

Japan's Wood-Fired Energy Push Raises Forest Fears

A renewable energy source meant to cut emissions may be helping drive deforestation in Indonesia.



A ship carrying wood pellets departs a partly cleared tropical forest coast toward an industrial energy facility.

Japan's growing use of wood-based fuel for electricity is increasing demand for Indonesian wood **pellets** and chips, and environmental groups say that demand is becoming a new threat to Indonesia's tropical forests. According to reporting published by Phys.org, a new satellite analysis by environmental nongovernmental organizations links the expansion of Indonesia's **biomass** industry to deforestation and warns that more forest loss could follow if demand keeps rising.

Biomass energy means making power from organic material such as plants, wood, or agricultural waste. In many countries, it counts as **renewable** energy because trees and crops can regrow. Japan has turned to biomass partly because it imports virtually all of its oil and has spent years trying to build more secure and lower-carbon energy sources. On paper, replacing some **fossil** fuel use with plant-based fuel can look like a step toward climate goals.

The problem is that the word renewable does not automatically mean harmless. If biomass comes from sawdust, crop leftovers, or waste that would otherwise be discarded, the environmental cost can be lower. But if demand leads companies to cut natural forests, the climate and ecological ef-

fects can be serious. Forests store carbon, protect soil from **erosion**, slow flooding and landslides, and provide **habitat** for species found nowhere else. Cutting them also removes trees that would have continued pulling carbon dioxide from the air.

The dispute is especially sharp because some coal-fired power plants can be modified to co-fire biomass, meaning they burn wood fuel alongside coal. Supporters may see that as a practical bridge while a country builds more wind, solar, **geothermal**, or other cleaner power. Critics see it differently: they argue that co-firing can extend the life of coal plants while creating a new appetite for wood. Some scientists and environmentalists also argue that burning wood can release more carbon at the smokestack than coal, even if trees might regrow later.

The scale of demand is changing quickly. Worldwide use of bioenergy rose by more than 55 percent between 2015 and 2024, according to the International Energy Agency, a group that tracks global energy trends. In Japan, bioenergy still provided less than 6 percent of electricity generation in 2024, according to the Institute for Sustainable Energy Policies, but it is growing. Japan imported a record 8.64 million tons of wood pellets in 2025, up

35 percent from 2024. Imports from Indonesia rose even faster, from 66,460 tons in 2023 to 402,310 tons in 2025.

Environmental organizations Earth Insight, Auriga Nusantara, and the Indigenous Peoples' Alliance of the Archipelago say that Indonesia's expanding biomass production is already felling forests. Timer Manurung, director of Auriga Nusantara, said most of the biomass product is exported and that Japan is the largest destination. The groups say at least 45 **concession** permits have been granted for biomass across Indonesia. A concession is a government-granted right to use land or resources, often for logging, mining, or plantation development. Together, those concessions cover more than 750,000 hectares, or about 1.85 million acres, of natural forest.

The groups warn that forest clearing could affect Indigenous communities whose lives and cultures are tied to the land. They specifically point to the isolated Polahi community as one group that could be harmed by biomass concessions. They also say expansion could damage undisturbed forests that serve as habitat for vulnerable and endangered animals, including tarsiers and species of buffalo and pigs found in the region.

Japan's policy choices are part of the controversy. Japan has stopped subsidies for future large-scale biomass projects, according to Katsuhiro Suzushima of the Global Environmental Forum in Japan. A **subsidy** is government financial support meant to encourage an industry or activity. But projects that

have already been certified can keep receiving subsidies for up to 20 years after they begin operating. Critics say that means incentives created years ago could keep shaping the market for years to come.

Another contested issue is due **diligence**, which means checking a supply chain carefully enough to know where a product came from and whether it caused harm. Sayoko Iinuma, a forestry specialist and researcher at the Global Environmental Forum, said loopholes in Japan's due diligence policies could allow wood pellets linked to deforestation to keep entering Japan's market. Japan's Forestry Agency declined to comment on the link between Indonesian biomass imports and deforestation, and did not answer questions about how Japan ensures imported biomass is not tied to forest loss. Indonesian environment, forestry, and energy ministries also did not respond to requests for comment.

The trade-off is not simply energy versus forests. Japan faces real pressure to reduce dependence on imported fossil fuels and meet renewable energy targets. Indonesia faces pressure to create export industries and rural jobs. But forests, wildlife, and Indigenous communities can end up paying the hidden costs of energy decisions made far away. South Korea, once the largest importer of Indonesian wood pellets, sharply reduced biomass subsidies after criticism over deforestation links. Japan now faces a similar question: whether a fuel counted as renewable should still qualify for public support if its supply chain cuts into natural forests.

Written from reporting by Phys.org.

THINK IT THROUGH

1. Should a country be able to count imported wood-based biomass as renewable energy if the supply chain may involve deforestation in another country? Defend your standard.

A strong answer: A strong answer should weigh climate accounting, responsibility across borders, uncertainty in supply chains, and the difference between waste biomass and forest clearing.

2. Japan wants energy security and lower fossil fuel use, while Indonesian forests support biodiversity and Indigenous communities. How should policymakers decide whose risks matter most?

A strong answer: A strong answer should engage with unequal benefits and costs, national interests, local rights, and whether compensation or stricter rules could change the balance.

3. If subsidies helped create today's biomass market, should governments change the rules for already-approved projects or only for future ones? Why?

A strong answer: A strong answer should consider fairness to investors, public accountability, environmental urgency, and the problem of locking in harmful incentives.

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L R E D A L E E I S E L B T S C Y O
N C B R O O T B O E C O N N I U E E
S N L O Y E P C A S S B T I S C L A
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L S C O N C E S S I O N I E T C O D
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BIOMASS

CONCESSION

DILIGENCE

EROSION

FOSSIL

GEOTHERMAL

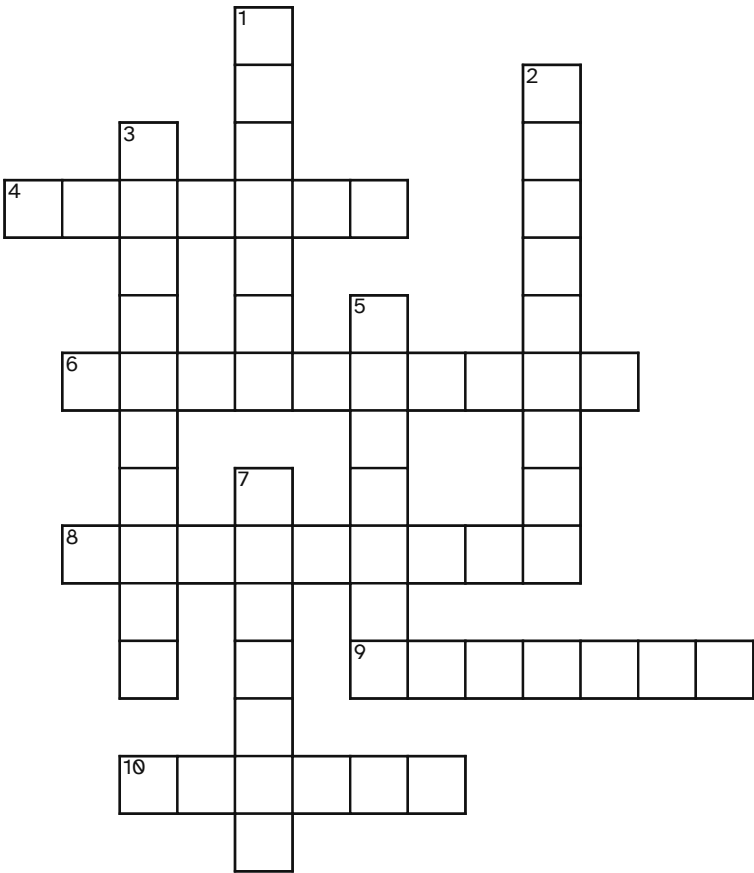
HABITAT

PELLETS

RENEWABLE

SUBSIDY

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ACROSS

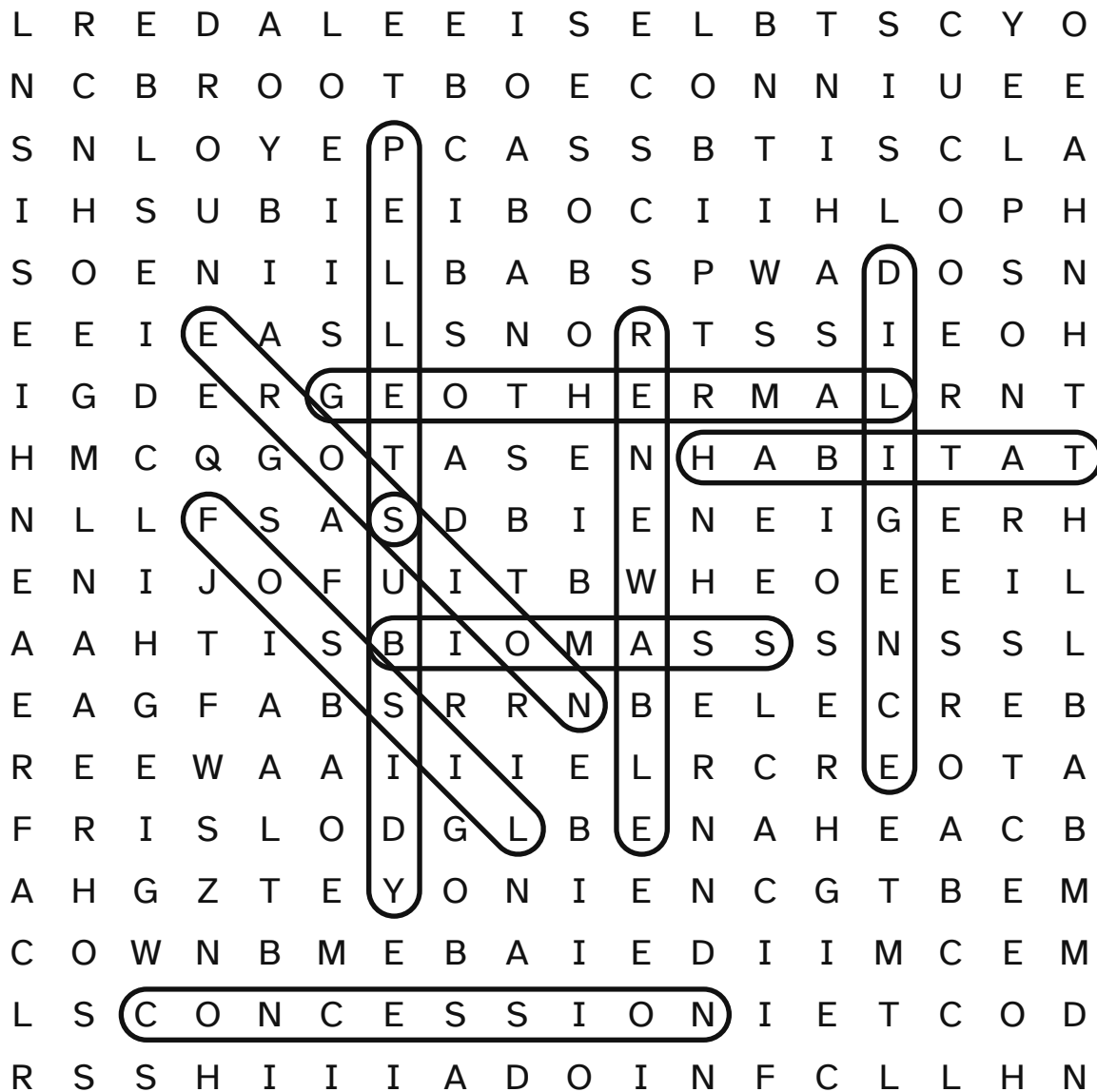
- 4 Wind or water wearing away soil or rock
- 6 Powered by heat from deep within Earth
- 8 Checking a product's source and possible environmental harm
- 9 Public funding that supports an industry or activity
- 10 Like coal or oil formed from ancient life

DOWN

- 1 Natural place where a species lives
- 2 Naturally replenished, like regrowing crops
- 3 Government permission to use land or resources
- 5 Compressed wood pieces used as fuel
- 7 Organic material used to produce power

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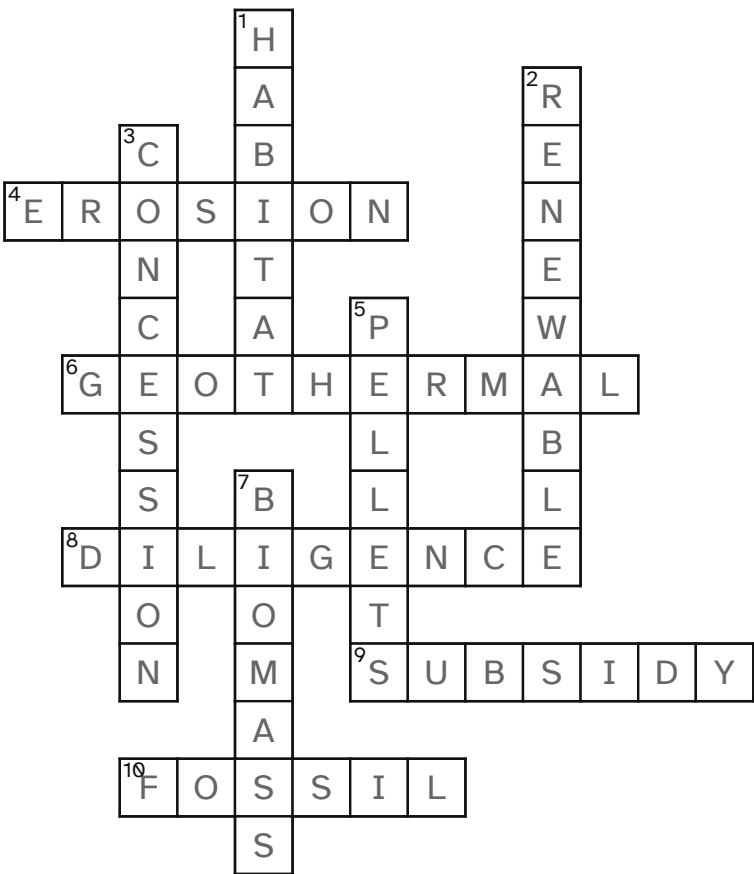
— answer key



BIOMASS CONCESSION DILIGENCE EROSION FOSSIL
GEOTHERMAL HABITAT PELLETS RENEWABLE SUBSIDY

Japan's Wood-Fired Energy Push Raises Forest Fears

— answer key



ACROSS

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Where this came from

This article was written for 3andB from the reporting below. It is not a reprint — the wording is ours and the facts are theirs.

Phys.org

“Japan's biomass energy boom threatens further deforestation in Indonesia”

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<https://phys.org/news/2026-09-japan-biomass-energy-boom-threatens.html>

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