

Blowing Smoke?

BUYER BEWARE:
GOT ECOGUILT?
THE CARBON OFFSETS YOU BUY
TO NEUTRALIZE YOUR CARBON
FOOTPRINT MAY BE 'JUNK.'



TONY AVELAR/THE CHRISTIAN SCIENCE MONITOR

This four-month multimedia investigation by reporters on five continents is a joint project of the Monitor and the New England Center for Investigative Reporting. It was funded, in part, by The Deer Creek Foundation. Assistance in video production was provided by students at Emerson College and Boston University.



BY DOUG STRUCK / CORRESPONDENT

TISZAKESZI, HUNGARY

Cardinal Paul Poupard stood for the flash of cameras in the Vatican in the summer of 2007, beneath an image of Jesus healing a blind man, and accepted a gold-framed certificate declaring the papal city the “first carbon-neutral sovereign state.”

By negating all the Vatican’s 2007 greenhouse-gas emissions with carbon offsets presented to the Holy See by the company KlimaFa, “the Vatican will do its small part in contributing to the elimination of polluting emissions ... threatening the survival of this planet,” the cardinal proclaimed.

No one was happier about it than Kiss Lajos. The stubby 65-year-old has presided as mayor of the scratch-poor farming village of Tiszakeszi in the Hungarian plains since the days of the Soviets.

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An offset gone wrong: Green windmills aggrieve farmers

BY BEN ARNOLDY / STAFF WRITER

MAHARASHTRA, INDIA

Like his father before him, Yashwant Malche has worked the same piece of land on this parched plateau a day's drive and decades away from Mumbai (Bombay). As an *adivasi*, or tribesman, he and his ancestors have been relegated to desolate land like this, mostly left out of India's modernization.

But in 2007, strangers came offering \$4,000 and marking off his land. They said they'd build windmills, part of a power project built and sold –

green energy and carbon offsets through projects in developing countries. The eco-conscious buyers of carbon offsets rarely see the consequences of the projects.

The environmental payoff has been meager in the Dhule project, which produces significantly less renewable power from the windmills than expected by investors and regulators. In part that's because of theft of windmill parts, says one company that bought into the project, Essel Mining. The overall project, developed by Suzlon Energy Ltd., has spawned legal battles, a government in-

quality. We are a good brand worldwide. When we state we are carbon neutral, we have to prove it."

It didn't look that way in the Indian countryside, where *adivasis* – long promised legal paths to ownership of these lands – saw their hopes dashed by the windmill project.

"There were so many trees they took down," says Dharma Sonawane, a villager who resisted the developer's offer of money for land his family had worked for three generations. The project, he adds, "is taking land away from us and we are poor people."



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MARY KNOX MERRILL/STAFF



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MELANIE STETSON FREEMAN/STAFF

in part – to create profits from carbon offsets.

"That's the livelihood of my family, so I couldn't possibly sell...." Mr. Malche says he told them. "When I refused to take the money, the people said the windmill will stand there no matter what."

It did. The Dhule wind project brought the erection of about 550 windmills on land used by 2,000 *adivasi*. The tussle over the land resulted in a confrontation between stone-throwing tribesmen and truncheon-wielding police, bringing tear gas and arrests. Some 12,000 trees were cut to erect the turbines.

The footprint of one windmill took less than an acre from a corner of Malche's small farm. But the loss means he no longer earns enough farming and now must spend part of the year in another state working in sugar-cane fields. He used to own three sets of clothes, he now makes do with two.

The Dhule project is an example of the dark side of a new industry that harvests profits from

investigation into deals involving tribal lands, and a cloud of acrimony and accusations.

All of this was news to Rabobank, a Dutch consortium that bought 175,000 tons of carbon offsets in 2008 to help the company become carbon neutral, says Bouwe Taverne, head of sustainable development for Rabobank in the Netherlands.

"It's sad to hear. This was not what we were looking for."

In 2007, Rabobank launched an effort to negate the carbon footprint for its global operations, cutting air flights, reducing emissions, and switching to electricity created by natural gas. That achieved a savings of 40 percent, and the company asked for bids to offset its remaining emissions for 2007.

Offsets generated by Dhule windmills were assured by an independent verifier and vetted by Rabobank's financial auditors, and the bank paid about \$8 a ton for them, Mr. Taverne says. "The offsets were verified. We were certain of the

Rabobank is now more wary about the unintended consequences of large offset projects in distant lands, Taverne says. To counterbalance the bank's emissions the following year, they bought other offsets in smaller projects. And the bank's goal is to use minimal offsets recommended by – and known to – Dutch nonprofit organizations.

"We think these projects," he says, "will be even more reliable." ■

1 **Climate Passport** kiosks at San Francisco International Airport offer eco-conscious travelers a chance to calculate the carbon emissions of their flight and buy certified carbon offsets.

2 **Herminio Rodriguez**, forestry engineer for Silva Tree, shows a paulownia seedling in a timber project that claims to be Panama's biggest reforestation effort.

3 **Jhipru Japtap** (in turban) says that a carbon offset windmill project disenfranchised him and others from land they farmed near Maharashtra, India.

NativeEnergy: the celebrities' offsetter; but what does it sell?

BY KATY JORDAN / CONTRIBUTOR

SOUTH BURLINGTON, VT.

NativeEnergy is the celebrities' choice in offset providers. But the stars might be hard-pressed to say what they are getting.

The Vermont for-profit carbon offset company lists among its eco-conscious customers Ben and Jerry's, the Dave Matthews Band, Jon Bon Jovi, the Democratic National Committee, and the makers of Al Gore's movie "An Inconvenient Truth." The company is a darling of many environmentalists.

But customers using NativeEnergy's online site to calculate and offset their current carbon footprint at \$14 a ton are buying a promise that the environmental benefit will be delivered gradually over the next 20 years. Until then, their climate-changing emissions are not neutralized.

The company's model is unique, and controversial. NativeEnergy mostly sells offsets for projects that have yet to happen or are only in the works. What it calls a "help build" concept is not accepted by the leading independent certification organizations, which typically verify only carbon reduction emissions that actually have occurred. NativeEnergy sells its emission reductions upfront – and says they will be verified later, when they occur.

"It's unique because of the future-value question," acknowledges Bob Sheppard, head of Clean Air Cool Planet, the nonprofit that "retires" NativeEnergy's offsets to ensure they are not reused. Most offset companies sell the carbon reduction from a single year, Mr. Sheppard says. "They buy the life-cycle [of a project], estimating it will run 20 years."

Tom Boucher, a former utility official who helped found NativeEnergy, defends his company's method as an innovative way of building new projects that help the environment.

"If you are simply paying for something that is already happening, it's far less compelling," he says in an interview in NativeEnergy's office. "The power of our help-build model with our upfront pay-

ments is [that] it really becomes part of the financing. If you just look to our shortened terms and conditions, or wherever we make a claim around an amount, we always have a reference to 'it's over time.'"

NativeEnergy described itself in 2007 as "a privately held Native American energy company," and now says it is "significantly owned" by native American tribes. Tom Stoddard, a former utility company lawyer and vice president of NativeEnergy, says native ownership is 16 percent. Mr. Boucher and Mr. Stoddard are not native Americans. They say they help finance projects that benefit indigenous people.

Tom Goldtooth, executive director of the Indigenous Environmental Network, based in Minnesota, argues that carbon offsets do more harm than help for native peoples. He says indigenous people from Canada to South America are being pushed off land for incoming carbon projects, and often do not share in the economic benefits created by these offset projects.

They are "just another mechanism to relieve society of the fact that we need to make real changes," Mr. Goldtooth says. "It functions to re-

lieve someone of their guilt."

Boucher and Stoddard are adamant that they aid in creating helpful environmental projects that would not exist otherwise – a fundamental requirement of offsets. This "additionality" requirement means offsets cannot be generated by a project that would have been built anyway; the offset must create some new, added, reduction in greenhouse gases to neutralize the emissions of the offset buyer.

NativeEnergy officials cite their part in building windmills in Greensburg, Kan., after that town was devastated by a tornado in 2007. President Obama touted the project to Congress as "a global example of how clean energy can power an entire community."

The US Department of Agriculture gave a \$17.4 million loan to John Deere Renewables to finance the Greensburg project; NativeEnergy provided some portion of John Deere's remaining costs of \$6 million – they and John Deere will not say how much. Stoddard insists the windmills would not have been constructed without NativeEnergy money. Steve Hewett, the Greensburg town administrator, says "the project was happening. They just made it quicker, and made the pricing look better."

The question of additionality emerges in many carbon offsets: If a windmill or solar project would have been built anyway, then the money from the offsets was not needed and therefore the offset did not create an additional emissions reduction. It does not create a new counterbalance.

Tom Rawls, a vice president and spokesman for NativeEnergy, notes that while their website is aimed at encouraging individuals to calculate their "carbon footprint" and make purchases online, many of the company's offsets are bought by businesses to "green" their operations. Rawls contends the businesses that buy offsets understand the complexity.

"We are not selling offsets to turnips," he says. "These are companies that are either very sophisticated or they are large and they have technical people and they understand what they are getting." ■



NativeEnergy's carbon offset investments helped finance the Greensburg, Kan., windmill project. But there is debate about whether the offsets negate investors' emissions.

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For his constituents, who scavenge brush along the Tisza River for their home fires, the ceremony in the Vatican offered rare hope: The Hungarian company KlimaFa promised to hire hundreds of workers to plant thousands of trees to suck up carbon on behalf of the Vatican.

It did not happen. KlimaFa did not plant a tree on what it ambitiously dubbed "the Vatican Forest" in the Tiszakeszi countryside, even as the California promoter who started the

company used the publicity to sell offsets on the Internet.

The Hungarian government, initially a cheerleader of the project, now does not want to talk about it. The company's president in Budapest backed out of an interview. The greenhouse gases produced by the cars and furnaces and lights of the papal apartments in the Vatican were not neutralized by the offsets.

"They were duped," says Jutta Kill, an analyst for the Forests and European Union Resource Network (FERN), which tracks environmental scams.

A Vatican spokesman says "the case is being studied to take legal action in order to defend the Vatican's reputation."

And the Vatican was hardly alone, an investigation by The Christian Science Monitor and the New England Center for Investigative Reporting (NECIR) reveals.

Tens of thousands of buyers purchase carbon offsets yearly to help neutralize their global-warming pollution. They are buying vague promises that may not be kept, for projects that may not be new and may not even help the environment.

Individuals who want to help the environment buy offsets for \$5, \$10, \$20 or more from green-swathed sites on the Internet, or pay extra for offsets when they purchase airline tickets, rent a car, or ship a package. Companies buy them in bulk to help project a "green" image. Government agencies and civic organizations get offsets believing the purchases will make their actions "carbon neutral."

They've created a worldwide market estimated by analyst Ecosystem Marketplace at \$705 million in 2008.

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PHOTOS BY MARY KNOX MERRILL/STAFF



Living quarters (left) are provided for Silva Tree workers. The tree-planting project promises to employ 600 people at the height of its planting, but so far only employs 10. Silva Tree says it will plant 1 million paulownia trees (below), known for growing fast.

that more than 350 hectares have been planted with tens of thousands of trees. But the company only owns 200 hectares so far, says Martin Rivera, who acquires real estate for Silva Tree. And a Monitor visit to the site in February found just 10 hectares had been planted, with 8,000 seedlings, since the October project launch. Herminio Rodriguez, forestry management contractor for Silva Tree, said 1,200 seedlings died – possibly because they were planted in the dry season, not considered the time to cultivate in Panama.

Company officials also contradict one another about the way carbon offsets figure in the project. The brochure and salesmen market it as a carbon offset project, but leave vague who actually receives the carbon credits and profit for sales of the credits.

“In Panama, it is a double benefit: timber and carbon credits.... There’s double income, on his/her plot,” says Maurice Sjerps, Silva Tree manager in Latin America.

But Ms. Katz says that investors don’t receive carbon credits; they would receive

profits from the sale of the timber. Credits wouldn’t be sold until VCS certification is achieved, she says, adding that the company would use the profits to improve the community near the project.

Some environmentalists criticize timber investment projects that offer carbon offsets because trees sequestering carbon are eventually cut. But Mr. Antonioli says that such projects can be valid, and one is already in the VCS database. “It may seem counterintuitive, but it could work. You can plant trees where no trees were there before.” That’s what Silva Tree says it’s doing – growing trees on fields of degraded farmland.

But questions and contradictions might not be apparent to any but the savviest investors if consumers believe the company’s claims that it is VCS certified, a cloak of legitimacy.

And, say some environmentalists, this is one of the main problems in the voluntary market. “There is no monitoring; they are monitoring themselves,” says Ricardo Carrere, the head of the Uruguay-based World Rainforest Movement. ■

Using the green cloak of ‘certification’ to market a plantation in Panama

BY SARA MILLER LLANA / STAFF WRITER

TRES QUEBRADAS, PANAMA

It’s an alluring offer: Plant trees in Panama. Create carbon offsets to help the environment. Then cut the trees and make lots of money.

That is the pitch of SilvaTree.com, a green-soaked website adorned with pictures of flourishing trees and children blowing dandelions.

Buy 660 trees in Panama for \$32,500, the company promises, and you will get back at least \$145,200 – a “guaranteed return” of 15 percent each year for two decades.

It is a “certified carbon offset project,” the company’s online promotion assures.

Except that it is not. Despite sales claims, the company says it’s only in the process of applying for certification. But it claims to be in the process of applying for approval by the Voluntary Carbon Standard (VCS), which would – if the approval comes – offer buyers some assurance of the offset validity when the trees mature. The former deputy environmental minister of Panama leading the company’s certification process, Eduardo Reyes, told the Monitor in a February interview in Panama City there’s no guarantee that it will eventually be certified.

Using carbon offset certification and climate change as part of marketing and public relations aimed at investors hints at a larger problem in a burgeoning market with little oversight. And

it concerns those in the industry who worry that inaccuracies at best, or fraud at worst, could blemish the reputation of the entire industry.

David Antonioli, chief executive officer of the VCS Association, which is based in Washington, D.C., says the organization has contacted one company that has claimed association with VCS for projects in Indonesia, China, and India yet was not registered with the monitoring body. “It’s not too common,” he says, but adds, “We are starting to hear this.... We’re starting to keep track of it.”

The market’s integrity is at stake, he says.

At Silva Tree, officials and employees contradict one another about the status of VCS certification of the project.

A salesman who calls – from London – a few hours after one downloads a brochure from the Silva Tree website, says the carbon offsets generated by these trees are “absolutely” approved by the certifier (VCS): “We have it on our website.”

They do. But, conceded Keren Katz, director of Silva Tree’s London office in a February phone interview, “It is not VCS certified. If it’s [in our brochure] it shouldn’t be.” In April the claims remained in their brochure and phone sales pitches were still claiming VCS verification.

It’s not the only conflicting information the company offers. A salesman this month asserted



The 'Vatican Forest' was felled before it grew

BY DOUG STRUCK / CORRESPONDENT

BUDAPEST, HUNGARY

Russ George described himself as a man of vision. He certainly envisioned making money.

The San Francisco promoter saw the profit of promising to remove carbon dioxide from the air, and selling that promise as carbon offsets to polluters, a plan he touted in interviews, press releases, and even to a congressional committee.

He just needed seed money. Nelson Skalbania, a high-profile Canadian real estate trader who had spent a year wearing a court-supervised electronic bracelet for a conviction in Canada of misappropriating \$100,000 in investor funds, was just the kind of "green angel" – as Mr. George called him – who would put up the money.

With Mr. Skalbania's backing, George bought the 152-foot research vessel *Weatherbird II*, repainted it with his new company name – Planktos – and hired a crew to sail for the Galapagos Islands in summer 2007.

His plan was to enlist one of nature's carbon sponges, algae. He'd scatter a fertilizer of iron dust on 2.4 million acres of the South Pacific, he announced. In three weeks, it would produce a massive bloom of phytoplankton algae, which would



Transporting firewood near Tiszakeszi, Hungary, villagers push their bicycles beside land where the 'Vatican Forest' carbon offset was supposed to be planted.



Cardinal Paul Poupard accepted a Planktos/KlimaFa carbon offset certificate from Russ George in July 2007. The promise to plant a 'Vatican Forest' was not fulfilled.

inhale carbon dioxide, then sink with the carbon. George would sell his estimate of the absorbed carbon as "carbon offsets" at \$5 a ton and make millions.

The *Weatherbird II* was under sail preparing to scatter 50 to 100 tons of iron dust when an outcry stopped it. Scientists said there was no way to tell what the iron or algae would do to the ocean environment. Diplomats cited treaties against dumping at sea. The captain of a Sea Shepherd Conservation Society ship threatened to ram the vessel. The *Weatherbird II* diverted to the Atlantic.

But George already was working on another plan: to plant millions of trees in rural Hungary and sell the carbon dioxide those trees could be

expected to absorb. He formed a Hungarian company, KlimaFa – "Climate Trees." His publicity strategy: Present the Vatican with carbon offsets to make the Holy See carbon neutral based on the trees he'd plant. The photo of George handing Cardinal Paul Poupard the offset certificates at the Vatican on July 5, 2007, went worldwide.

In the glow of that publicity coup, George offered offsets for sale on his Planktos website. There are no public records of how much he sold. But with

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In the United States alone, offset sales have tripled in five years.

But these offsets – some sold through respected environmental organizations – come with almost no rules: There is little regulatory oversight of them in the US, no enforcement of requirements to prove their environmental claims, no certain way of measuring the carbon savings sold, and no guarantees that planted trees or other projects will be finished or continued long enough to work.

The result, critics say, is a "Wild West" market ripe for fraud, exaggeration, and poorly run projects. Buyers who think their carbon emissions are being counterbalanced often are being fooled, those critics say.

An investigation by the Monitor and NECIR found examples of irregularities in the market that include:

- An offset project in India that cleared plots of traditional tribal farmlands to build windmills for green electric power, upending some farmers' livelihoods and – in the end – generating significantly less power than expected.

- A tree-planting project in Panama that promises profits for logging as well as calling itself a certified offset program when it is not. The group claims they are creating a huge forest; in fact, few trees have been planted.

- Scams in Australia that have prompted the alarmed government to launch a crackdown.

- A California promoter who launched a ship to spread iron dust in the South Pacific, a plan that the Environmental Protection Agency said would amount to illegal dumping at sea. He sought to grow a massive bloom of algae to prove it could ab-

sorb carbon to be sold for offsets.

- An Israeli charity that is selling offsets that are supposed to create brand-new projects – for tree planting it has been doing for 60 years.

Such examples are causing some supporters of carbon offsets to back off what they once saw as a promising tool to help the environment. And the troublesome record concerns those who want a carbon cap-and-trade program in the US that would use offsets.

"I think you are looking at 75 percent of them as garbage, at least," says

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the growing outcry over the sea-seeding scheme, Planktos abruptly closed in December 2007.

KlimaFa – and the Vatican’s still unfulfilled offsets – were left in the hands of a Budapest partner, David Gazdag. He blogged a few times about the project, occasionally stopped by government offices to talk, but planted no trees.

“This is a problem,” Gyorgy Dallos, a World Wildlife Federation official, said in Budapest. Carbon offsets create “false hope” if they’re not real. The Vatican’s emissions, he noted, are not neutralized.

Few of the players want to talk about that problem. Mr. Gazdag agreed to an interview in Budapest, then canceled. A Vatican spokesman says “the case is being studied to take legal action in order to defend the Vatican’s reputation.” The Hungarian government, once an enthusiastic supporter of the project, now

wants no part of it. Erika Hasznos, Hungary’s chief climate policy officer, walked out of an interview when asked if KlimaFa had submitted applications for the project.

George created another website in 2008, announcing a new business, Planktos-Science. He did not agree to an interview. He replied by e-mail that this story seemed a “potentially hostile piece” and insisted his new company is “no longer affiliated with the now defunct” old company he ran.

In the impoverished village of Tiszakeszi, where KlimaFa trees were to be planted, Mayor Kiss Lajos looks forlornly over the empty space along the Tisza River where George had promised to plant “the Vatican Forest” and create hundreds of jobs.

“We felt honored because the Vatican chose our village,” he said. “Now we feel sorry.” ■

Rolf Skar, a forest conservationist and senior investigator for Greenpeace.

Some consumers are becoming wary. The US House of Representatives dropped plans to make its Capitol offices carbon neutral last year after spending \$89,000 on offsets. Nike abandoned offsets this year as untrustworthy. Responsibletravel.com, a British travel agency that claimed to be the first to offer carbon offsets in 2002 as a centerpiece of its business, has quit relying on them to help the environment. Instead, the company urges its clients to fly less.

The US Government Accountability

Office (GAO) in 2008 found “limited assurance of credibility” in voluntary offsets. A parliamentary inquiry in Britain in 2007 found a long list of flaws with offsets and concluded that they have “no overarching, enforceable standards.”

Australia takes the most vigorous stand: Regulators pounced on one company for selling offsets for renewable energy it did not have; they charged another with false practices; and they are investigating allegations that natives in neighboring Papua New Guinea have been deceived into surrendering carbon rights for what

Australia leads the pursuit of carbon offset scams

BY KATHY MARKS / CORRESPONDENT

SYDNEY, AUSTRALIA

GreenSwitch: The name was instantly appealing, and Australians handed over tens of thousands of dollars to offset their emissions with “green power” certificates from the company.

But GreenSwitch executives, says the Australian government, didn’t bother to purchase all the renewable energy for the certificates they sold. When the government told them to stop, they kept at it for two more months.

In January, the Australian Competition and Consumer Commission (ACCC) ordered GreenSwitch’s parent company, Global Green Plan, to buy 4,000 certificates at a cost of about US\$128,000. Then the agency took offsetter Prime Carbon to court over false claims it was affiliated with the National Stock Exchange and approved by the Australian government.

The two cases were the result of a crackdown on “greenwash” marketing in the voluntary carbon offset industry, a consumer protection effort that puts Australia far ahead of other countries.

“It’s a new market, so it’s in its formative stage, and consumers don’t know much about it,” says Graeme Samuel, the ACCC chairman. “But they’re emotionally tugged towards buying products with sustainable attributes. All this means that the market is potentially open to abuse.”

His agency has taken Saab Australia to court over suggesting that the planting of 17 native trees would offset the lifetime emissions of a new car. It has also warned consumers to “hang up” if they get calls from a Japan-based offset promoter.

The federal government recently set minimum requirements for the verification and retirement of voluntary carbon credits. And

parliament passed legislation in March allowing restitution for duped consumers and fines of up to \$1 million.

Australia’s offset industry has grown at a ferocious pace, says Leonardo Ribon-Tobon, a project officer at The Royal Melbourne Institute of Technology. Just 13 carbon-credit retailers were here in early 2007 and 85 by last year.

Mr. Ribon-Tobon estimates that the Australian carbon offset industry does US\$40 million of business a year, but says only a third of the companies would disclose information.

So the real figure could be much more, he adds. “I think a lot of the companies are selling larger volumes of offsets than they’re disclosing.”

Australia’s northern neighbor, Papua New Guinea, has the world’s third-largest rain forest, which has drawn the attention of Australian offset developers.

In January, the head of a group of landowners, Abilie Wape, told the Special Broadcasting Service (SBS), an Australian TV network, that he was kidnapped after balking at signing over to an Australian businessman the carbon rights to tribal lands.

“We’ve put a lot of effort into this area,” Mr. Samuel says of carbon offset abuses. “Once you see it starting to appear on the edge of your radar screen, you know it won’t be long before it moves right to the center.”

It’s unclear if Australia is doing enough, says Jeff Angel, director of Total Environment Centre, an environmental group. “The industry is certainly open to [cheating].”

Consumers, says John Taberner, an environmental lawyer, should ask what exactly is being traded? “To my mind, the answer is nothing. It’s like buying a car, as opposed to a promise of a car,” he explains. “The former is the real thing, the latter is something that may or may not happen.” ■

After balking at signing over carbon rights to tribal lands, a Papua New Guinea leader says he was kidnapped.



BELA SZANDELSZKY

the natives call “sky money.”

“This is a sector that’s starting to rear a couple of ugly heads,” says Graeme Samuel, head of Australia’s consumer protection agency.

Many voluntary carbon offsets are sold online through retailers with eco-friendly names. Others are sold as add-ons: Travel companies allow customers to “fly green,” UPS customers can offset the cost of shipping packages, Ford car buyers can drive “carbon neutral” for \$29.95 per year, and the Harvard Law School urges students to buy offsets when they travel for job interviews.

Greenpeace and other environmental organizations have been reluctant to completely reject carbon offsets, which are supposed to help achieve goals they support: drawing down greenhouse-gas levels in the atmosphere, protecting forests, promoting alternative energy, and encouraging individual action on the global climate problem.

Groups such as The Nature Conservancy, the Environmental Defense Fund, and the Sierra Club argue that some offset projects are run by well-

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intentioned developers and succeed in their claims. And offset retailers say they do good work.

"There is a great opportunity here to be able to subsidize the reduction of emissions," says Pete Davies, president of the retail operations of Terrapass, a San Francisco offset provider that helps farmers pay for methane capture systems. "We see farmers being able to do the right thing that otherwise they wouldn't be able to do. We're excited to be a part of that."

The appeal of doing something for the environment has fed the rapid growth of offset sales.

"I buy them every time I fly," says Matt Durden, a Reston, Va., attorney who figures he spends about \$30 on carbon offsets through Expedia.com when he and his wife travel. He did not ponder the purchases long; they seemed a cheap and easy way to help the environment, he says.

Governments worldwide are contemplating mandatory offset programs, like that established in Europe under the Kyoto agreement. A top United Nations climate official predicted in 2006 that buying and selling carbon pollution reductions would become a \$100 billion-a-year market, potentially the world's largest commodities market.

Voluntary purchases are a small part of that, but even a small slice of such a big pie has created a burgeoning industry of offset developers, wholesalers, retailers, and promoters; the GAO counted at least 600 players in the US alone in 2008.

Mr. Skar, of Greenpeace, says the industry is rife with financial speculators in flannel shirts: "Carbon cowboys. People from the most bizarre backgrounds. People who have no prior interest in the environment."

HOW IT WORKS

The theory of carbon offsets is straightforward. For example, a traveler who generates a ton of carbon dioxide pollution by driving about 2,000 miles in an average car, can purchase an offset to pay for the reduction of a ton of carbon dioxide somewhere else in the world. The offset might promise that trees will be planted, methane digesters will be installed on farms, or new windmills will be financed by the purchase.

Where the reduction occurs doesn't matter, proponents argue, as long as the atmosphere is relieved of that ton of carbon. Others are queasy about the notion of paying to relieve their environmental responsibility.

Carol King Cummings, a Polson,

Mont., retiree, thinks of the offset concept this way: "My great-great-grandfather paid someone to fight for him in the Union Army in the US Civil War. This always embarrassed me a little. Carbon offsets strike me the same way."

For the theory to work, several requirements must be met. The most vexing is that the traveler's purchase must create a reduction in greenhouse-gas emissions that would not have happened without the traveler's money. If the traveler pays for some-

This article was written and reported by Doug Struck of the New England Center for Investigative Reporting, with contributions from reporters Ben Arnoldy in India, Sara Miller Llana in Panama, Ilene R. Prusher in Israel, Kathy Marks in Australia, and Katy Jordan and Tyler Maltbie in Boston.

ONLINE: Watch 'Buyer Beware – empty air' at: CSMonitor.com/carbonoffsets

thing that was going to be done anyway, that is double-counting and the traveler's emissions are not offset.

This requirement of "additionality" is difficult to apply, and critics say many projects are selling offsets to reap bonus profits for projects already being created for other purposes.

Windmill farms, for example, typically are built only if they can sell the electricity and also get substantial government subsidies or tax credits. On expensive projects like these, offset developers typically provide a small portion of the construction cost. Critics say the projects would probably go ahead with other funding, so developers should not claim credit for creating new carbon reductions.

"It might sound great, like a wind farm. Who can be against a wind farm?" says Anja Kollmuss, who has studied offsets for the nonprofit Stockholm Environmental Institute. "But wind farms are very likely to have been built for something else. For the consumer, it's incredibly difficult to understand."

The Jewish National Fund (JNF), for example, has been urging Jews worldwide to "plant a tree in Israel" since 1948. Now it is offering a "GoNeutral" calculator to figure how many trees one needs to offset one's carbon emissions. JNF says one \$10 tree over a lifetime of 70 years will absorb one ton of emissions.

"What the JNF is doing, carbon-wise, is not additional. Anything you do that is business-as-usual is not eligible for a carbon-offset purchase," says Eyal Biger, the founder of the

Good Energy Initiative, a nonprofit Israeli organization that also sells offsets through tree projects. Mr. Biger's group contends its trees are planted in urban areas, and are therefore new and additional.

Rabbi Eric Lankin, a JNF official, contends the GoNeutral purchases pay to plant trees beyond the group's business-as-usual quota. But he acknowledges the rules on trees and offsets are hazy: "The challenge is that this is not an exact science."

Others reject the theoretical underpinning of offsets: They are created by claiming to do something that would not normally have been done and then predicting how much carbon would be produced with – and without – that action.

"The trouble is, nobody can really verify – unless you can read a crystal ball – what would have happened. There are an infinite number of possibilities," says Ms. Kill, at FERN.

Offsets also are required to be permanent, or reasonably close to it. Carbon dioxide, the largest component of greenhouse gases, may last for 100 years in the atmosphere. But "offsetting" a ton of carbon dioxide by planting trees, vulnerable to destruction, does not assure permanence.

"Trees get blown down by wind. They burn in forest fires. They are eaten up by insects. The trees are harvested, or they die from old age," says Kill. "Forests are probably the worst pick" for offsets. They are, however, a favorite of promoters because of their symbolic appeal.

According to the analytic firm Ecosystem Marketplace, forestry projects in 2008 spawned an estimated 5 million tons of offsets at an average price of \$8.44 per ton. But if forests are cut or destroyed, notes Kill, there is no requirement – and little incentive – for the buyer or seller to replace the lost carbon savings.

"You take a holiday, and you want to offset your flight. You go to one of these terminals or online, and you buy your carbon credits. What's the potential of you as an individual – unless you are extremely dedicated or skilled – to find out what exactly is happening to the project in five or 10 years' time?" Kill asks.

PAYING NOT TO CUT TREES

Critics also question where the money provided by offset purchases really goes. With little or no regulatory oversight, there is no disclosure of profit margins, and the finances of offset providers are shrouded in claims of confidentiality. Ecosystem Marketplace says the industry "resembles the Wall Street of the 1800s



– with information closely guarded by those who profit from it."

The San Francisco offset provider 3Degrees, for example, sells offsets through an ATM-like kiosk recently installed, with much publicity, at the San Francisco International Airport. Travelers can use it to offset emissions from their flights – at \$13.50 per ton of carbon – expecting to buy a new carbon savings somewhere.

In fact, they are paying 3Degrees to send money to two environmental groups – The Nature Conservancy and the Conservation Fund – for a promise not to cut trees on land the environmental groups already own. The groups estimate how much carbon would be lost if they opened their California forest to logging, and they sell that amount as an "offset."

Jason Brown, a spokesman for 3Degrees, declined to say how the offset sales are split.

Silva Tree, a promoter that sells plots of trees in Panama, takes the opposite tack. It promises investors that it will plant trees in Panama that will be logged in five years, bringing "guaranteed" returns of \$145,200 if they pay \$32,500 now for a hectare (2.5 acres) with 660 trees. Investors cannot buy offsets. But Silva Tree advertising and telephone sales personnel say that the

BLOWING SMOKE

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MELANIE STETSON FREEMAN/STAFF

Farmers of the Dhule District of India bundle wheat grown among the windmills of the Dhule wind project, which sells credits for emissions saved by 'green' wind power to investors who want to neutralize their own greenhouse-gas emissions. Farmers there claim that the project has taken valuable land from them.

project involves, or will involve, certified carbon offsets. Sales representatives suggest that hundreds of acres of the "biggest reforestation project in Panama" have been planted. In a visit to the site with Silva Tree contractors in February, the Monitor found only about 25 acres planted.

The uncertainties in the carbon market, suggest observers, make carbon offsets the environmental equivalent of the financial derivatives that were at the heart of the US financial meltdown: complex, unregulated, unchecked, and – in many cases – not worth their price. And they stand to make their creators millions.

Even offset providers acknowledge the industry is rife with abuses. "There's a lot of bad stuff going around," says Roger Ryall, who sells offsets to car dealerships in Canada. "There are guys out there planting grass and trying to sell offsets from it. You have to be careful."

CALCULATE YOUR FOOTPRINT

Most offset sellers offer their products with an online sales pitch urging customers to "calculate your carbon footprint" with the site's calculator and then buy the equivalent amount of carbon dioxide emissions reductions. But results of those calculators vary widely, a study by Ms. Kollmuss at the Stockholm Environmental Institute found. Prices of carbon range from \$1 to \$47 a ton, according to Ecosystem Marketplace, which has done the only comprehensive financial study of voluntary offsets.

In answer to such complaints, some independent organizations – such as the Voluntary Carbon Standard, Plan Vivo, and Gold Standard – offer their seal of approval to projects. Offset providers say nervous customers should look for those certifications.

But certifications remain voluntary, and standards of the organizations

vary – there were at least 17 in 2009. Many conduct only on-paper reviews of projects, with no physical inspection nor follow-up to see if claimed reductions occur, Kollmuss says.

Nor is there any evidence of regulatory verification of certification claims. In its online brochure, Silva Tree claims approval from the most widely known certification, Voluntary Carbon Standard (VCS), in labeling its Panama project "VCS certified" Questioned about the claim, Silva Tree officials acknowledge they are not certified, but are in the process of applying, and anticipate selling offsets in the future. Other offset sellers use vague wording about "VCS standards" to imply certification they do not have. "Proving the legitimacy of carbon offset projects remains a major issue," said a 2009 Ecosystem Marketplace report.

David Hales, who has represented the US in international environmental negotiations and now is president of College of the Atlantic in Bar Harbor, Maine, headed a 2008 effort of college presidents to draw up guidelines for offset purchases by colleges and universities. None of the certifications met the standards of his group.

"The market is dominated by junk," Mr. Hales says. At his own college, he set students to the project of picking offsets to counteract emissions, and they found the effort a quagmire.

"It almost takes a full-time staff to determine exactly what you are getting," Hales says. "Even then, there is a range of uncertainties. It's truly a 'buyer beware' situation." ■

