraction

Indonesia is the main coal extracting country in Southeast Asia, and coal is the main source of electricity generation in the region. Since 2020, Indonesia’s coal production has annually increased and in 2024, reached a new production record of 831 million metric tons. (2) This alone suggests that the supposed ‘energy transition’ is a lie.

Main export destinations are China and India. From there, coal is embedded in manufactured goods supplying the industrialized world, just like other export-oriented energy projects mentioned below.

Coal mining is also a key driver of deforestation. The Indonesian anti-mining network JATAM reported in 2025 that in the province East Kalimantan mining – coal mining in particular - was the main driver of deforestation, responsible for 4.2 million hectares of forest destruction. (3) Provincial regulations oblige mining companies to restore mining pits; however, most companies fail to fulfil their legal obligation to reforest. Media reports suggest that about 1,700 mining pits have been abandoned before the required restoration was carried out. (4)

While Indonesia is the main coal producer in Southeast Asia, China and India are the main coal producers in the world. According to official data, in Indian states of Chhattisgarh, Jharkhand and Madhya Pradesh, forest-rich districts with coal mining have lost an 51,900 hectares more than

districts without coal mines. (5)

Hydropower dams

Along the 5,000 km long Mekong River and tributaries, three decades of hydropower dam construction has destroyed large forest areas. State and private interests, in particular from China and Thailand, use ‘energy transition’ to push for and justify the building of more dams. Activists are warning that a ‘final battle’ to save the Mekong River is underway, with the latest announcements for yet more mega-dams risking to devastate the Mekong River. (6)

In Indonesia, the government plans to use hydropower to increase the share of ‘renewable energy’ in its energy matrix. Two priority hydro dam projects, located in North Kalimantan province, threaten a forest region that conservationist NGOs like WWF call ‘The Heart of Borneo’: the 1.3 GW Mentarang Induk Hydropower plant is already under construction while the 9 GW Kayan Hydroelectric Power plant is still in the planning phase. (7)

The case of Adaro: ‘Green transition’, ‘greenwashing’ and deforestation

The Adaro group is one of Indonesia’s major coal mining companies. However, in times of ‘energy transition’, Adaro presents itself as a ‘green’ company, even if in reality it is increasing its own deforestation track record. Adaro’s CEO and co-owner, Garibaldi “Boy” Thohir, leads a consortium that is building the Green Industrial Park KIH in North Kalimantan. Indonesia’s ex-president Jokowi called it “the largest green industrial area in the world”, in reference to the solar panels and electric vehicle batteries to be produced there. This ignores the destruction of 30,000 hectares of lands including forests to set up the industrial Park. (8) Adaro also has stakes in one of KIH’s industries: PT Kalimantan Aluminium Industry. The company plans to process bauxite from West Kalimantan, where bauxite mining is a driver of deforestation. (9) To ensure the massive electricity demand of aluminium smelting, Adaro became 50 percent co-owner of the Mentarang hydropower dam project, while simultaneously building a coal-fired power plant to meet the smelter’s energy needs. (10)

Nickel mining

Nickel is crucial to the ‘energy transition’. It is a key component in lithium-ion batteries used to power electric vehicles and so-called renewable energy storage units. In 2023, thousands of villagers on Halmahera Island, in North Maluku province, Indonesia, collided with security forces when they occupied the installations of the company PT IWIP (Weda Bay Industrial Park), the epicentre of Indonesia’s nickel industry. Villagers protested against the destruction of the Boki Marure Karst area, a forested area the residents have been guarding for generations. (11)

Indonesia has about half of the world’s nickel reserves. Among the many affected communities are the O’Hongana Manyawa, one of the remaining nomadic Peoples in Indonesia. O’Hongana Manyawa means ‘People of the forest’. One O’Hongana Manyawa comments that: “if it continues like this, the forests in Halmahera will be destroyed. The trees will be cut down; the animals will be driven out and die because their homes have been completely cleared. Then where will we live?” (12) According to a study, the Indonesian nickel industry destroyed at least 75,000 hectares of forests until 2024. (13)

The Philippines is the other major nickel producer in SE Asia. The Alliance to Stop Mining (Alyansa Tigil Mina) denounces how Palawan Island, with its extensive forest areas, including mangroves, has

become one of the main nickel mining areas, ignoring laws that protect forests and ignoring Indigenous communities saying “No” to mining. (14) According to one community member: “It’s our culture that has been affected, because the environment is being destroyed. It is our belief that there are spirits in the mountains and the spirits are angry because of the destruction of their homes, the trees, the forest.” (15)

In Santa Cruz, in Zambales province, four large-scale nickel companies are active. One community member said: “Before nickel mining, the mountains were filled with trees. We earned a living purely through farming vegetables and root crops. Life was good back then.” Another community member adds: “The companies really dig up the mountain and the trees that protect us from flooding. Now when it rains, it floods.” (16)

The Caraga Region is the epicentre of nickel mining in the Philippines. A fisherwoman says: “Before, if there was a storm, the ocean water wouldn’t penetrate the river system, and the winds would be stopped by the trees. The forest cover was very thick, which protected us from storms. Now, big waves come in, and the flooding is more severe. Water runs down from the mines and brings mud, while stronger winds hit the village.” One fisherman adds: “The mud poisons the mangroves, and some of the mangroves have died. They try to replant them, but they won’t grow.” (17)

‘Rare earth’ mineral mining

‘Rare earth’ mineral mining is about the extraction of 17 metals. Contrary to what the name suggests, these deposits are not actually rare, but scattered which in turn makes their extraction expensive. As components of wind turbines and electric vehicles, these elements are crucial for the ‘energy transition’. Myanmar is the main country in SE Asia in terms of ‘rare earth’ mineral mining, followed by Thailand, Vietnam and Malaysia, with Vietnam having the biggest known reserves in the region. (18)

In Kachin state in northern Myanmar, the boom in ‘rare earth’ mineral mining already caused severe impacts (see article in this bulletin), including more than 30 thousand hectares of deforestation in the period 2018-2024. According to a spokesperson: “There has [also] been a noticeable rise in deforestation since around 2018, with sharp increases particularly around mining zones due to road construction, land clearing for extraction activities, and widespread tree cutting for fuelwood or to dry the rare earth sludge.” (19)

Bioenergy

In Indonesia, organisations warned in 2021 that 10 million hectares of forests were at risk due to the demand for woody biomass energy from Japan and South Korea as well as Indonesia. All three countries, were planning to increase the use of wood pellets to co-fire coal power plants. (20) A report from 2024 on deforestation for woody biomass and the setting up of ‘energy’ tree plantations in Kalimantan, Sulawesi and Papua points to a staggering increase in wood biomass export volumes. (21)

Industrial oil palm plantations produce Indonesia’s main commodity, palm oil. It has been responsible for millions of hectares of deforestation. The latest pretext for expansion has become the domestic use of biodiesel. A 66 per cent increase in deforestation in 2025, if compared with 2024, might be related to the government’s policy to expand biodiesel use, blending it 50 per cent with conventional diesel oil. West Papua is the new frontier of oil palm expansion in Indonesia. (22)

Papua: The new deforestation frontier

As a result of colonization, the island of Papua is divided in a western part controlled by Indonesia and the country Papua New Guinea, on the eastern side of the island. Papua holds the biggest and most diversified forest area that still remains in SE Asia and is home to numerous Indigenous Peoples. But it is also heavily under threat by energy-related projects.

In West Papua, one tactic used by the Indonesian government to destroy huge forest areas without the destruction appearing as 'deforestation' in monitoring statistics, is to reclassify areas as 'non-forest'. This is a common practise in particular where it benefits industrial oil palm companies. (23) Another tactic is attempting to label monoculture oil palm plantations as forests. For example, the President has argued that oil palm plantations are forest because "oil palms are trees (..) they've got leaves (..) We don't need to be afraid of endangering – what's it called – deforestation, right?" (24)

The biggest deforestation project in West Papua, and probably worldwide, is the Merauke National Strategic Project. (25) 560,000 hectares of the more than 2 million hectares which the government of Indonesia has allocated to the Merauke Project, would be turned into sugar cane plantations, among others, to produce bio-ethanol. The government plans a mandatory 10 percent ethanol mix for petrol. (26) Another dangerous threat for forests in Papua is the decades-old plan by the Indonesia government to build the Mamberano River hydropower dam complex. If built, it could become the world's largest hydropower complex, with potential to provide electricity for numerous mega-industries in special economic zones. It would be a 'death certificate' for the future of Papua's forests and Indigenous Peoples.

In the Gulf province in Papua New Guinea, French oil company TotalEnergies plans a mega-liquified fossil gas project with production wells, a pipeline and processing plants. (27) The government also plans to expand industrial oil palm plantations by up to 1.5 million hectares by 2030, combined with factories for biodiesel production. (28)

Geothermal mining

In Indonesia, legally protected unfragmented forests have been opened for geothermal mining. A law approved in 2014 considers geothermal mining not a 'mining activity'. Many forest-dependent communities in the archipelago are now struggling against the mining companies drilling for potential mining sites insides primary forest areas, for example on the island of Flores. (29)

Forest conservation that triggers more deforestation

Governments' forest conservation plans in SE Asia are increasingly based on carbon trading and offsetting, turning the protection of forests into one more business opportunity. Whenever such plans are put in practice, those behind the plans tend to blame forest-dependent communities for deforestation. The drivers of large-scale deforestation such as those described in this article, by contrast often go without mention; where they are mentioned, they are described as an unfortunate occurrence. Restrictions do not target this large-scale destruction for energy but traditional farming and livelihood activities of peasant farmers and forest-dependent communities.

In Indonesia, one of the first jurisdictional REDD programs was implemented between 2019 and 2024 in the province of East Kalimantan. On the one hand, the program, supported by the World Bank, did not restrict the operations of industrial oil palm plantations, or the logging and mining sectors. (30) On the other hand, Indigenous communities that have taken care of the forest they depend on, have faced severe restrictions. The indigenous Dayak Bahau community of Long Sun, for example, has

been struggling for recognition of their ancestral rights over the lands and forest they depend on. They reported restrictions imposed on them as part of the jurisdictional REDD program, due to which they lost access to forests which women in particular depend on. Using fire to prepare fields for planting in the forest and tree felling for building material were also prohibited. One of the village women explains that her community has processes and practises in place that were developed over hundreds of years and do not destroy the forest. When land is burnt, special rituals are performed so that the fire does not spread. She says “I think the best forest caretakers are Indigenous communities”. (31)

Final remarks

This article describes the connection between energy-related projects and deforestation in Southeast Asia. While incomplete, it shows the extent of the destruction caused by massive deforestation that results from such energy-related projects, whether related to fossil or ‘clean’ energy. It shows how ‘energy transition’ builds anything but a ‘cleaner’ future.

Increasingly intertwined with this ‘energy transition’ trend, is an expansion of militarized conservation in Southeast Asia through government policies and plans; the UN Convention of Biodiversity (CBD) targets like the 30x30 conservation target to protect 30 percent of land by 2030 in protected areas; and private sector so-called ‘nature-based solutions’ initiatives. Discussing what energy and energy transition are really about is therefore fundamental and urgent.

With the increasing pressure over people’s territories, strengthening the support to communities facing all these projects and threats is equally urgent. Not only to strengthen the struggles to defend their territories and forests but also to build stronger alliances and movements in the region to resist.

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References:

- (1) WRM, 2025. [The heart of the problem: we need to talk about energy](#)
- (2) Wikipedia. [List of countries by coal production](#)
- (3) KOMPAS.TV, 2025. [Deforestasi Tambang di Kaltim Capai 4 Juta Hektare, JATAM Soroti Dampak Lingkungan](#)
- (4) Mongabay, 2025. [Indonesian civil society urges probe after payout for mine recovery that never happened](#)
- (5) WRM, 2019. [India: Mining, Deforestation and Conservation Money](#)
- (6) WRM, 2022. [“Energy Trade or Our Life”: The Struggle Against the Dams in the Mekong River Mainstream](#)
- (7) Nugal Ecologica Indonesia and WRM, 2026. [The Mentarang-Kalimantan hydropower dam in Indonesia: Electricity for whom?](#)
- (8) WRM, 2023. [The Industrial Park KIPi reveals the dirty and destructive face of Indonesia’s “green” transition](#)
- (9) Mighty Earth, 2024. [The impact of the Bauxite boom on people and planet](#)
- (10) Both the Mentarang and the Kayak hydropower dams will also provide energy for Indonesia’s new capital IKN in East Kalimantan, called a ‘smart, green and forest’ city. See: WRM, 2023. [New Capital Cities, Deforestation and Social Apartheid: Parallels Between Brazil and Indonesia](#)
- (11) WRM, 2023. [Indonesia: Protests against mining for electric vehicles](#)
- (12) IWGIA, 2025. [Nickel for Electric Vehicles threatens key forests and the last nomadic tribes in](#)

Indonesia

- (13) Mighty Earth, 2024. [From forests to electric vehicles](#)
- (14) Alyansa Tigil Mina, 2026. [UnderMiningRights: mining-induced human rights violations and environmental destruction](#)
- (15) Amnesty International, 2025. [Philippines: What do we get in return? How the Philippines nickel boom harms human rights](#)
- (16) Ibid
- (17) CRI, 2025. "Broken Promises" [Philippines Nickel Mining Causes Rights Abuses and Increases Climate Vulnerability](#)
- (18) Eco-business, 2025. [Southeast Asia's potential role in rare earth elements diversification](#)
- (19) Mongabay, 2025. [Satellite data show burst of deforestation in Myanmar rare earth mining hotspots](#)
- (20) FWI, 2024. [Report: Wood Energy Boom Threatens Southeast Asian Forests and Communities](#)
- (21) Mongabay, 2024. [Indonesian forests put at risk by South Korean and Japanese biomass subsidies](#)
- (22) Mongabay, 2026. [Indonesia's deforestation surges 66% in 2025, reversing years of decline](#)
- (23) WRM, 2020. [Indonesia: REDD+, European Development Funding and the 'Low-Carbon Economy'](#)
- (24) Mongabay, 2026. [Indigenous communities oppose Papua forest rezoning for palm oil](#)
- (25) WRM. [Indonesia: Stop the Merauke National Strategic Project!](#)
- (26) Greenpeace, 2025. [Sweet Promises, Bitter Reality: Inside the Merauke Sugarcane Project](#)
- (27) Total Energies. [The Papua LNG project](#)
- (28) Global Witness, 2021. [The true price of palm oil](#)
- (29) Mongabay, 2026. [Indonesia's deforestation surges 66% in 2025, reversing years of decline](#)
- (30) WRM, 2024. [How Jurisdictional REDD in Indonesia threatens forests and benefits NGOs: the case of East Kalimantan](#)
- (31) Mongabay, 2025. [Tolak Proyek Karbon, Masyarakat Long Isun Surati Bank Dunia](#)