Once a dream fuel, palm oil may be an eco-nightmare

Cleaner than fossil fuels like coal, biofuel has generated enthusiasm from governments and energy companies alike, but many have overlooked the complexities of the product
By Elisabeth Rosenthal NY TIMES NEWS SERVICE, AMSTERDAM Saturday, Feb 03, 2007, Page 9

Just a few years ago, politicians and environmental groups in the Netherlands were thrilled by the early and rapid adoption of "sustainable energy," achieved in part by coaxing electricity plants to use biofuel -- in particular, palm oil from Southeast Asia.

Spurred by government subsidies, energy companies became so enthusiastic that they designed generators that ran exclusively on the oil, which in theory would be cleaner than fossil fuels like coal because it is derived from plants.

But last year, when scientists studied practices at palm plantations in Indonesia and Malaysia, this green fairy tale began to look more like an environmental nightmare.

Rising demand for palm oil in Europe brought about the clearing of huge tracts of Southeast Asian rainforest and the overuse of chemical fertilizer there.

Worse still, the scientists said, space for the expanding palm plantations was often created by draining and burning peatland, which sent huge amounts of carbon emissions into the atmosphere.

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Factoring in these emissions, Indonesia had quickly become the world's third-leading producer of carbon emissions that scientists believe are responsible for global warming, ranked after the US and China, according to a study released in December by researchers from Wetlands International and Delft Hydraulics, both in the Netherlands.

"It was shocking and totally smashed all the good reasons we initially went into palm oil," said Alex Kaat, a spokesman for Wetlands, a conservation group.

The production of biofuels, long a cornerstone of the quest for greener energy, may sometimes create more harmful emissions than the fossil fuels they replace, scientific studies are finding.

As a result, politicians in many countries are rethinking the billions of US dollars in subsidies that have indiscriminately supported the spread of all of these supposedly "eco-friendly" fuels, for use in vehicles and factories. The 2003 European Union Biofuels Directive, which demands that all member states aim to have 5.75 percent of transportation fueled by biofuel in 2010, is now under review.

"If you make biofuels properly, you will reduce greenhouse emissions," said Peder Jensen, of the European Environment Agency in Copenhagen, Denmark.

"But that depends very much on the types of plants and how they're grown and processed. You can end up with a 90 percent reduction compared to fossil fuels -- or a 20 percent increase."

"Its important to take a life cycle view," he said, and not to "just see what the effects are here in Europe."

In the Netherlands, the data from Indonesia has provoked soul-searching, and helped prompt the government to suspend palm oil subsidies.

A country that was a leader in green energy in Europe is now leading the effort to distinguish which biofuels are truly environmentally sound. The government, environmental groups and some of the Netherlands' "green energy" companies are trying to develop programs to trace the origins of imported palm oil, to certify which operations produce the oil in an ecologically responsible manner.

Krista van Velzen, a member of parliament, said the Netherlands should pay compensation to Indonesia for the damage that palm oil has caused.

"We can't only think: Does it pollute the Netherlands?" she said.

In the US and Brazil most biofuel is ethanol (made from corn in the US and sugar in Brazil), used to power vehicles designed to run on gasoline.

In Europe it is mostly local rapeseed and sunflower oil, used to make diesel fuel. In a small number of instances, plant oil is used in place of diesel fuel, without further refinement.

But as many European countries push for more green energy, they are increasingly importing plant oils from the tropics, since there is simply not enough plant matter for fuel production at home.

On the surface, the environmental equation that supports biofuels is simple: Since they are derived from plants, biofuels absorb carbon while they are grown and release it when they are burned. In theory that neutralizes their emissions.

But the industry was promoted long before there was adequate research, said Reanne Creyghton, who runs Friends of the Earth's anti-palm oil campaign here.

Biofuelswatch, an environment group in Britain, now says that "biofuels should not automatically be classed as renewable energy." It supports a moratorium on subsidies until more research is done to determine whether various biofuels in different regions are produced in a manner that is ecologically responsible.

Beyond that, the group suggests that all emissions arising from the production of a biofuel be counted as emissions in the country where the fuel is actually used, providing a clearer accounting of environmental costs.

The demand for palm oil in Europe has skyrocketed in the last two decades, first for use in food and cosmetics, and more recently for fuel.

This versatile and cheap oil is used in about 10 percent of supermarket products, from chocolate to toothpaste, accounting for 21 percent of the global market for edible oils.

Palm oil produces the most energy of all vegetable oils for each unit of volume when burned. In much of Europe it is used as a substitute for diesel fuel, though in the Netherlands, the government has encouraged its use for electricity.

With hundreds of millions of euros in national subsidies, the Netherlands rapidly became the leading importer of palm oil in Europe, taking in 1.5 million tonnes last year, a figure that has been nearly doubling each year.

The increasing demand has created damage far away. Friends of the Earth estimates that 87 percent of the deforestation in Malaysia between 1985 and 2000 was caused by new palm oil plantations.

In Indonesia, the amount of land devoted to palm oil has increased 118 percent in the last eight years.

Then in December, scientists from Wetlands International released their calculations about the global emissions that palm farming on peatland caused.

Peat is an organic sponge that stores huge amounts of carbon, helping balance global emissions. Peatland is 90 percent water.

But when it is drained, the Wetlands International scientists say, the stored carbon gases are released into the atmosphere.

To makes matters worse, once dried, peatland is often burned to clear ground for plantations. The Dutch study estimated that the draining of peatland in Indonesia releases 660 million tonnes of carbon into the atmosphere a year and that fires contributed another 1.5 billion annually.

The total is equivalent to 8 percent of all global emissions caused annually by burning fossil fuels, the researchers said.

"These emissions generated by peat drainage in Indonesia were not counted before," Kaat said. "It was a totally ignored problem."

For the moment Wetlands is backing the certification system for palm oil imports. But some environmental groups say palm oil cannot be produced sustainably at reasonable prices. They say palm oil is now cheap is because of poor environmental practices and labor abuses.

"Yes, there have been bad examples in the palm oil industry," said Arjen Brinkman, a company official at Biox, a young

company that plans to build three palm oil electricity plants in Holland, using oil from palms grown on its own plantations in a manner that it says is responsible.

"But it is now clear that to serve Europe's markets for biofuel and bioenergy, you will have to prove that you produce it sustainably -- that you are producing less, not more CO2," Brinkman said.

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