Becoming Carbon Neutral

You can't open a newspaper these days without reading about climate change and greenhouse-gas emissions. And indeed, governments, organizations, businesses and individuals are all looking to reduce their "carbon footprint"-the total amount of carbon dioxide (CO2) and other greenhouse gases emitted over the life cycle of the products, goods and services that we use. Most emissions originate with the burning of fossil fuels. Activities such as driving your car, travelling by plane or bus, burning fuel to heat or cool a building or produce electricity, and manufacturing goods all create heat-trapping carbon emissions.

Quick Start

The tourism industry is both a vector and a victim of climate change. For a quick study of the issues in play, check out the Icarus Foundation and the United Nations World Tourism Organization Davos Conference Declaration on Climate Change and Tourism.

Case Study: A Greener River Runs Through It

Each year, nearly four million people visit The Forks, a bustling stretch of restaurants, shops and sights along the riverfront in downtown Winnipeg, MB. The guests create a significant footprint-from traffic, energy used to heat and cool buildings, water for toilets, landscaping, food services and garbage. The district hopes to reduce its carbon emissions as close to zero as possible by the year 2010-an initiative the group calls "Target Zero." Listed here is a handful of the actions and strategies already underway:

- Explore feasibility of converting used oil from restaurants' deep fryers to biodiesel to power tractors and other equipment at The Forks.
- Utilize wind energy. A meteorological tower presently measures the amount of wind that could potentially be captured. If the resource proves reliable enough, The Forks will erect the first urban wind turbine in Manitoba.
- Compost all types of organic materials: grass clippings, leaves, tea bags, fruit rinds, eggshells and much more, and use the resulting soil onsite. The group is also looking to start a composting facility that other nearby businesses and residents could share.
- Explore the possibility of installing cisterns to harvest the water running off The Forks Market roof. This water might then be used to flush toilets or irrigate landscaping.
- Reduce or offset carbon emissions from vehicles driven onsite by improving bicycle infrastructure, encouraging transit and alternate modes of transport, and planting more trees to sequester, or "soak up," the carbon.

Defining "Carbon Neutral"

Becoming carbon neutral means balancing the amount of carbon released to the atmosphere with an equal reduction, or "offsetting," of emissions elsewhere.

A common approach to doing so is to first establish a baseline by **calculating** your emissions, to then **reduce** those emissions as much as possible through efficiency retrofits and upgrades, and finally to balance your remaining emissions by **offsetting**.

Steps to Become Carbon Neutral

Ready to look at what this involves? Read on for suggestions on how to get started.

- Determine Your Carbon Footprint. To reduce or offset your greenhouse gas emissions, you need to know how much carbon is produced by your business and where the emissions originate-you need to establish a baseline. You may wish to focus on one area of your business-such as transportation or heating and cooling-rather than your entire operation. Consider what level of detail and accuracy is appropriate for your business.

How to Calculate Carbon Emissions

This is a brief overview. For a more detailed approach, see Hot Climate, Cool Commerce: A Service Sector Guide to Greenhouse Gas Management, published by the World Resources Institute.

First Step: Gather Data

1- Determine your business activities that produce carbon emissions. These fall into two groups:

   a. Direct emissions: burning fuel to heat or cool buildings, generate electricity, run your business vehicles.

   b. Indirect emissions: purchasing electricity, heat and steam, and travelling or commuting in vehicles that are not owned by your business such as airplanes, trains, buses and employees' cars. This also includes carbon emissions associated with the production and manufacturing of materials you use in your business, such as paper and equipment.

2- Consult utility statements and fuel records to determine how much energy you use in each activity. Finding data for indirect emissions-such as the amount of electricity used when you lease space, or carbon released in the production of raw materials-is more complicated since records are not often easily available.

3- Establish the emissions factor that you will use. For example, to calculate the carbon emissions from transportation, you need to know how many kilograms of carbon dioxide are produced per litre of fuel for air, train, bus or private vehicle kilometres travelled. Check out Environment Canada for emission factors for greenhouse gas sources.

Second Step: Calculate Carbon Emissions

Once you have gathered enough information, plug it into the following simple formula:

Or use one of the many online calculators-there are different calculators for different activities, such as commuting, air travel, heating and so on. Check out various calculators at:

Environment Canada

Tree Canada

The Greenhouse Gas Protocol Initiative.

If your business is large or complex, you may need to hire a consultant to help you calculate your greenhouse-gas emissions.

- Set Your Goal. Now that you have figured out your carbon footprint, you can decide whether you want to become fully carbon neutral, or whether you want to simply reduce the size of your footprint. You might want to identify a certain year by which you will achieve carbon neutrality, or set annual reduction targets.
- Reduce Your Footprint. Once you have a good picture of your emission sources and the scale of your carbon footprint, you'll easily recognize hot spots and reduction opportunities. Typically, you'll find low-hanging fruit in energy consumption, transportation and purchasing.
- Offset a Portion of Your Footprint. Once you have reduced your emissions as much as possible, you can compensate for the remainder either by purchasing carbon offsets or undertaking other activities that will capture carbon.

Purchasing Carbon Offsets

A "carbon credit" represents an offset in greenhouse-gas emissions created by another organization or business that reduces or absorbs an equivalent amount of carbon dioxide.

Carbon is typically measured in metric tonnes of CO2-equivalent (CO2e). They are bought and sold through various international brokers, online providers and trading platforms.

Carbon Offset Projects

There are many different types of carbon-offset projects that providers invest in:

- **Renewable energy**: Displacing fossil fuels with wind, solar, geothermal, small hydro and biomas energy can offset future carbon emissions.
- **Energy efficiency**: Working on optimizing energy use through high-efficiency lighting, retrofits, green buildings, heating and cooling systems, efficient engines, etc.
- **Sequestration**: Increasing carbon sequestration in plants through reforestation and protecting and increasing a forest's capacity, or in soil through zero-tillage farming.
- **Methane capture**: Capturing methane from a landfill, coal mine or agricultural field.

Top Five Tips for Purchasing Carbon Offsets

The global carbon-offsets market-though well developed-remains largely unregulated; questions of transparency and accountability dog the sector. Though third-party certification schemes are emerging, such as The Gold Standard, oversight remains the market's biggest challenge. When choosing among the slew of businesses and non-profit organizations that sell carbon offsets, look for the following:

1. Details on the types of projects and their success in offsetting carbon emissions, backed up with a monitoring and verification process.
2. Emphasis on offset quality.
3. Registration process to verify that the same offset has not been sold multiple times.
4. Investments in public awareness and education campaigns.
5. Benefits that go beyond the reduction of greenhouse-gas emissions, such as energy conservation, biodiversity protection, plus local economic and social development.

Try This!

Check out A Consumer's Guide to Retail Carbon Offsets Providers, published by Clean Air Cool Planet for more information about choosing a provider.