INVESTING IN THE ENVIRONMENT

A simple primer for the complex world of carbon trading

Everything you wanted to know about this vital market vehicle, but were afraid to ask

By **Catherine Bolgar**

What is carbon trading?
It's a market-based system for reducing greenhouse gas emissions by setting caps and doling out allowances to companies that produce high emissions. "Lots of people think it's an esoteric thing, but in fact it will affect pretty much everybody with a stake in the economy," says Andrei Marcu, chief executive of the Geneva-based International Emissions Trading Association. "The underlying commodity is created by regulatory fiat. The IETA makes sure the market is conducted in a businesslike manner."

When did it start?
The market was born two years ago, as the Kyoto Protocol took effect. The biggest market concerns the European Union, which created a mandatory trading system for carbon emissions for its member states, to comply with the Kyoto Protocol. The EU Emissions Trading Scheme grants certain levels of carbon emissions to individual companies in four high-emissions sectors: energy, pulp and paper, ferrous metals and refineries.

Do other countries have carbon trading?
The U.S. has a voluntary system called the Chicago Climate Exchange, though it didn't sign the Kyoto Protocol. Japan has voluntary caps set by industry. Organizations and companies in other sectors and other countries besides those targeted by the EU may purchase carbon credits.

What is the Kyoto Protocol?
It's a 1997 international treaty that came into effect in 2005. Countries that ratified the treaty agreed to be bound to reducing their emissions to 1990 levels by the end of 2012. Developing countries aren't bound by caps.

How big is the carbon market?
The World Bank estimates the market at $30 billion (€20.4 billion) in 2006, up threefold from a year earlier. The EU trading system accounted for $24 billion last year.

How much is carbon selling for?
It's trading around €25 per EUA, or European Union Allowance, the unit of trade. One EUA is one metric ton of carbon dioxide.

Is carbon dioxide the only pollutant traded?
No. As the most commonly produced greenhouse gas, it's used as a benchmark. The Kyoto Protocol covers six greenhouse gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. Methane, for example, has a global warming potential 21 times greater than carbon dioxide, so reducing a ton of methane counts for more than reducing a ton of carbon dioxide. The EU market, however, deals only in carbon dioxide for now, and will expand in 2008 to cover all greenhouse gases.

How do you get carbon credits?
The 15,000 companies in the targeted sectors in the EU receive a certain number of allowances each year. They are free to calculate the best way to meet their emissions caps — by making changes to their industrial processes, buying units from companies that have a surplus, or buying units, called Certified Emission Reduction, or CERs, that are created from clean projects elsewhere in the world that reduce greenhouse gases.

How do you buy carbon allowances?
This is where a new industry has sprung up in two years. There are middlemen who gather up surplus credits for resale to companies that need them. There are others who look for projects to reduce emissions, to create CERs for sale. There are carbon-counting auditors and lawyers who have to stay abreast of fast-changing legislation. Companies looking to buy large lots of credits go through traders such as the big investment banks or companies like Climate Change Capital, a London carbon investment firm.

To buy carbon allowances, do you have to be a company facing an emissions cap?
No. Companies not covered by emissions-reduction regulations may buy CERs or other companies' surplus credits, or credits created under voluntary regulation, in order to meet voluntary goals of being "carbon neutral"— the electricity they use, the travel their employees do in the course of business, etc., is offset by carbon credits they effectively retire in Europe or create through green projects in other countries.

Why don't EU companies just build windmills in China or plant trees in Indonesia to get enough CERs to meet their caps?
The EU limits CERs to 10% of a company's allowance, so other emission reductions must come from cleaner processes within the union. But most European companies are already very efficient, says IETA's Mr. Marcu, and further improvements are costly. "If you go to a poor country, you can make a difference because the plants are less efficient." In effect, the less-expensive investment in a developing country helps offset the financial burden of improvements in Europe. It also helps reduce emissions in the developing world, because to qualify as a CER, the project must be one that would not have been built otherwise. A wind-energy company can't just sell CERs for its developments around the world, unless the wind farm is being built instead of, say, a traditional coal-fired power plant only because a company from the EU decided to make the investment.

GETTY IMAGES/Sean Gallup

REUTERS/Toshiyuki Aizawa

The carbon trading market was born two years ago, as the 1997 Kyoto Protocol took effect.

What happens to companies that exceed their emissions allowance and haven't bought enough credits to compensate?
In the EU, companies' emissions are verified; those that polluted beyond their quota must pay a fine of €40 a ton of carbon dioxide; the fine rises to €100 in 2008.

How does the system work in Japan?
If the EU system pushes companies through emissions caps, Japan's system, overseen by the Ministry of the Environment, pulls them through subsidies for installing emission-reducing facilities. The 32 participating companies volunteer to meet emission-reduction targets and receive emission allowances from the government, which then subsidizes a third of the cost. The subsidy must be returned if the company fails to meet its emissions target. A separate group of eight companies can trade their allowances or buy CERs to meet their targets, but they don't receive subsidies. There are also much broader voluntary caps set up by the Japanese Business Federation that can be met by purchasing CERs.

> If the EU system pushes companies through emissions caps, Japan's system pulls them through subsidies for installing emission-reducing facilities.

Are these carbon trading systems making any difference?
When the Kyoto Protocol was agreed to in 1997, China's manufacturing sector was a fraction of its current size. Russia's economy at the time was mired in post-Soviet stagnation. Those countries and many others were exempted from emissions caps on the basis that restrictions would be too burdensome to their emerging economies. And the U.S., the biggest overall source of emissions, signed the treaty but never ratified it. That said, emissions would be even worse without the Kyoto Protocol reductions. The original 15 EU members brought total greenhouse gas emissions in 2005 to 1.5% below 1990 levels. The World Bank estimates that for 2005-2006, once contracted projects have delivered reductions, there will be 800 million fewer tons of carbon dioxide released into the atmosphere.

INVESTING IN THE ENVIRONMENT

A green component in your portfolio can turn into gold

Environmentally focused funds offer a multitude of money-making options centering on climate change

By **Catherine Bolgar**

GETTY IMAGES/Andy Zito

WHAT CAN you, as an investor, do about climate change? Make money.

Regulators and the public are pressuring companies to clean up for the environment's sake. It's the same as for changing technology or globalization — companies that adapt to the new situation quickly can grab market share.

"There are three long-term trends," says Emma Howard Boyd, head of socially responsible investment and governance at Jupiter Asset Management in London. First is a growing regulatory and legislative framework on a global level — "wherever you are in the world, there's an increased focus on environmental policy and energy security."

Second, large corporations are voluntarily introducing environmental policies and backing them up with capital expenditures. And third, consumers increasingly are making purchasing decisions around environmental issues, Ms. Boyd says.

If you agree that attention to the environment is here to stay — and grow — then it makes sense to consider a green component in your investment portfolio. There are many ways to do it, from pure plays to a broad interpretation of "environmentally friendly."

Environmentally focused funds are one place to start, with more choices coming on the market every day. There are climate-change funds that consider carbon emissions. There are clean-environment funds that consider pollution more generally. There are wind funds, water funds, solar funds, and the list goes on.

A broad portfolio is best for investors and for fund managers, because it allows the most freedom to choose components, says Dr. Thiemo Lang, senior portfolio manager at SAM Sustainable Asset Management in Zurich. With a less specialized fund, "as a fund manager, you have the ability to allocate money in the most flexible and efficient manner. You aren't obliged to always put a certain percent of the capital in a certain subclass," he says.

By contrast, a narrow fund, focusing on something like only solar energy, might have good short-term performance as people jump on the bandwagon, Dr. Lang says. "But if you're in a limited subsector and there's a bubble forming, you're stuck."

Energy is a good sector for investment, Dr. Lang says, because markets usually are regulated so tariffs are stable, and renewable energy often gets guaranteed tariffs. That makes business relatively predictable.

"The importance of energy for our society is just going to increase in the future," he adds. "This is for sure. It's a sustainable long-term trend."

What isn't for sure is which technologies will triumph. "In the end, the final product is electricity, and the consumer doesn't care how it was created. So you have to make sure you have the best and cheapest technology," Dr. Lang notes.

Energy-efficient lighting, such as LEDs, is another growth area, he says. But the biggest market for LEDs is in mobile phones. "So you end up in the mobile-phone sector, or you have to make sure the company you're investing in has a big exposure to lighting for buildings rather than mobile phones," Dr. Lang says.

Determining which companies pass environmentally friendly muster can be difficult. Companies are touting their climate-change disclosures and their carbon footprints, but company-provided information can neglect to include some important data. An individual investor has little recourse, but big banks looking to include certain companies in their funds or indexes are better able to dig out the most complete data.

"The world of disclosure is improving markedly, but from a very low base. Direct apples-to-apples comparisons between companies are still extraordinarily complex and difficult to make, and one-dimensional 'carbon footprint' comparisons have proved to be misleading at best for investors, and often much worse than that," says Dr. Matthew Kiernan, chief executive of Innovest Strategic Value Advisors, a New York-based research firm that provides data for the Carbon Disclosure Project, a nonprofit organization in which members agree to disclose information about their carbon emissions.

In September, HSBC Holdings PLC created a Global Climate Change Benchmark Index of companies from 34 countries along 19 investment themes. To be included in the index, a company must generate more than 10% of overall revenue from at least one of these environmental themes, which range from wind energy to biofuels and efficient energy management. Companies also must have a minimum market capitalization of $500 million, says Joaquim de Lima, global head for equity quantitative research for HSBC in London.

"The challenge wasn't finding companies but trying to pick out details from the revenues that are generated from one or more of these themes," Mr. de Lima says. "Companies will say they are involved in climate protection but their efforts aren't necessarily growing year on year. They have to demonstrate an ability to grow revenues from climate change."

HSBC back-tested the index to 2004, and found returns of 125%, he says, and it outperformed the MSCI World Index by 70% since 2004.

"The returns are significant," Mr. de Lima says. Volatility is higher, he adds, but "you get much higher returns for taking a small additional risk."

Short-term volatility can also be an issue for Jupiter's 19-year-old ecology fund, one of the oldest around, says Ms. Boyd. That's because the fund's focus on a wide mix of environmental solutions leads it to a strong small- and mid-cap presence, which is somewhat more volatile than larger-cap stocks. "There might be some short-term volatility, but we show long-term results," she says, adding that the fund has a five-year return of 120.55%.

Last month, HSBC launched a fund linked to its climate change index with the goal of beating the benchmark by 3%, says Farley Thomas, global head of wholesale at HSBC Investments in London. It's going to be available in 35 countries, mainly in Europe and Asia.

Some funds invest globally while others are highly concentrated in a country, such as the U.K., or in a continent, such as Europe, but are open to investors in numerous countries. Sometimes funds are created by specialist firms for sale to individuals through banks — SAM tailored a fund for Japan's Nomura Asset Management, the Nomura-Aqua fund, for example.

> Interest in environmental investments has been strong in Europe for several years, and it's starting to grow sharply in Asia as well.

Interest in environmental investments has been strong in Europe for several years, and it's starting to grow sharply in Asia as well.

"We see huge interest coming out of Asia," says Dr. Lang of SAM. However, Asian banks and investment companies still lack in-house expertise on sustainability and renewable energy.

Dr. Kiernan of Innovest agrees. "In general, Europe is light years ahead of Asia on sustainability issues generally and climate in particular. For one thing, it has both regional and national legal restrictions on carbon emissions and a carbon trading market, neither of which is the case in Asia. So leading-edge institutional investors in Europe — notably major Dutch pension funds like ABP and PGGM — are already making at least some investments which are explicitly predicated on capturing value and returns from climate change. Nothing comparable exists yet in Asia or in North America, for that matter."

The growing interest seems to reflect a new economic fact of life. Much as the steam engine spurred the industrial revolution and computers and the Internet fueled the new economy, the driver of industrial change in the future may be the environment.

"Whether you believe in climate change or not, there's a huge shift and significant commitment on part of the United Nations, governments and regulators," says SAM's Dr. Lang. "We expect a huge relocation of money to low-carbon investment."