

Scientists Warn on Biofuels As Palm Oil Prices Rise

Biofuels are likely to speed up global warming as they are encouraging farmers to burn tropical forests that have absorbed a large portion of greenhouse gases, climate scientists warned.

The specialists, who gathered for an international conference in Hong Kong, rang the alarm bell as Malaysian palm oil futures prices hit all-time highs this week, helped by new demand for the vegetable oil from the biodiesel sector.

"Some of these alternative energy schemes, such as biofuels, are truly dangerous," said James Lovelock, an independent scientist known for the Gaia theory.

"If exploited on a large scale, they will hasten our downfall," he said in a video message delivered from Oxford.

Preserving tropical forests is seen as key to mitigating global warming caused by greenhouse gases, as they capture a large volume

of carbon dioxide emissions.

In Asia, home to the world's top oil palm producers such as Malaysia and Indonesia, there has been an investment boom in biodiesel plants, which convert palm oil into biodiesel for cars, Reuters reported.

This has helped to push up prices for palm oil—the cheapest vegetable oil—by 25 percent so far this year. Prices had risen by 40 percent in 2006.

Chinese investors are also looking into building palm-based biodiesel plants in Indonesia or Papua New Guinea as Beijing promotes biofuels to cut the country's dependence on imported oil, although it already has a big deficit in vegetable oils.

"The big issue, particularly in Southeast Asia, is oil palm plantations. It is expanding rapidly for biofuels," said Simon Lewis from School of Geography, Earth & Biosphere Institute at University of Leeds.

"The likelihood is it will increase deforestation," he said. "It is said this can be reg-

ulated. But most tropical forest is essentially unregulated."

Lewis also said forest fires often caused by farmers were an additional danger for global warming, to which the international community had not paid enough attention.

"With the climate change, with periodic droughts, more of tropical forests is possible to burn," he said.

"People will set fire to forests if they can because they want to clear the forest for oil palm plantations."

The scientist said a record 2 billion tons of carbon went up into the atmosphere from fires in Indonesia alone during the El Nino in 1997/1998, in addition to usual emissions of 1 billion to 2 billion tons worldwide.

"The El Nino year of 1997/98 with massive burning across the tropics, record-breaking temperatures, carbon dioxide concentration may become a dangerously common feature in the coming decades," he said.

First Wind-Powered School in Scotland

An Aberdeen primary school has become the first in Scotland to harness the wind to generate its own power.

The wind turbine at Cults Primary school will start turning tomorrow morning to provide energy for the school and awareness of renewable energy among pupils, other schools and the wider community.

The £19,500 5-kilowatt Iskra turbine—supplied by North-east company Brumac Engineering Ltd, of Laurencekirk—is powerful enough to provide enough energy to run most of the school's catering operation.

The cost has been covered by the Scottish Executive-funded

Energy Saving Trust (£13,326), Aberdeen City Council (£9,500), the school's Parent-Teacher Association (£1,000) and Cults Community Council (£1,000). Egovmonitor.com said.

A 32-inch LCD screen has been installed indoors, allowing pupils and staff to monitor wind speed and direction, power output, and the tonnage of carbon dioxide which would otherwise have been pumped into the environment if the school were using conventional power sources.

The school has installed the equipment to let the pupils make a real contribution to renewable energy generation and learn

about enterprise, citizenship and working with others.

The turbine should deliver an approximate saving of £650 per annum at current electricity prices and will contribute to reducing the school's reliance on fossil fuels. The school expects to cut its CO₂ emissions by 5,633kg per year—and by 112,660kg over the lifetime of the turbine.

Aberdeen City Council leader Councillor Kate Dean said: "The staff and pupils of Cults Primary can be really proud of the fact that they are leading the way in Scotland with their renewable energy project. They are taking practical steps to help the environment and setting a

great example for other schools.

"Aberdeen is a World Energy City with an international reputation—and this project proves the up-and-coming generation is just as committed as the City Council to investing in renewable energy."

The City Council will closely monitor performance to discover how the turbine matches up to predicted performance levels.

The EST has further funding available for schools keen to go ahead with renewable energy schemes. The organization can also offer advice and grant help to community groups and householders—log on to www.est.org.uk/schri for more information.

WB Boosts Uganda Energy Sector

The World Bank has signed an agreement with the Uganda government for the provision of a \$300 million (about Shs500 billion) loan to support the Power Sector Development Operation, which has been set up to deal with the energy constraints the country is currently facing.

The credit, which was signed at the Finance ministry headquarters on May 28, includes a \$220 million investment loan and \$80 million for policy support.

Additionally, the scheme will also benefit from an additional \$6.5 million co-financing grant from the Swedish International Development Agency (Sida) to reduce energy consumption in public institutions and buildings.

Speaking at the signing ceremony in the ministry boardroom, World Bank Country Manager Grace Yabruday said the Power Sector Development Operation (PSDO) credit was approved by the World Bank Board of Directors on April 26 and would ensure that the country's commendable progress on reforms and private investment are not undermined and that the growth agenda remained on track, Alafraica.com said.

"This growth trend cannot be sustained without a sound infrastructure base, including affordable and reliable electricity supply," she said.

"Uganda's current low rate of electrification requires an urgent emphasis on significant investments in the sector both for expanding access and power supply."

She said one of the major components of the PSDO was to put in place a set of investments and policy measures designed to reduce the supply-demand gap until the Bugajali dam comes into service by 2011.

The WB Board of Directors has also

approved loan and guarantees agreements worth \$360 to support the project. She commended the government's efforts to restructure the energy sector in order to improve its efficiency and attract private capital.

"These initiatives contribute to poverty alleviation by supporting income and employment generation and improved quality of life, facilitated by modernization and more effective social services delivery," she said.

Finance minister Dr Ezra Suruma signed on behalf of the government. He said Uganda continues to face a "daunting challenge" of trying to overcome the current acute electricity supply shortage, which has negatively impacted on industrial production and hence the economic growth of the whole economy.

"This negative effect is likely to continue and worsen, if not checked in the medium term," he warned. Part of the credit (\$80 million) would be used to build financial sustainability and promote strategic policies for energy efficiency.

The investment portion of the credit (\$220 million) would support the installation of a new 100MW thermal plant worth \$210 at Mutundwe near Kampala.

Sida's \$6.5 million (about Shs5 billion) co-financing grant will be used to finance audits of public buildings in order to identify areas of energy saving.

"The energy efficiency component is a necessary complementary action to the addition of thermal power," said the Swedish Ambassador to Uganda, Anders Johnson.

"Saving energy is far more cost-effective than generating energy and we look forward to a successful implementation of the program," he added.

Majority of Americans Favor Solar on New Homes

According to a recent Roper survey commissioned by Sharp Electronics Corporation, nearly 90 percent of Americans think that solar electricity should be an option for all new home construction, up significantly from one year ago (79 percent). Three-quarters of survey respondents perceive solar power to be more important than ever, evidence that Americans recognize the value of solar as a clean, renewable form of energy.

The survey was conducted in May of this year among 1,004 adults to measure their perceptions of solar power.

"More and more, consumers are interested in solar energy, as the results of this survey clearly show. The message from consumers to homebuilders is clear—builders can differentiate themselves while satisfying customer needs by offering solar electricity on any home they build," said Ron Kenedi, vice president, Solar Energy Solutions Group, Sharp Electronics Corporation.

Even as consumers embrace the technology, they are not fully aware of its capabilities and they have misconceptions about how a solar energy system works in a home. Survey respondents were more likely to recognize solar could turn lights on (82 percent) and heat bath water (82 percent) or a swimming pool (80 percent), than power common electric devices like computers or appliances (71 percent), Solaraccess.com said.

There is a gap in understanding that solar electricity operates just like regular electricity and is the same kind of electricity that a local utility company provides.

"As the world's leading solar manufacturer, Sharp views this uncertainty as a strong reason for educating the public about the features and benefits of solar energy. It can power everything from air conditioning and computers to appliances and vacuums; consumers need to understand why it makes sense, both financially and for the environment," added Kenedi.

Sharp recently launched a unique awareness campaign under the tagline "Hello Sunshine" designed to demystify solar electricity for consumers. Components of the campaign appear in newspaper ads, Internet search results and web page banners—even a colorful traveling education trailer that will move from town to town throughout California increasing awareness and understanding of solar electricity.

The survey also revealed that the financial benefits of solar energy play an instrumental role in a consumer's decisions about solar electricity. Saving money on monthly energy bills was the primary motivation for consumers to install a solar system, with 84 percent of respondents citing this over any other rea-



Saving money on monthly energy bills was the primary motivation for US consumers to install a solar system, with 84 percent of respondents citing this over any other reason according to a recent survey.

son. More than half of respondents said they would be more interested in learning about solar energy for their homes, if the system would cost them zero money down and they would start enjoying an immediate payback in the form of lower energy bills.

The findings of the survey include: — 87 percent feel that homebuilders should offer solar power as an option for all new homes; older Americans are less enthusiastic, with 77 percent of those over age 65 supporting solar on new homes.

— Respondents understand that solar power can be used to turn the lights on (82 percent), heat bath water (82 percent) or heat a swimming pool (80 percent).

— Respondents are less likely to understand that solar can power electric devices such as computers or appliances (71 percent).

— Americans over age 65 are least likely to recognize this functionality (56 percent).

— Those in the Northeast (63 percent) and Midwest (65 percent) were significantly less likely to identify this functionality for solar energy, compared to those in the South (75 percent) and West (78 percent).

— 82 percent say that a decrease in monthly energy bills is their primary motivation for installing solar power; other respondents indicated it was to reduce overall energy usage (79 percent), reduce oil dependence (77 percent) or because it is a secure source of energy (75 percent).

— 56 percent would be interested in learning more about solar for their homes if the system could be obtained for zero money down and their utility bills would be lowered right away.

— Younger adults, ages 25-34, are more encouraged by monetary savings, with 67 percent expressing interest in solar.

At a pilot plant located on an isolated corner of the University of British Columbia campus, researchers are converting trees killed by the mountain pine beetle into high-grade ethanol, a green alternative to gasoline.

Four hundred kilometers away, north of Kamloops, waste bark fed into a high-tech burner comes out as synthetic natural gas for heating water and drying veneer at a plywood mill.

And in British Columbia Hydro's Vancouver office, staff are sorting through more than 80 expressions of interest from energy and forest companies. They want to produce power from mountains of wood going to waste alongside British Columbia logging roads.

Calling timber-rich BC the new, green Saudi Arabia without its polluting fossil fuels and gushing oil wells isn't just wild fantasy.

All over the world, scientists, businesses and governments are looking for ways to produce energy without increasing greenhouse gas emissions that are contributing to global warming.

Governments are already spending billions of dollars on clean coal research, on ramped-up nuclear energy programs, on hydro power, on energy efficiency and on power-saving strategies to put the breaks on climate change caused by greenhouse gases.

Turning Waste Wood Into Green Energy

In British Columbia, there is no more obvious source of green energy than wood, Canada.com said.

Radical shifts in thinking about the value of wood are underway that could transform this province's antiquated pulp mills into bio-refineries, producing carbon-neutral fuel and chemicals in the same way oil refineries break down crude.

This focus on bio-energy and biofuel is one of the first visible responses in the British Columbia economy to something that is becoming increasingly clear: BC is getting warmer and climate models tell us the warming is accelerating.

Bio-refineries and bio-energy can mitigate the impact of future greenhouse gases. But no mitigation strategy can save us from temperature increases already underway. By 2050, Greater Vancouver's average temperature will be where northern California's is today.

"Whether or not you believe in global warming, we cannot afford to take that risk," BC's deputy forests minister Doug Konkin told a recent Vancouver audience.

How the warming will occur shows why smaller organisms will thrive while larger ones will disappear. It's not just warmer summers that will drive the change. Greenhouse gases dampen heat loss, so BC will

have higher lows in winter, improving the survival rate for insects, fungi and moulds that can attack existing species.

Winters will be warmer, wetter and shorter.

Warming will more pronounced in the north and the Interior than on the coast, where warming will lead to increased frequency and severity of storms.

Savings on heating costs will be spent on air conditioning. During summer heat waves, air-conditioned shelters will aid people at risk of heat stroke.

These changes will be the visible signs of the wholesale destruction of existing species and the introduction of new species as the matrix of our biosphere is ripped apart. The Pacific Northwest stands to lose 47 percent of its plant species, according to a study in the International Journal of Plant Sciences. And nobody can say exactly what will move into those holes in our ecosystem. One thing appears certain: it won't be an orderly transition.

By 2050, the equilibrium of ecosystems that have taken millennia to fine-tune will be under attack. At the Royal British Columbia Museum in Victoria, Richard Hebda, curator of botany and Earth history, has created climate change models that are now on display at the museum. They show the province's forests and the species that live in

them moving as far as they can up mountainsides and retreating north.

It's not just temperatures that will change. The pattern of precipitation will change, as well.

How much falls, when it falls and how quickly it evaporates can make the difference between a cool forest, grassland or arid desert.

Changing patterns of rainfall and snowfall will affect rivers, lakes and groundwater.

Communities and farmers will fight over access to water that was once taken for granted.

Hebda refers to 2050 as a time of great ecological flux. We have already entered that period today and by 2050 it will be in full bloom. His modeling shows that by 2080, the changes will be even more dramatic.

"The rate of change is so rapid that no equilibrium will be reached for a century. It will probably take centuries," Hebda said.

The change has begun and Hebda said people need to understand just how dramatic it will be. "British Columbia is going to be transformed into something very different in geologically very short order—within the lifetime of a human. Something will happen that is just not normal," he said.

"The question is: What do we do about it? How do we respond?"

The giants of the coastal old-growth rainforest will be among the first to go, Hebda said.