



Taking Carbon Offsets to the Mainstream

March 12, 2007

Jonathan Klein

General Partner

The Topline Strategy Group

www.toplinestrategy.com

jon@toplinestrategy.com

Would you pay a nickel more a gallon for carbon-free gasoline – gasoline that did not emit any carbon dioxide and did not contribute to global warming?

While there is no such thing as carbon-free gas, there is something nearly as good – carbon offsets. Every gallon of gas you use releases 20 pounds of carbon dioxide into the atmosphere¹. Carbon offsets work exactly as their name implies. They offset those 20 pounds of CO₂ by funding projects such as reforestation and wind power that eliminate an equal amount of carbon emissions. Today, it costs less than a nickel to buy a carbon offset for a gallon of gasoline², giving people the option of effectively purchasing global warming-free gas. Carbon offsets can also be used to make other products effectively carbon free as well. It costs under half a cent to offset a kilowatt-hour of electricity³ (under 4% of the average price⁴) and under a penny to offset a cup of Starbucks coffee (accounting for the energy to transport the beans and heat the water).

Unfortunately, few carbon offsets are actually sold today. The reason is not that consumers are unwilling to pay a small premium to help the environment. In fact, the evidence suggests that many people will. In 2005, 455,500 U.S. households elected to pay a premium reaching as high as two and a half cents per kilowatt for electricity generated from renewable sources, up 26% over 2004⁵. In 2006, Americans snapped up 254,000 hybrid cars, up 28% over 2005⁶, despite the fact that most hybrid drivers would never make up for their extra cost to buy the vehicle in gas savings. Finally, Americans give billions of dollars a year to green philanthropies⁷.

The reason that few carbon offsets are sold today is *how carbon offsets are being marketed and sold*.

Marketing and Selling New Technologies

While a carbon offset is not a new technology the same way that a cell phone or the Internet is a new technology, it does qualify as a new technology from a marketing and sales point of view. It is a complicated new offering that people know little about, and it has uncertain benefits. Therefore, carbon offsets will go through a technology adoption cycle the same way that cell phones and the Internet did when they were first introduced. Today, carbon offsets are still firmly entrenched in the early adopter phase of the adoption cycle. The early adopters, the people who buy a new technology first, are different from the rest of us. They are intrinsically attracted to the new technology and are willing to go through extraordinary efforts and pay a high price to be the first ones to have it. Unfortunately for companies offering new technologies, there are only a few early adopters in any given market. For technologies to really take off, they must appeal to the rest of us – the mainstream buyers.

Since the computer revolution began three decades ago, high tech companies have learned a lot about how to drive new technologies into the mainstream. These lessons can be distilled down to the following two rules:

1. *Develop products whose total costs are lower than their perceived value for mainstream buyers*

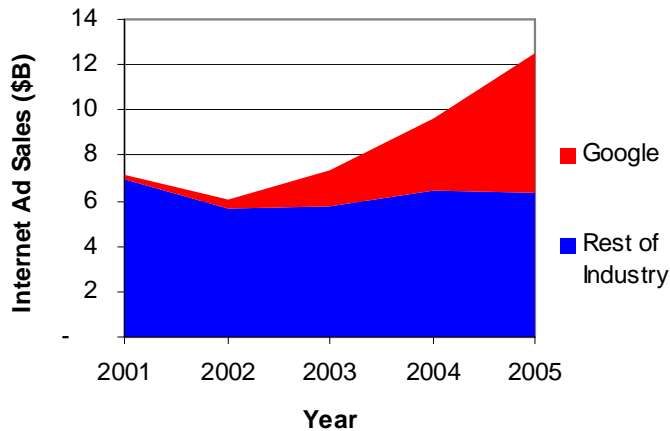
When mainstream buyers consider the cost-benefit of a new technology, they consider far more than just its price. They see a wide range of hidden costs and risks such as the time spent learning about the technology and how to use it, the forgone benefits of the alternative uses of their time and money, and the risk that the product will not deliver the value expected. Technologies really take off only after companies address these costs and risks and deliver an offering whose total costs are lower than its perceived value from the mainstream's point of view.

2. *Create marketing leverage*

Getting total costs below the perceived value is necessary but not sufficient to get products into the mainstream. Companies still face the hurdle of generating awareness and educating the market. For complex new technologies, it is impossible to do this through advertising, personal selling, or any other approach that is built around communicating to customers one by one. There simply isn't enough time or money. Successful companies find ways to create marketing leverage that multiplies their efforts by a factor of 10, 100 or even 1000.

Google is a textbook case of a company that successfully leveraged these two rules and achieved mainstream adoption at an extraordinary rate. First, Google changed the total cost equation for online advertising by introducing text ads and a simple online tool for placing them. Prior to Google, Internet advertising was dominated by banner ads paid for on a cost-per-impression basis. They required a designer to create the ad and a media planner to place it, making the entry costs prohibitive and restricting the market to large advertisers. With Google, practically anyone could design and place an ad in just a few minutes. And, they could get started with a budget as small as just a few dollars per day. This created a total cost-value equation that was favorable for the mainstream. Second, Google generated enormous success and word of mouth on the search side of the business that translated into incredible marketing leverage on the advertising side. Every time a user searched Google and saw the text results, they were exposed to the key word text ads that appeared on the right side of every page. Naturally, as potential advertisers repeatedly saw these ads, they started to think, "We could probably do that too." As a result, the company was able to generate awareness and educate the market with virtually no sales or marketing expenditures. The impact of Google on the online advertising industry could not be more profound. As the chart below shows, Google has single-handedly been responsible for nearly all of the growth in Internet advertising since 2002.

Internet Advertising Revenues by Year⁸



Accelerating Carbon Offsets into the Mainstream

Until recently, the only way consumers could buy carbon offsets was online, through companies such as Carbonfund and Terrapass. The following graphic from Carbonfund.org's website provides a good example of the purchase process. Users come to the site, select a package based on how much of their personal emissions they are seeking to offset, and then purchase it online. They then get a certificate documenting their purchase.

Graphic from the Home Page of www.carbonfund.org

FIGHT GLOBAL WARMING!
Contribute Now and Reduce CO₂ Emissions. Select an option:

Car Individual Individual Zero Carbon Family Zero Carbon

We love our cars. We live in our cars. But our cars pollute, a lot, and are a major source of carbon dioxide emissions causing global warming. The average car emits twice its weight in CO₂ each year. Offset it today!

Green	Efficient	Full-Size	SUV/Mega
(41+ mpg)	(29-40 mpg)	(19-28 mpg)	(10-18 mpg)
\$14.96/yr	\$19.91/yr	\$29.92/yr	\$49.89/yr
6,000 lbs CO ₂	8,000 lbs CO ₂	12,000 lbs CO ₂	20,000 lbs CO ₂

Unfortunately, web sales falls far short of what it would take to push carbon offsets into the mainstream.

- **Price Level:** Even at prices as low as \$15, the price is still high enough to trigger consumers to consider the alternative uses for their money.
- **Search Costs:** Online purchases of carbon offsets involve considerable search costs for the consumer. They need to fire up the computer, find the site, select among different vendors, and make the purchase.

- **Perceived Value:** The purchase of the offset is completely disconnected from the actions that lead to carbon emissions. The further the purchase is separated from the action, the less value consumers will place on the offset.
- **Marketing Leverage:** It provides minimal marketing leverage. Every sale is independent of every other.

Our analysis suggests that to reach the mainstream, a carbon offset offering would need to meet the following four criteria:

1. It would be priced at the level of an impulse purchase. There is a good reason why the price of most of the items stacked up at the checkout counter of a supermarket ranges from under a dollar to two to three dollars. At those price levels, consumers just pick them up off the shelf without really thinking about the money they are spending.
2. It would be readily available for sale at places where the consumer already shopped, minimizing search costs.
3. The point of sale would be at a location that was closely tied to consumer activities that led to greenhouse gas emissions, creating more value by connecting the offset purchase to the problem.
4. The offset sales process would create awareness and encourage conversation among consumers about offsets, generating enormous marketing leverage.

Recently, companies have started to package and sell carbon offsets in new ways that are moving them closer to the mainstream. Some Whole Foods stores are offering \$5 or \$15 “wind power cards” whose proceeds go to support wind farms, Bank of America has announced that it will be offering a green credit card where for every dollar spent, the bank will make a contribution to an organization that invests in reducing greenhouse gas emissions, and both Expedia and Travelocity provide consumers the option of buying an offset to offset the carbon emissions of their flights ranging in price from \$6 to \$40. As the chart below shows, while all of these offerings are improvements over web sales, none meet all four of the criteria required for rapid adoption.

Analysis of Mainstream Readiness of Emerging Carbon Offset Offerings

Adoption Factor	Website	Whole Foods Wind Power Card	Green Credit Card	Travelocity/ Expedia
1. Impulse Price Point	No	No	Yes/No*	No
2. At Point of Purchase	No	Yes	Yes/No*	Yes
3. Tied to Emissions	No	No	No	Yes
4. Marketing Leverage	No	Some**	No	No

*Once a user has chosen to use a green credit card, the effective cost of using it for a purchase is essentially zero and it is available at the point of purchase. However, the process of switching cards and cost of forgoing the rewards points, cash back or mileage consumers are accustomed to receiving from their credit card would likely place a large drag on the adoption.

**Since Whole Foods makes “wind power cards” available at the point of purchase, there is the opportunity for some marketing leverage. Consumers may read the card while they are waiting in line and may observe other customers purchasing one.

A Call to Action – A Mainstream-ready Carbon Offset Offering

Given that there is currently no carbon offset offering on the market that meets all four adoption criteria, that means that there is an opportunity for companies to leapfrog the existing products with one that does. We'd like to suggest one idea: Green Gas Pumps.

In the simplest terms, a Green Gas Pump would be a pump at an existing gas station that built the carbon offset purchase directly into the price of the gasoline by charging five cents more per gallon than the other pumps at the station. The Green Gas Pump would need to be prominently branded as such and would have to be supported with point of sale materials that explained the offset. In this case, materials would explain how the extra per gallon charge went to fund reductions in greenhouse gas emissions that exactly offset the carbon dioxide released by the gas just purchased, effectively making the consumer's gasoline purchase global warming neutral. Here is how this offering stacks up against the four criteria:

1. **Impulse Price Point:** At five cents a gallon, carbon offsets for a 15 gallon fill up would only cost \$.75. Even accounting for distribution costs equal to 100% of the cost of the offset, the retail price would still be only \$1.50, well within the impulse purchase range.
2. **Point of Purchase:** By building the cost of the offset directly into the price of gas, the purchase of the offset is completely integrated into the consumer's current purchase process.
3. **Tied to Emissions:** Purchasing gas is probably the single most direct connection most people have to emitting greenhouse gases. There is probably no other time when they will perceive the value of the offset as keenly as when they are at the gas station.
4. **Marketing Leverage:** Every time someone drives into a gas station and sees another driver filling up at a clearly branded Green Gas Pump, they would immediately become aware that other people are buying this product. As they stood nearby at the next pump filling their tank, they would inevitably be drawn into conversations about what exactly a Green Gas Pump was, providing enormous marketing leverage.

While Green Gas Pumps do meet all of the criteria of for achieving mainstream adoption, it is just one of many possible methods. We call on organizations to take the challenge and bring to market a carbon offset program that rapidly reaches the mainstream.

¹ Green University, LLC, http://www.greenuniversity.net/Green_Economics/carbondioxide.htm, March 7, 2007

² The contract price for one metric ton of carbon dioxide vintage 2007 closed at \$3.95 on March 7, 2007 on the Chicago Climate Exchange (www.chicagoclimateexchange.com). That translates to \$.035 per gallon of gas (\$3.95 per metric ton/2,240 lbs per metric ton*19.8 lbs/gallon).

³ In 1999, the average amount of carbon dioxide emitted per kilowatt-hour of electricity generated from coal was 2.1 lbs. (Carbon Dioxide Emissions from the Generation of Electric Power in the United States, US Department of Energy, July 2000, Page 2, <http://tonto.eia.doe.gov/FTP/ROOT/environment/co2emiss00.pdf>). That translates to \$.0037 per kilowatt-hour generated.

⁴ At .37 cents per kilowatt hour, a carbon offset costs 3.5% of the average US residential price of electricity in 2006 of 10.47 cents/kilowatt-hour (The Public Policy Institute of New York State, <http://www.ppinys.org/reports/jtf/electricprices.html>, March 7, 2006).

⁵ Trends in Utility Green Pricing Programs (2005), National Renewable Energy Labs (www.eere.energy.gov/greenpower/resources/pdfs/40777.pdf)

⁶ Hybrid-car sales growth slowed in 2006, Associated Press, February 26, 2007

⁷ Topline identified \$994 million in donations from four organizations – The Nature Conservancy, The World Wildlife Fund, Sierra Club, and the NRDC.

⁸ Hoovers, Internet Advertising Bureau