

Carbon Credits Explained

WHAT IS A CARBON CREDIT?

A Carbon Credit is created when the equivalent of one metric tonne of carbon dioxide is prevented from entering the atmosphere. Internationally known as Certified Emission Reductions, Emission Reduction Units, or Verified Emission Reductions, each carbon credit has a monetary value depending on the type and origin of the emission reduction produced.

WHAT ARE THEY WORTH?

Each carbon credit can be traded on the open market, with the current spot rates on the European Union's Emission Trading Scheme averaging 25 Euros per tonne during 2008, (EUA DEC '08). With the onset of the current global financial crisis and the reduction in the price of oil, the emissions market has been affected. Please see the current spot rate as indicated by the graph to the right. As the economy begins to recover and the price of oil rises, the value of carbon credits will also increase

WHO BUYS CARBON CREDITS?

Carbon credits are mostly purchased by governments & corporations who have a legal or moral duty to reduce their carbon footprint. A growing number of individuals are also purchasing sufficient personal carbon credits to claim a 'carbon neutral' lifestyle.

Although these organizations could implement change in their home country by sponsoring emission reduction projects locally, the economic benefits of deploying an equivalent emissions reduction scheme in the developing world for a fraction of the cost is what drives the international trade in 'carbon offsets'.

WHAT IS CARBON OFFSETTING?

Carbon offsetting is the process by which a successful emissions reduction is produced in one geographical location and claimed by another.

For example, a hydro electricity generation plant established in South America with the financial assistance of the Japanese government displaces the more polluting local oil & coal fired power stations, thereby creating a sizable carbon emissions reduction.

In return for providing the financial assistance, (without which the project would not have occurred), and allowing the international transfer of technology to support the plant, the Japanese government may claim the carbon emission reduction for their home country, thereby offsetting their national carbon reduction commitments.

In return, the developing nation develops sustainable resources, retains first world technology & benefits from a cleaner domestic environment.

WHY DO SOME PEOPLE CONSIDER CARBON OFFSETTING FLAWED?

In recent years, the term 'carbon offsetting' has become synonymous with unregulated voluntary contributions made by individuals and corporations to operators claiming to 'invest' the proceeds in worthy carbon emission reduction schemes. With no transparent mechanism through which to evaluate the effectiveness of a particular scheme, many investments have fallen fowl of the opportunist seeking to profit from an emerging market without clear guidelines. This is where the United Nations system of certifying carbon credits becomes indispensable.

UNFCCC: SETTING THE RECORD STRAIGHT

Only projects that carry the seal of approval from the United Nations Framework Convention on Climate Change, (UNFCCC), can truly claim to have had their emissions reduction impact verified. The two types of carbon credits created by

Where to buy carbon offsets

Carbon offset vendors (buy directly)

Climate Care. Rated in the Top 10 by Carbon Catalog, this company focuses on clean energy in developing countries with projects such as wind power, methane from biomass, and fuel substitution. My favorite project is using bicycle-pedal power for irrigation! Offsets sell for \$15.50 per ton.

Good Energy Initiative. All their projects are in Israel, and they're one of the only well-ranked companies to include solar power in their project mix. They also promote methane energy and efficient lighting. Offsets sell for \$9-15 per ton.

Green Mountain Energy. This is a Texas-based utility and you're investing mostly in their own solar- and wind-power projects. (They also deal in Chicago Climate Exchange Credits and reforestation.) Offsets are \$14 per ton.

Bonneville Environmental Foundation. Mostly solar. If you want your offsets to support solar, this is it. Most other vendors don't support solar at all, and for those who do, it's only a small part of their project mix. But BEF *concentrates* on solar, financing literally dozens of small solar projects. Their offsets cost twice as much as competing offsets, though, at \$29.40 per ton. Also, their website is

Directories & Reviews of vendors

Carbon Catalog. Thank god! Carbon Catalog ranks around 100 different offset vendors on both level of transparency and quality of their projects. Their handy table shows each company's rating, price per ton, and whether they're a business or non-profit. What's more, you can click through on any vendor to see their exact list of projects, to see whether they're dealing in wind, methane, solar, or reforestation. A great place to choose where to get your offsets.

List of certifications. EcoBusinessLinks has put together a guide listing which vendors' projects have been verified by which watchdogs. I don't think this is as useful as the Carbon Catalog (above), but if you're looking for vendors that meet a particular certification, then this will be helpful.

Tufts University's picks. The Tufts Climate Initiative picked their top four favorite vendors, listed below. By the way, Tufts also recommended choosing vendors whose projects meet The Gold Standard, the highest standard of quality for offset projects in existence.

- **My Climate.** The only vendor top-ranked by both Carbon Catalog and Tufts.
- **atmosfair.** Their website focuses on air travel, but an offset is an offset, so it's

painfully slow.

LiveCooler. They have one project: Providing compact-fluorescent lightbulbs to low-income families. If you like CFL's, this is your project. Offsets are \$13/ton.

good for any kind of carbon you want to offset.

- Climate Friendly. Invests in a wind farm in India. Also buys "the highest quality, independently verified carbon offsets available globally" from larger vendors.
- Native Energy. I have mixed feelings about this, as dairy is a wasteful industry (it's like trying to find alternative ways to fuel Hummers), and because milk isn't healthy anyway. (Second article on that topic.)

Criticism of carbon offsets

License to pollute: Probably the biggest criticism of carbon offsets is that it essentially gives the purchaser a "license to pollute". The buyer may think they get a free pass for their bad behavior, rather than changing that behavior.

My feeling is, for the person or business who won't or can't change their behavior, then carbon offsets are *better than nothing*. And even people who live a low-impact lifestyle still have some impact, and the same goes for them: buying offsets is better than not buying them.

The "license to pollute" criticism only goes so far. After all, we don't say that all knives are bad just because sometimes they're used as weapons. By the same token, I don't think it's fair to throw all carbon offsets on the garbage heap just because some people think that's all they need to do to go green. That is, the problem isn't with the product, it's with how people use it. The best way to address that is to make sure people know that carbon offsets aren't a panacea, and that the best way to prevent climate change is to use less. I don't agree that throwing the baby out with the bathwater (by eliminating carbon offsets) is a better way to go.

Businesses get money for pollution reduction measures they should have adopted on their own, anyway. Some carbon offsets give the proceeds to businesses to get them to reduce the amount of pollution they generate. A good question is, why are we giving them this blackmail money? Why doesn't the government simply require them to produce less pollution? Why do companies like DuPont need consumers to pay for DuPont to clean up its own mess? Such offsets might be compared to a child saying, "I won't hit my brother if you give me \$5." The child should be discouraged from hitting his brother even if he doesn't enjoy a payout as a result.

The answer to this one is easy: If this bothers you, don't buy this type of offset. Choose an offset vendor who's investing in renewable energy sources, like wind, solar or methane recapture. Carbon Catalog ranks vendors by the quality of their projects, and specifically lists each project a vendor invests in, so you can see for yourself where your money is going.

Something else to consider is that while it's uncomfortable to give welfare to rich companies for pollution reduction that they should be doing on their own anyway, if they *won't* do it on their own anyway, then buying the offsets reduces pollution. *Unfair as it may be, it does get the pollution down.* We can complain about the injustice all we want, but in the meantime the planet is frying....

Reforestation is dicey. Carbon offsets which rely on tree-planting might not work, because when those trees are cut down or burn down in the future, their absorbed carbon gets released again.

No problem, simply buy offsets from a vendor which doesn't focus on tree-planting. Use Carbon Catalog to find a vendor you like.

Worthless offsets. Some shady carbon offsets actually do nothing to reduce greenhouse emissions. Others reward businesses for conservation measures they were already going to do anyway. (more at FT.com)

The answer to this one is the same as the last two: Simply don't buy this type of offset. Use Carbon Catalog to choose an offset vendor who's investing in renewable energy sources, like wind, solar or methane recapture, or in tree-planting. And make sure the vendor is certified by a reputable, independent group.

No incentive for preserving existing forests.

The president of Guyana criticized the Kyoto Protocol's carbon trading program, saying, "If you cut down trees and you plant them back you get money, if you preserve them, you don't get anything." (more from Terra Daily)

I agree, this is ridiculous. There's not much you and I can do about this. Still, while there's some disparity in the system, our purchase of carbon offsets doesn't hurt Guyana's forests. They'll still be there whether we buy our offsets or not. While an argument can be made that the system is unfair, that's not really an argument against buying offsets.

If this convinces you that carbon offsets are worth buying, then I hope you'll actually **buy some carbon offsets.** :)

Links

Wikipedia's article on carbon offsets

CARBON CREDITS / OFFSETS:

Emissions trading, which is also called cap and trade, has evolved as a means of reducing the amount of greenhouse gases released into the Earth's atmosphere utilizing a market based approach. Since many countries now have their own emission reduction targets to achieve, caps have been placed on industries on the amount of pollution they are allowed to release. This is issued in the form of permits. If they produce more than permitted they will either have to reduce their emissions themselves, which may involve considerable expense investing in technology and machinery to achieve this or they would have to source carbon credits to offset their emissions from a verified source.

The carbon credit is, therefore, the financial instrument that represents one metric ton of pollution and this system of trading creates a financial incentive to comply. An example of this would be a business with a factory that typically produces 10,000 tons of CO₂ per annum with a cap imposed permitting them only 5,000 tons in emissions. They may be in a position where the best way for them to comply would be to purchase 5,000 carbon credits to offset their own polluting rather than incur the expense of trying to reduce their own emissions.

The credits are created by any entity that has developed a technology that is internationally recognised as having actively reduced, stored or avoided (also called sequestration) a measurable pollutant, i.e. one metric ton. This could be anything from wind farms, solar energy, methane capture, forestry projects, bio fuels, etc., which assist in the global reduction of the various emissions in question. These are usually carbon dioxide, methane, hydro fluorocarbons (HFC's) and nitrous oxide and all industries are involved from agriculture, mining, chemicals, manufacturing, waste disposal, sewage and so on; the list is endless. All businesses produce greenhouse gases in varying forms and degrees and with the new laws in place the trading of carbon credits is already booming.

VERs & CERs

VER stands for Voluntary Emissions Reductions or Verified Emissions Reductions. They both apply to the emerging voluntary carbon credits / offsets market outside of the Kyoto Protocol compliance regime. These voluntary credits are from reductions that have been generated by projects that are assessed and validated by objective third parties outside the UN Framework Convention on Climate Change (UNFCCC). Although still currently smaller than the compliance market, general, professional opinion is that the enormous scope of this market and the fact that the growth is led largely by the private sector as opposed to government policy, means that it has the likely potential to overtake the compliance marketplace. This is the market that Validated Carbon Credits is actively involved in.

CER stands for Certified Emissions Reductions and is a certificate or permit issued by the UN Clean Development Mechanism or CDM and each one represents one metric ton of CO₂e. These were initially introduced as part of the Annex B emission reduction commitment within the Kyoto Protocol but can also be used in the voluntary market. The certificate, which is just like that of a stock, is granted by the CDM Executive Board to projects in developing countries to certify that they have reduced greenhouse gas emissions by one metric ton of carbon dioxide per year. So, for example, if a project in India generates energy from wind power as an alternative to their usual burning of coal, it could save 100 tons of CO₂ per year which means that it could claim 100 CERs. A developed country can then purchase the CERs from them under the CDM process which assists them to comply with their own Kyoto targets.

CONDITIONS OF VERs

There are certain criteria that have to be met for VERs

Additionality:

This means that the credit must represent a true reduction in emissions over and above the normal "business as usual scenario." Although, arguably, testing this is not as stringent as it is with CERs, the principle is the same.

Sustainability:

In the compliance market the projects must meet 2 objectives which are to reduce emissions and contribute to local sustainability. In actual fact, the voluntary market is often far more sensitive to the sustainability issue because it is driven by buyers who are concerned with assisting local communities in developing countries in addition to emission reduction.

Verifiability:

An independent, objective third party is necessary to verify or validate a project that reduces emissions. These are carried out by a range of varying international organisations from entities accredited to the UNFCC to large, professional accounting / auditing companies and consulting firms. This, again, is similar to the CER process.

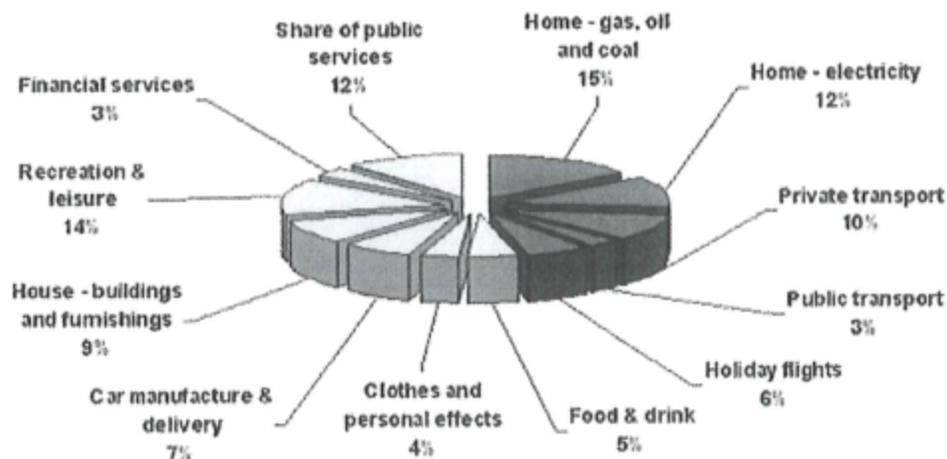
Reliability:

This is an area of concern to any buyer of VERs due to the possibility that it may already have been sold to another party or "double counted" as it is often called. So, along with the verification process, the carbon credit should be officially registered with one of the recognised central registries. This enables participants to see the project, check the verification, etc. and track the credit at all times.

What Is A Carbon Footprint?

A **carbon footprint** is a measure of the impact our activities have on the environment, and in particular climate change. It relates to the amount of greenhouse gases produced in our day-to-day lives through burning fossil fuels for electricity, heating and transportation etc.

The carbon footprint is a measurement of all greenhouse gases we individually produce and has units of tonnes (or kg) of carbon dioxide equivalent.



The pie chart above shows the main elements which make up the total of an typical person's carbon footprint in the developed world.

A carbon footprint is made up of the sum of two parts, the primary footprint (shown by the green slices of the pie chart) and the secondary footprint (shown as the yellow slices).

1. The **primary footprint** is a measure of our direct emissions of CO₂ from the burning of fossil fuels including domestic energy consumption and transportation (e.g. car and plane). We have direct control of these.

2. The **secondary footprint** is a measure of the indirect CO₂ emissions from the whole lifecycle of products we use - those associated with their manufacture and eventual breakdown. To put it very simply – the more we buy the more emissions will be caused on our behalf.

Carbon Footprint Reduction

Helping you to reduce your footprint

For Individuals

Here's a list of simple things you can do immediately

Turn it off when not in use (lights, television, DVD player, Hi Fi, computer etc. etc. ...) [Click here to find out which electrical items in your household are contribute the most to your Carbon Footprint](#)

Turn down the central heating slightly (try just 1 to 2 degrees C). Just 1 degree will help reduce your heating bill by about 8%.

Turn down the water heating setting (just 2 degrees will make a significant saving)

Check the central heating timer setting - remember there is no point heating the house after you have left for work

Fill your dish washer and washing machine with a full load - this will save you water, electricity, and washing powder

Fill the kettle with only as much water as you need

Do your weekly shopping in a single trip
Hang out the washing to dry rather than tumble drying it

The following is a list of items that may take an initial investment, but should pay for themselves over the course of 1-4 years through savings on your energy bills.

Fit energy saving [light bulbs](#)

Install thermostatic valves on your radiators

Insulate your hot water tank, your [loft](#) and your [walls](#)

Installing [cavity wall installation](#)

By installing 180mm thick [loft insulation](#)

Recycle your [grey water](#)

Replace your old fridge / freezer (if it is over 15 years old), with a new one with energy efficiency rating of "A"

Replace your old boiler with a new energy efficient condensing boiler

Travel less and travel more carbon footprint friendly.

Car share to work, or for the kids school run

Use the bus or a train rather than your car

For short journeys either walk or cycle

Try to reduce the number of flights you take

See if your employer will allow you to work from home one day a week

Next time you replace your car - check out diesel engines. With one of these you can even make your own Biodiesel fuel. [Find out more about Biodiesel.](#)

When staying in a hotel - turn the lights and air-conditioning off when you leave your hotel room, and ask for your room towels to be washed every other day, rather than every day

As well as your primary carbon footprint, there is also a secondary footprint that you cause through your buying habits.

Don't buy bottled water if your tap water is safe to drink

Buy local fruit and vegetables, or even try growing your own

Buy foods that are in season locally

Don't buy fresh fruit and vegetables which are out of season, they may have been flown in

Reduce your consumption of meat

Try to only buy products made close to home (look out and avoid items that are made in the distant lands)

Buy organic produce

Don't buy over packaged products

[Recycle](#) as much as possible

Think carefully about the type of activities you do in your spare time. Do any of these cause an increase in carbon emissions? e.g. Saunas, Health clubs, restaurants and pubs, go-karting etc. etc...