



PALUGADA

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AND THE PORTRAIT OF ENERGY CROP
FOREST DEVELOPMENT IN INDONESIA

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Multi-business for Energy Security in the Regulation of the Minister of Environment and Forestry Number 8 Year 2021 on Forest Administration and Preparation of Forest Management Plans, as well as Forest Utilization in Protected Forests and Production Forests

Multi-business, the emerging new licensing term or scheme in the environment and forestry sector, is considered a breakthrough in optimizing the benefits of natural resources in Indonesia, especially forest resources. Forestry Multi-business is defined as the implementation of a number of Forestry business activities in the form of Area Utilization business, Timber and Non-Timber Forest Product Utilization business, and/or Environmental Service Utilization business to optimize Forest Areas in Protection Forest and Production Forest. Unfortunately, there have yet safeguards, neither socially nor ecologically, to maintain the integrity and sustainability of the impact on the existence of remaining natural forests. This issue will address the role of multi-enterprise forestry for the energy sector by opening opportunities for various businesses, we will also discuss the availability of forest areas in relation to achieving national energy mix goals. The National Energy General Plan in 2017 targeted the national energy mix to reach 23 percent in 2025 and 41 percent in 2050 for new and renewable energy including biomass/bioenergy.

“... up to 2021, the new and renewable energy (EBT) mix was only 11.7%, which leaves quite a gap to the targeted 23%. ... to accelerate NRE utilization, either replace the primary energy source or continue using existing technologies, namely B30, B40, and B50,... (as) biomass utilization for cofiring in coal-based power plants.” Delivered by Edi Wibowo, Director of Bioenergy, General Directorate of New, Renewable Energy, Energy Conservation, Ministry of Energy and Mineral Resources.

Forest can be utilized through Forest Utilization Business Licensing/Permit (PBPH)^[1], either in protection or production forests, both of which have the opportunity to develop into multi-business forestry. Application for PBPH for Protected Forest and Production Forest as a legal base for utilizing forest, is submitted to the Minister of Environment and Forestry through an integrated electronic system (OSS system). In order to comply with the national new and renewable energy mix target, energy-related projects can be performed through area utilization, environmental service utilization, and timber forest product (HHK) utilization business.

Forest area utilization include cultivating biomass- and/or bioenergy-producing plants in production forests (in other terms, energy plantations/Energy Plantation Forests, HTE), environmental service utilization through utilizing water flows for the construction of micro- and mini-hydro power infrastructure in protected forests, and utilizing timber forest products (Natural or Plantation Forests) from production forests. The term Plantation Forest also includes Energy Plantation Forest businesses.

No	Multibusiness PBPH in Protection Forest	Multibusiness PBPH in Production Forest
1	Area Utilization;	Area Utilization;
2	Utilization of Environmental Services; and/or	Utilization of Environmental Services;
3	Non-Timber Forest Product (HHBK) Collection	Utilization of Timber Forest Products (HHK);
4	-	Utilization of HHBK;
5	-	Collection of HHK; and/or
6	-	HHBK Collection.

In this policy, multi-businesses in protected forests are designated for the construction of facilities and infrastructure for micro- and mini-hydro power plants. Development by utilizing the flow of water through environmental service utilization schemes to meet the electricity needs of households and industries. The need for electricity for industry is divided into the needs of hotels, restaurants, factories, hospitals, schools, offices, and construction of micro- and mini-hydro power plants.

[1] Forest Utilization Business Licensing/Permit

Meanwhile, multi-businesses in production forests are designated for the cultivation of biomass or bioenergy-producing plants, including the development of Energy Plantation Forests and Energy Gardens. In terms of meeting the new renewable energy mix target in the national energy mix, the availability of forest areas can come from protection forests and production forests. However, impacts on production forest areas will be higher because their utilization is through natural forest conversion and land use, using an area utilization scheme and utilization of timber forest products (Natural Forest, IUPHHK-HA) and Plantation Forest, IUPHHK-HT).

“The Ministry of Environment and Forestry continues to encourage the development of Industrial Plantation Forests (HTI) for bioenergy or in short, Energy Plantation Forests (HTE). Forest area of 6.91 million hectares (Ha), which 78.39 percent is oil palm plantation and has the potential to become a source of bioenergy was released. Moreover, 0.44 million hectares of forest area was granted the permit to rent and use as HTI for the energy sector.” Siti Nurbaya, Minister of Environment and Forestry in Press Release Number: SP.017/HUMAS/PP/HMS.3/01/2021.

A few typologies that may enable meeting land needs from the availability of forest areas to achieve the target of biomass or bioenergy production are:

1. Transformation of IUPHHK-HA and IUPHHK-HT by applying for PBPH through OSS to utilize the area and timber forest products for cultivating biomass or bioenergy-producing plants or setting up Energy Plantation Forests or Energy Gardens in the permit/concession area.
2. Issuance of PBPH (through OSS) in production forests for utilizing area and timber forest products through cultivating biomass- or bioenergy-producing plants or establishing Energy Plantation Forests or Energy Gardens in the given area.
3. Nation-/Region- Owned Enterprises (Perum Perhutani for instance) apply for PBPH through OSS to carry out business of area and of timber forest products utilization through cultivating biomass or bioenergy-producing plants or build Energy Plantation Forests or Energy Gardens in their working area.
4. PBPH Collaboration with Community Coop, Holders of Community Forestry Social-Plantation Forest Management Agreement Holders to conduct business cooperation in the utilization of forest products and business partners (off-taker)^[2].

[2] Article 168 paragraph (2)

“In order to support the energy mix target of 23% in 2025, Perum Perhutani, a member of APHI, is currently conducting a co-firing program trial, which combines coal supply and biomass resources, for a Steam Power Plant (PLTU) in Paiton, East Java, and in the near future it will also be tested at PLTU Cikarang Listrindo, West Java” Indroyono Soesilo Chairman of the Association of Indonesian Forest Entrepreneurs (APHI)^[3].

Currently, there are 13 companies holding IUPHHK-HT (HTI Industrial Plantation Forest) permits that have applied for PBPH and have even developed Energy Plantation Forests in their permit/concession areas. These companies have allocated an area of 142,172 hectares for energy plantations, and as of 2020, 8,848 hectares has been actualized. There are still 18 other HTI companies that have committed to transform by proposing PBPH for energy to build Energy Plantation Forests (HTE). In addition, Perum Perhutani is also committed to allocate 120 thousand hectares for energy which 28 thousand hectares of it has been actualized in March 2021 ^[4].

“One of the efforts that the Ministry of Environment and Forestry (KLHK) is undertaking in supporting EBT (policies) is through the development of Industrial Plantation Forests for Bioenergy or known as Energy Plantation Forests. As reflected in the Regulation issued by the Minister of Environment and Forestry Number 62 Year 2019 which defines that energy crops are plants whose utilization is directed to fulfill the need for renewable energy originating from vegetable sources in the form of biomass, biofuels, and plants producing non-timber forest products.” Siti Nurbaya, Minister of Environment and Forestry in the appendix of Kepmen LHK No.168 Year 2022 on Operational Plan for Indonesia’s FOLU Net Sink 2030.

The development of Energy Plantation Forests or Energy Gardens in relation to reducing emissions and increasing the mix of renewable energy in the national primary energy mix will target forest areas, thus threatening the existence of natural forests. This was also reinforced by the existence of Activity Performance Indicators (IKK) at the Directorate of Production Forest Businesses, Directorate General of Sustainable Production Forest Management (PHPL) of the Ministry of Environment and Forestry (KLHK) in 2015 to 2019, with a target area of production forest utilization for bioenergy (allocation) of 100 thousand Ha, and in the IKK KLHK Directorate General of PHPL in 2020 to 2024, with 15 thousand hectares areas are targeted for planting.

[3] <https://www.rimbawan.com/berita/hutan-tanaman-energi-masa-depan-energi-biomassa-indonesia-ok/>. Accessed on 27 October 2022 at 12.33 WIB.

[4] Delivered by Director of Bioenergy Ministry of Energy and Mineral Resources on a talk show held by BPD LH

PORTRAIT OF DEFORESTATION IN ENERGY PLANTATION FOREST PRACTICES

The portrait of deforestation from transformation (to energy plantation forest) practices aimed to assess the loss of natural forest due to multi-business activities implemented by the company in order to fulfill timber biomass raw materials. PLN in the RUPTL document targets 52 PLTUs^[5] to substitute coal as primary energy with timber biomass as electrical energy until 2030. This activity is often known as cofiring, by co-firing coal with biomass in a PLTU. Biomass which is claimed as clean energy is stated in various forms such as waste from timber industry, plantation and agricultural, and household. In this study, it will only be limited to sources of wood/timber biomass raw materials that were originated from HTI companies with energy plantation businesses, or often known as Energy Plantation Forests (energy plantations, HTE).

PBPH Licensing and Transformation Profile

The multi-business policy is considered as a momentum or quick step to meet the demand for woody biomass raw materials. The flexibility of the multi-business forestry policy allows for a single HTI permit to carry out various types of forestry business. Multi-business has so far been carried out by HTI forestry companies, from initially operating pulp and paper then adding a new type of business in the form of energy plantation forests. Now, such multi-businesses are even opening opportunities for energy plant businesses in the form of proposing new permits.

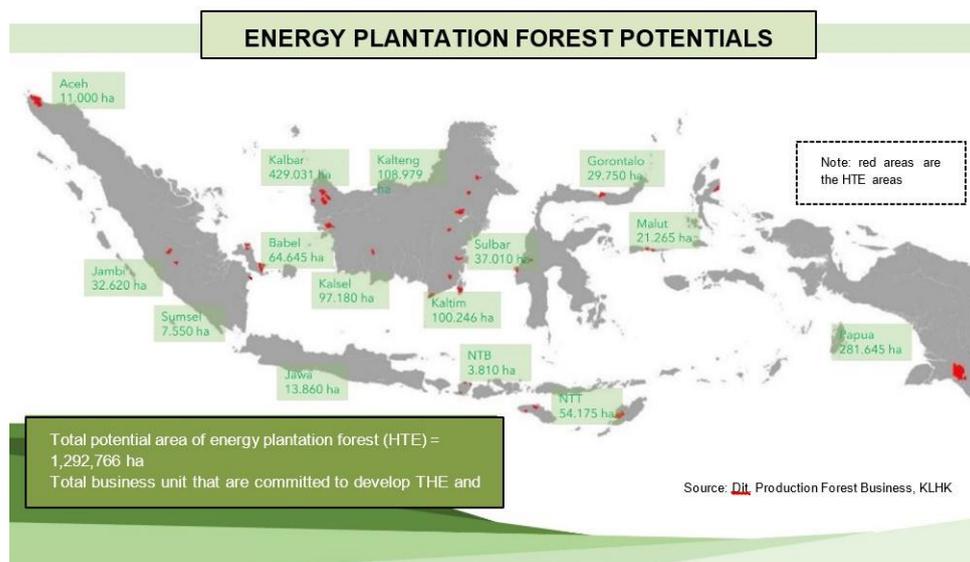


Figure 1. Map of Energy Plantation Forest Potentials. Source: Dit. Production Forest Business, KLHK

[5] RUPTL PLN 2021-2030

This multi-business practices by HTI companies include allocating part of their area to meet the needs of woody biomass by building energy plantation forests. The development of energy plantation forests by HTI companies will become a mainstay in meeting the demand for woody biomass as addressed by the Ministry of Energy and Mineral Resources and PLN in 2021-2030 Electricity Supply Business Plan^[6]. HTI is considered to have business similarities with HTE when viewed from the type, cultivation method (monoculture), and planting cycle. It is also possible that HTI companies will play a more active role in the exploitation of woody biomass energy crops in Indonesia. The Ministry of Environment and Forestry has released data related to the potential for forest areas for HTE development covering an area of 1.29 million hectares (Figure 1), entirely targeted from 31 HTI business permits from Aceh to Papua (Figure 2) with the addition of Perhutani for Java Island.

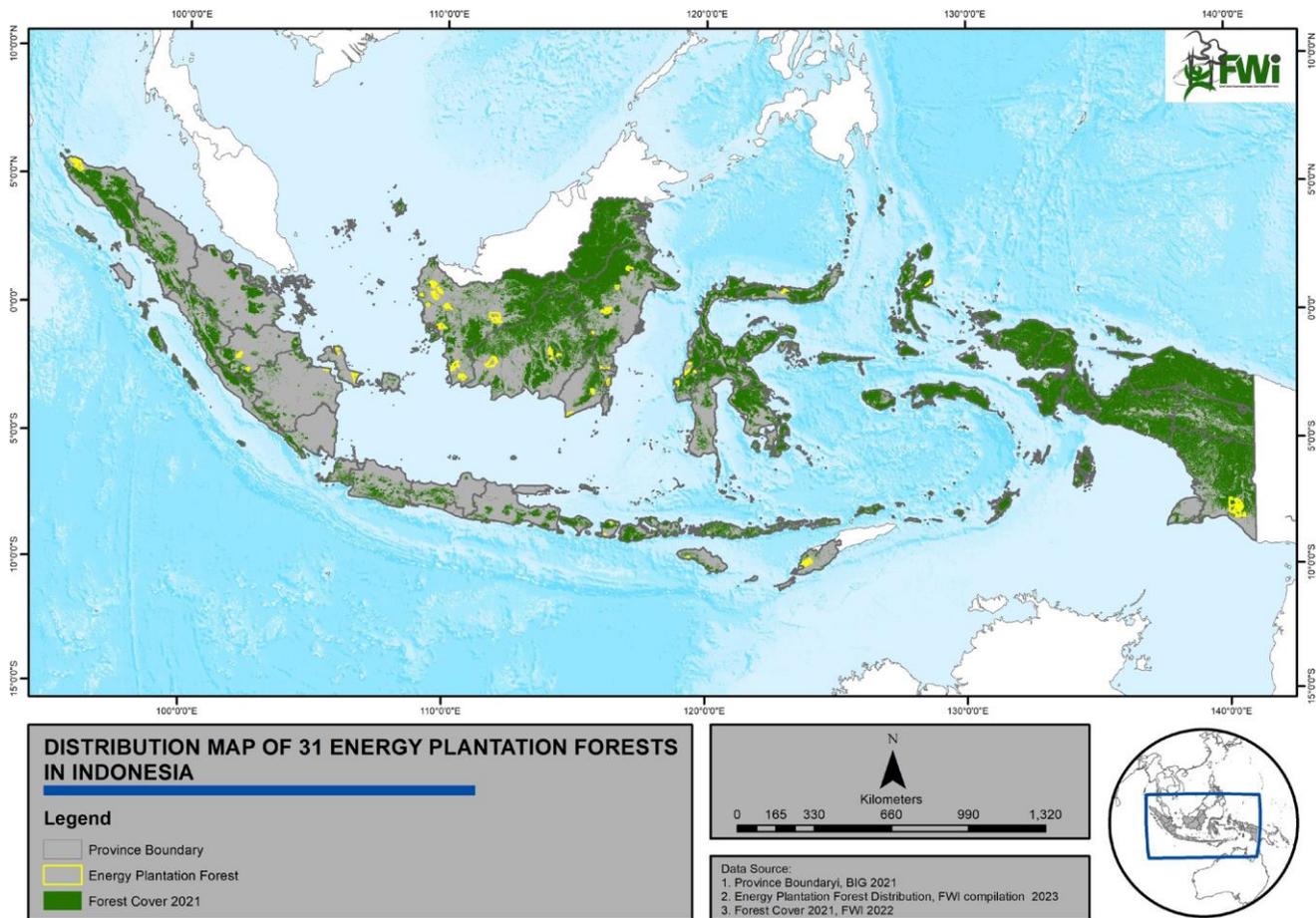


Figure 2. Map of 31 HTI concessions outside Java that are seeking and are committed to developing energy plantation forests

[6] The initial estimate of biomass demand for cofiring at 52 PLTUs is around 9 million tons and will continue to increase. Around 8 million tons are met by THE as stated in the RUPTL III-30 document.

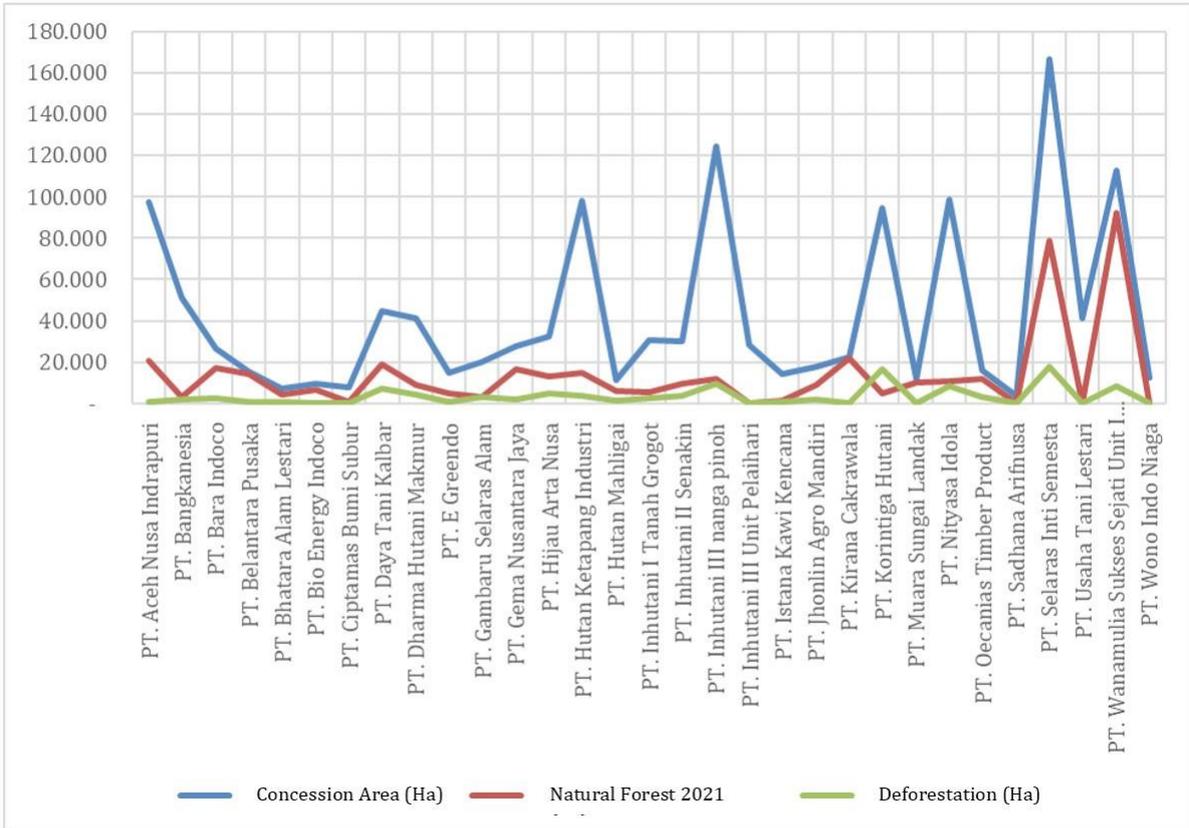


Figure 3. Concession Area, Natural Forest, and Deforestation (Ha) in 31 HTI Companies that are implementing and committed to HTE development

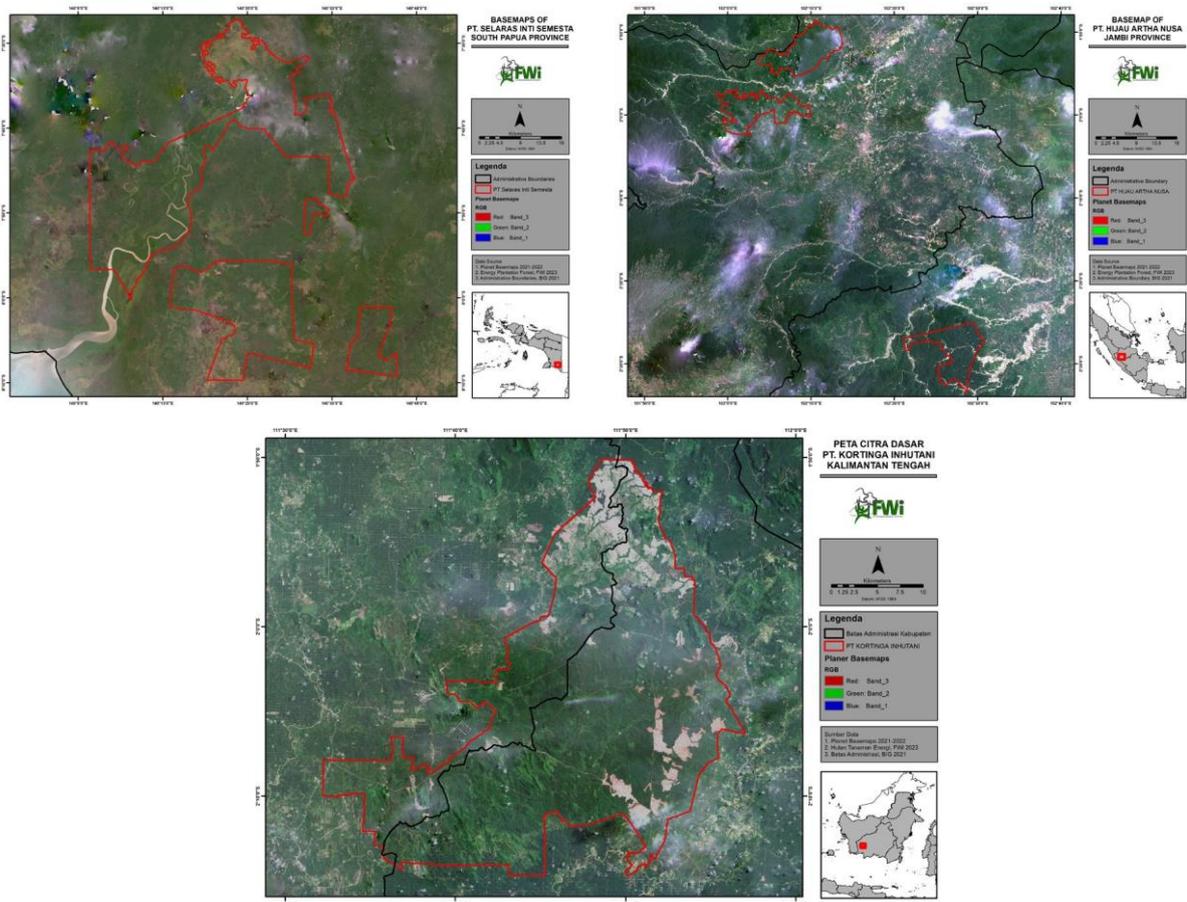


Figure 4. Map of Deforestation and Remaining Natural Forest in PT SIS, PT Hijau Artha Nusa and PT Korintiga Hutani concessions

Based on the distribution of HTI companies that are implementing and committed to developing HTE, there are 14 provinces outside Java Island, dominated by West Kalimantan province with 7 companies and East Kalimantan province with 5 companies. Three Java provinces, West Java, Central Java and East Java are under the management of Perum Perhutani. Based on the permit issuance year, they are divided into the range from 1997 to 2020. After the enactment of the Job Creation Law, through existing policy instruments such as Government Regulation Number 23 of 2020 and Minister of Environment and Forestry Regulation Number 8 of 2021, every company may submit application for Forest Utilization Permits in Production Forests in the form of Timber Forest Products from Plantation Forests.

Multi-business, ease of licensing (single online submission), and energy transition policies are opportunities for HTI companies to carry out permit/licensing transformations. FWI observations revealed that the permit status of 31 HTI companies that carried out PBPH^[7], 8 permits were in revoked status, and 3 in the process of being evaluated (Table 1). This is based on SK.01/MENLHK/SETJEN/KUM.1/1/2022 on Revocation of Concession Permits in Forest Areas which was issued by the Ministry of Environment and Forestry in early January 2022. It is alleged that permit holders are taking advantage of the ease of licensing with the OSS platform, multi-business policies, and energy transition policies to only perpetuate forest and land tenures. However, the licensing statuses of these companies have yet to receive clarification on the cancellation of the license revocation from the Ministry of Environment and Forestry after PBPH submissions.

State of Forest, Deforestation, Emission Intensity

The forest situation is defined as the state of natural forest and the shift in natural forest cover to non-forest cover as a consequence of HTE development inside the licensed concession. Carbon emission, simply put, is the release of carbon into the atmosphere. Deforestation and emission are interrelated. Carbon emissions are a contributor to climate change along with greenhouse gas emissions which can cause global warming and result in a significant increase in earth's temperature.

The energy transition program through HTE is in fact closely related to carbon emission from deforestation. Our observation on 13 companies that are implementing energy plantation business showed that in their concessions, 55 thousand hectares of natural forest were deforested from 2017 to 2021. Stating that HTE program aims to lower carbon emission by producing woody biomass through deforestation is a total misconception. If emission value is converted according to emission factor^[8] in each province, the value will be 24 million gigatons. HTE development will not compensate the lost function of converted natural forest. The emission value will never amount to the actual loss of forest functions and unexplored potential knowledge. The lost forests will no longer provide land and water conservation, flora and fauna habitat, and suitable microclimate.

[7] 31 PBPH Development of Energy Plantation Forests in the Programs and Activities of the Directorate of PHL in the appendix of the Minister of Environment and Forestry Decree No. 168 Year 2022 on Indonesia's FOLU Net Sink 2030 Operational Plan.

[8] https://ditjenppi.menlhk.go.id/reddplus/images/adminppi/igrk/dokumen/ER_Norway_Report_rev_Final_20200207.pdf

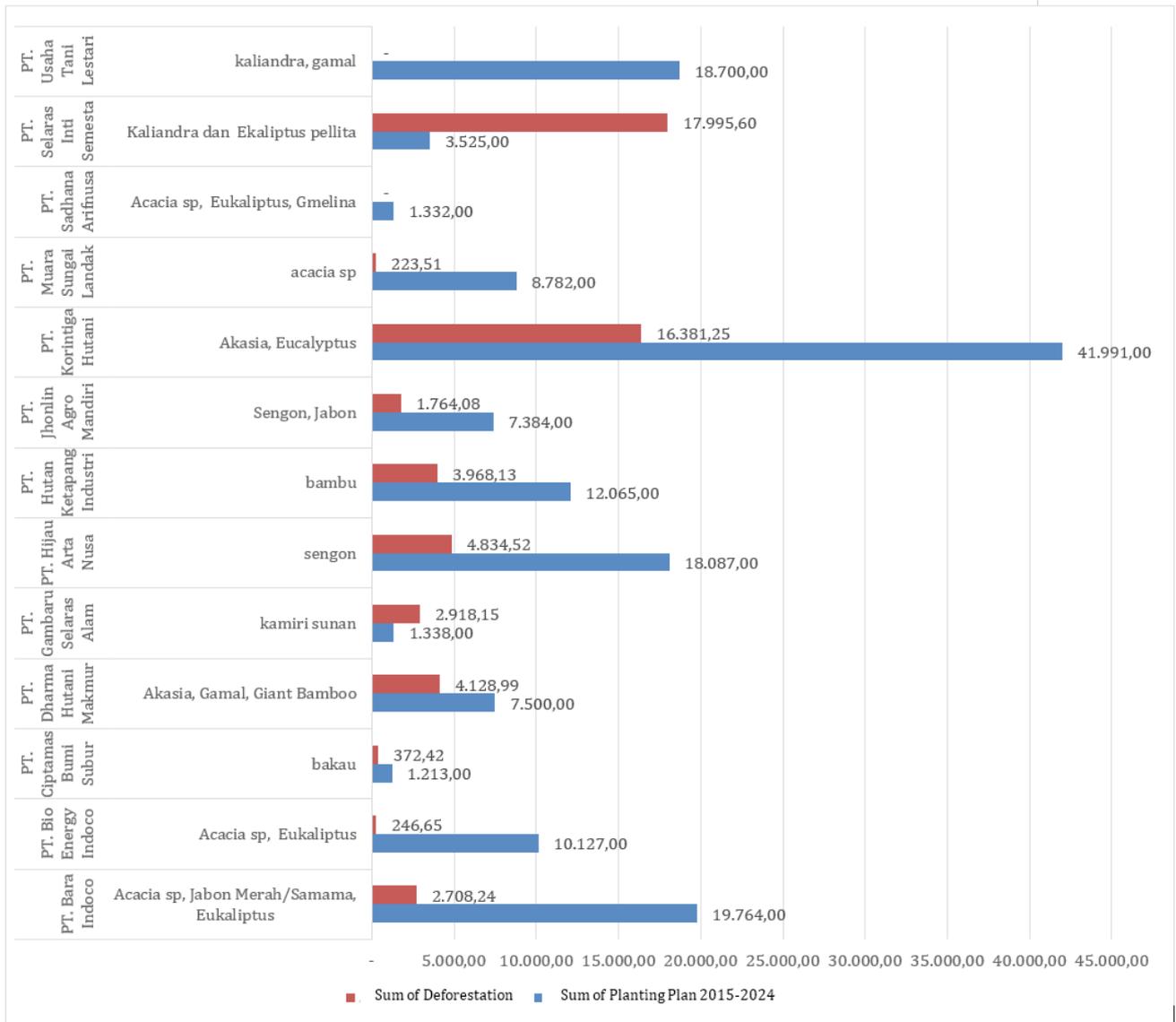


Figure 5. Deforestation and Planting Plans for 13 HTI Companies with HTE Implementation

The absence of natural forest safeguards in these 13 HTI companies has enabled the alarming rate of deforestation. There are at least 167 thousand hectares of natural forest in the concession which is currently under threat of disappearing due to planned deforestation to meet the demand for woody biomass production. This figure will be even greater if project it with 31 HTI companies, including those that have already implemented and those that are committed to develop energy plantation forests, resulting in 420 thousand ha of natural forest that are to be destroyed. Emission values are directly proportional to the level of natural forest destruction by these companies. Even so, the loss of forest function can never be exchanged by the value of carbon emissions.

Based on the calculation from 2017 to 2021, three companies emerged with the severest deforestation, PT Selaras Inti Semesta (SIS), PT Korintiga Hutani, dan PT Hijau Arta Nusa (Figure 4) HTI company PT Selaras Inti Semesta has committed the most deforestation and released emissions into the atmosphere. Despite the company plans to plant areas of 3,525 hectares from 2015 to 2024, deforestation in their concession in Papua reached at the very least 17,995 hectares, which was about 32 percent of the overall deforestation.

The deforestation of 17,995 hectares in four years plainly outweighed the planting plan of 3,525 hectares in 9 years by more than 5-fold. PT Korintiga Hutani in Central Kalimantan followed suit with its deforestation reaching 16,381 Ha and a plan to plant areas of 41,991 Ha until 2024. Another deforestation at PT Hijau Arta Nusa in Jambi of 4,834 Ha was recorded with a planned planting area of 18,087 Ha. These evident offsets indicate that a worse deforestation is on the horizon. Meanwhile, deforestation in PT Sadhana Arifnusa, PT Usaha Tani Lestari and the East Nusa Tenggara-located HTE-committed PT Wono Indo Niaga^[9] have yet to be detected due to data unavailability.

In the 2022 Emissions Claim Report, Trend Asia stated that the demand for woody biomass raw material for substitution purposes was expected to reach 10 million tons^[10]. This figure was obtained by assuming the demand for 52 PLTUs, if a cofiring rate of 10 percent is applied. This value will surely grow, with higher woody biomass proportion of cofiring in PLTU, which will lead to a severer deforestation. Moreover, there are competing demand for woody biomass for exporting quota.

As a global commodity, apart from domestic market, woody biomass (especially wood pellets) is also urgently demanded by export/foreign market. Since 2020, the wood pellet market has grown massively due to the significantly higher demand for it. Future Metrics estimated^[11] that the demand for wood pellets in 2025 would reach 30 million tons, while RISI^[12] estimated 50 million tons demands in 2024 and Viridis Energy^[13] stated that the value of this business has reached 9 billion USD in 2020. Future metrics also provides more detailed market analysis in Canada and Japan. Several other indications that add to the accuracy of the analysis are the Korean Government which has also invested 11.6 billion dollars in 2016 for alternative energy and according to the Korea Forest Biomass Association, this will increase its wood pellet imports from 1.5 million tons in 2015 to 8.5 million tons in 2022.

Business opportunities from domestic demand of biomass for cofiring as well as fulfilling export quota, furtherly supported by government policies in favor of HTE development, have encouraged expansion and forest dominion by corporations. Using all existing policy tools, such as multi-business policies, wood biomass energy transition policies, and ease of licensing using an online single submission platform, companies are ultimately used to perpetuate control over forests and land within their concessions. Such phenomenon has become a new way to deforestation in the management of forest resources in Indonesia. We have assessed the urgency of reviewing the implementation of policies that actually accelerated deforestation. A mere value of carbon emission can never reflect the true loss of natural forest. There are unaccounted functions and roles that can never be replaced by plantations or plantation forests.

[9] Companies that are committed to developing HTE

[10] Adu Klaim Emisi – Trend Asia 2022

[11] <https://www.futuremetrics.info/> accessed on 09 November 2022

[12] http://www.risiinfo.com/product/2015-global-pellet-demand-outlook-study/?mkt_tok=3RkMMJWWfF9wsRomrfCcI63Em2iQPJWpsrB0B%252FDC18kX3RUvJrqYfhz6htBZF5s8TM3DWVtFXqFR6UEIQrk%253D accessed on 09 November 2022

[13] <https://www.viridisenergy.ca/> accessed on 09 November 2022

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Table 1. List of HTI companies and Perhutani that undertake energy crops multi-business (source: FWI)

	Name	Permit Number	Province
1	PT. Hijau Arta Nusa	SK.183/Menhut-II/2013	Jambi
2	PT. Usaha Tani Lestari	SK.216/Menhut-II/2013	East Nusa Tenggara
3	PT. Bara Indoco	SK.110/Menhut-II/2014	West Sulawesi
4	PT. Bio Energy Indoco	SK.931/Menhut-II/2013	West Sulawesi
5	PT. Sadhana Arifnusa	SK.256/Menhut II/2011	West Nusa Tenggara
6	PT. Dharma Hutani Makmur	SK. 632/Menhut-II/2013	East Kalimantan
7	PT. Hutan Ketapang Industri	SK.59/Menhut-II/2007	West Kalimantan
8	PT. Gambaru Selaras Alam	SK.739/Menhut-II/2014	West Kalimantan
9	PT. Muara Sungai Landak	SK.389/Menlhk/Setjen/HPL.0/10/2020	West Kalimantan
10	PT. Selaras Inti Semesta	SK.18/MENHUT-II/2009	Papua
11	PT. Jhonlin Agro Mandiri	SK.482/Menhut-II/2014	South Kalimantan
12	PT. Korintiga Hutani	SK.201/Menhut-II/2011	Central Kalimantan
13	PT. Ciptamas Bumi Subur	70/Menhut-II/2005	South Sumatra
14	PT. Aceh Nusa Indrapuri	SK.261/MENLHK/SETJEN/HPL.0/4/2019	Aceh
15	PT. Bangkanea	SK.639/Menhut-II/2009	Bangka Belitung
16	PT. Istana Kawi Kencana	SK.20/Kpts-II/1998	Bangka Belitung
17	PT. Inhutani II Senakin	SK.505/Menhut-II/2009	South Kalimantan
18	PT. Inhutani I Tanah Grogot	SK.815/Menlhk/Setjen/HPL.0/10/2019	East Kalimantan
19	PT. Inhutani III nanga pinoh	SK.523/Menhut-II/2011	West Kalimantan
20	PT. Bhatara Alam Lestari	SK.631/Menhut-II/2013	West Kalimantan
21	PT. Hutan Mahligai	SK.47/Menhut II/2006	East Kalimantan
22	PT. Belantara Pusaka	SK.20/Kpts-II/1998	East Kalimantan
23	PT. Oecanias Timber Product	SK.298/Menhut-II/2012	East Kalimantan
24	PT. Nityasa Idola	SK.329/Kpts-II/1998	West Kalimantan

25	PT. Daya Tani West Kalimantan	SK.33/Menlhk/Setjen/HPL.0/1/2019	West Kalimantan
26	PT. E Greendo	SK.747/Menhut-II/2012	Central Kalimantan
27	PT. Gema Nusantara Jaya	1/1/IUPHHK-HTI/PMDN/2017	Gorontalo
28	PT. Kirana Cakrawala	184/Kpts-II/1997	North Maluku
29	PT. Wono Indo Niaga	SK.740/Menhut-II/2014	East Nusa Tenggara
30	PT. Wanamulia Sukses Sejati Unit I dan II	3/1/IUPHHK-HTI/PMDN/2015	Papua
31	PT. Inhutani III Unit Pelaihari	SK.358/MENHUT II2005	South Kalimantan
32	Perum Perhutani**		West Java, Central Java, East Java

