

CREATING CARBON OFFSETS:  
A NEW ALTERNATIVE FOR COLLEGES AND UNIVERSITIES?

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## I. Introduction

In 2002, as awareness of climate change began to increase, British alternative rock band Coldplay chose to use carbon offsets to minimize the environmental damage caused by the release of their hit album *Rush of Blood to the Head* (Dhillon and Harnden, 2006). Carbon offsets are intangible economic commodities that represent the avoidance or sequestration of greenhouse gas emissions (Gillenwater et al., 2007). They are derived from low-carbon energy production, energy efficiency measures, greenhouse gas (GHGs) destruction, soil carbon enhancement and tree planting. Coldplay chose the latter, paying a company called Future Forests to plant 10,000 mango trees in southern India in order to soak up carbon dioxide emissions and improve the livelihoods of local farmers. Since the geographic source of GHG emissions is irrelevant to their climate change impact, emissions reductions can be traded globally. Unfortunately, within four years over 40 percent of the saplings had died, eliminating the reduction in GHG emissions and preventing benefits to the farmers.

The now infamous “Coldplay Forest” has become a hallmark example in debates over the validity of carbon<sup>1</sup> offsets as part of the solution to climate change. Carbon offsets were originally conceived to yield greenhouse gas reductions in an economically efficient manner while providing social and environmental co-benefits<sup>2</sup> (Kollmuss et al., 2008). However, just as Coldplay’s trees failed to provide the

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<sup>1</sup> Although carbon dioxide is the main anthropogenic greenhouse gas, it is not the only one and so to refer to offsets as solely reducing carbon is technically incorrect. However, colloquially, a reduction in greenhouse gas emissions is known as a ‘carbon’ offset and so I will refer to them as such. However, when referring to tons of GHGs reduced, I will use the international reporting standard Metric Tons of Carbon Dioxide Equivalent (MTCO<sub>2e</sub>).

<sup>2</sup> The term co-benefits is utilized within the carbon offset market to signify benefits that are additional to the reduction in greenhouse gases.

promised greenhouse gas reduction and social co-benefits, so too has the broader carbon market.

Recent research has shown that a significant number of carbon offsets do not reduce additional greenhouse gases or provide co-benefits, sparking widespread criticism. One of the most widely known critiques is from a satirical website called CheatNeutral.com which promises to “offset any unavoidable cheating by funding someone else to be faithful and NOT cheat” (Randall and Hunt, 2007). Though humorous in nature, CheatNeutral points to a series of similarities between carbon offsets, a market-based solution to climate change, and CheatNeutral, a mock market solution to cheating. The website explains that just as CheatNeutral makes it seem acceptable to cheat, carbon offsetting makes it acceptable for the industrialized world to continue emitting excess carbon while doing very little to reduce national emissions. With evidence emerging that eight million allowances from the EU’s Emissions Trading Scheme (EU ETS) had been double counted<sup>3</sup>, members of the British Parliament discussed CheatNeutral as an accurate parody of carbon offsets (Murray, 2007). More recently, similar discussions over the problems of carbon offsets have occurred in the United States, prompting organizations ranging from Yahoo to the U.S. House of Representatives to cancel their offset-purchase programs, concluding that the money is better spent improving their buildings’ energy efficiency.

Even as the controversy over carbon offsets has increased, purchases have grown exponentially, with scholars and policy-makers alike promoting offsets as an

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<sup>3</sup> Double counting describes a scenario when an offset is sold more than once and benefits are afforded to multiple purchasers.

economically efficient solution to the climate crisis (Sweet, 2009; Kollmuss et al., 2008). As Robert Frank, a Cornell University economist wrote in a New York Times editorial, “If our goal is to reduce carbon emissions as efficiently as possible, offsets make perfect economic sense” (Frank, 2009). Frank explains that with high-standard certification programs in place, there is “no reason that fraud should be harder to curb in carbon-offset markets than in other domains.” Many scholars agree with this economic rationale, arguing that it makes no sense for an individual or country to spend thousands of dollars reducing their own emissions when they could reduce the same amount of carbon at a far lower cost by purchasing offsets (Gillenwater et al., 2007; Taiyab, 2006; Kollmuss et al., 2008).

In the shadow of this debate are 680 colleges and universities that have pledged to become carbon neutral through the American College and University Presidents Climate Commitment (ACUPCC). The ACUPCC was launched in 2007 and currently represents close to one third of the U.S. higher education student population (Klien, 2010). Unfortunately, signatories of ACUPCC are finding themselves in a predicament. In order to reach carbon neutrality within their self-determined timeline, the majority will have to utilize carbon offsets. However, a recent report showed that given the current level of controversy, many presidents and chancellors are hesitant to invest in the carbon offset market (Kinsley and DeLeon, 2009). As a potential solution, a few colleges and universities have begun experimenting with a new kind of offset: instead of purchasing offsets from unknown companies and places, they are sponsoring carbon reduction projects in their local communities.

In order to determine if these local projects could be considered offsets and evaluate their potential for addressing the critiques associated with traditional offsets, I conducted a series of phone interviews with students, faculty and staff at ten different institutions of higher education implementing such projects. Since carbon offsets were originally envisioned as an economically efficient solution that would provide social co-benefits alongside the reduction in greenhouse gases, I chose to evaluate both traditional market and local offset projects with regard to their economic, social and environmental benefits.

I begin my analysis with a comprehensive overview on the evolution and controversies of carbon offset markets. The objective is to familiarize the reader with the fragmented carbon offset world and synthesize the scholarly debate. Next, I utilize case studies from colleges and universities engaged in local offset projects throughout the country to present a thorough overview of the varied types of projects, benefits and challenges. Finally, I will compare local and traditional offsets while providing recommendations for institutions of higher education.

I find that local offsets provide far greater social benefits to the target community, have higher educational benefits for both students and community members, are less prone to perverse economic incentives due to their lack of tradability, incentivize investment through increased tangibility, and provoke a strong sense of responsibility from project developers. At the same time, local offsets are far more time-consuming, expensive and difficult to verify, and therefore should only be undertaken by institutions firmly committed to their project. While local carbon offsets are not the silver bullet solution to climate change, they hold potential and merit further research.

I strongly recommend the development of a standard focused specifically on developing best practices, such as pre-project community consultations, and helping institutions overcome the high cost of local offset verification.

## **II. The Traditional Market**

Before examining the controversial world of carbon offsets, it is important to note the urgency in the debate over their validity as an approach to addressing climate change. Despite the recent media storm over climate science, 97 percent of climatologists believe that human activity is a significant factor in changing global temperatures (Doran and Kendall, 2009). The world is already feeling the effects of climate change and, according to most scientists, these effects will only intensify unless greenhouse gas emissions are immediately reduced (Carlson, 2008). The disasters predicted include sea level rise, heat waves, droughts, wildfires, snowmelt, flood risk, public health threats and increased rates of plant and animal species extinctions. Many of these predicted effects will most severely impact developing countries (Union of Concerned Scientists, 2008).

These high stakes have provoked a vast number of scholarly contributions and opinions. I will simplify this large body of research by breaking it down into the issue-areas that carbon offsets claim to address: economic, social and environmental. For each category, I will analyze key issues on both sides of the debate. However, before delving into the debates, I will provide a brief overview of the current market for carbon offsets.

## Market Overview

Carbon offsetting is an increasingly popular means of taking action on climate change. Despite a worldwide recession, the global market for carbon offsets grew in 2009 by 68 percent to 8.2<sup>4</sup> billion metric tons (Sweet, 2009). It is becoming more common for individuals to offset their travel emissions and for companies to buy large quantities of offsets in order to claim carbon neutrality (Kollmuss, 2008). Currently, carbon offset markets exist under both compliance schemes and voluntary programs. Compliance markets are created and regulated by mandatory regional, national, and international carbon reduction schemes, such as the Kyoto Protocol's Clean Development Mechanism and the European Union's Emissions Trading Scheme (EU-ETS). The voluntary offset market is just as it sounds—a market for individuals and companies to purchase offsets of their own free will. Although the voluntary market is much smaller than the compliance market, it is growing rapidly (Hamilton, 2007).

Although both carbon markets continue to grow, the prices of offsets have sharply decreased. Since the price of carbon offsets is largely speculative, buyers' changing perceptions of their worth can cause prices to deviate greatly from their original value. The economic recession is certainly to blame for part of the decrease in offset prices, but other factors are also at play. A lack of certainty regarding future regulation has kept the offset market from reaching the tenfold growth predicted for 2010 (Gillenwater et al., 2007). Stalled national legislation, particularly in the U.S. Senate, and the failure of world leaders to reach a binding agreement on climate

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<sup>4</sup> According to the U.S. Environmental Protection Agency Greenhouse Gas Equivalency Calculator, 8.2 billion metric tons of carbon equivalent is equal to the annual CO<sub>2</sub> emissions of 1,932 coal plants or the carbon sequestered annually by 70,591,332 acres of forest preserved from deforestation

change in Copenhagen has made offset project developers and traders rethink their earlier enthusiasm for carbon markets (Gronewold, 2010).

Rising skepticism of carbon offsets has also contributed to the drop in prices. American companies in particular are shying away from offsets, often in favor of direct renewable energy purchases (Gronewold, 2010). American, Australian and Japanese governments are particularly wary of imitating the European Emission Trading System (EU-ETS) reliance on international offsets, as the system has been widely recognized as a failure (Prins and Rayner, 2007). As the British House of Commons Environmental Audit Committee reported, “the first phase of EU ETS could not be shown to have produced any real-world reduction in CO<sub>2</sub> at all” (Prins and Rayner, 2007, 4). While the failure of the largest trading scheme in the world certainly begs the question of how offsets can produce meaningful carbon reductions, it also invites discussions of how carbon offset markets might be redesigned.

As a nascent consumer product, carbon offsets vary widely in type, regulation, and geographic focus. The two largest regulated markets in the world are the Clean Development Mechanism and EU-ETS. The Clean Development Mechanism (CDM) was developed in 2000 as one of three “flexibility” mechanisms added to the Kyoto Protocol to allow Annex I (industrialized) countries to meet their emissions targets by purchasing reductions from elsewhere. The Clean Development Mechanism was created to help developing countries achieve sustainable development and thus has a distinctive transaction process. In order to implement CDM, a contract is negotiated between the host country and the investor country. A third party (currently the United Nations Framework Convention on Climate Change) then validates the emissions

reductions. This process is both expensive and lengthy, two major critiques of CDM (Larson et al. 2007).

The European Union Emissions Trading Scheme (EU-ETS) began operating in 2005. It requires large emitters of carbon dioxide within the EU to monitor, report and reduce their emissions by differing percentages. While the first phase, from 2005-2007, is widely considered a failure, the EU has proclaimed it a “learning phase” because they have already corrected much of the over-allocation of credits in the second phase (2008-2012). Nevertheless, the second phase is still criticized, principally for its heavy reliance on offsets through the CDM as opposed to internal reductions (Prins and Rayner, 2007).

Countries and individuals not regulated under an emissions trading scheme can purchase their offsets through the rapidly expanding voluntary market. As the number of voluntary carbon offset providers has grown, the risk of fraud has also increased, particularly if the project is in a remote location or if the provider is not transparent about their process for judging the quality of the project (Taiyab, 2006). In order to combat this fraud, carbon market actors and environmental NGOs have developed and deployed over a dozen standards.<sup>5</sup> As Kollmuss (2008) notes, many of the standards represent a step in the right direction since they “address some of the weaknesses in the current offsetting process and foster climate mitigation projects”(ix). However, many scholars take a less positive view of the multitude and variety of standards, noting that the confusion produced by a host of independent standards has the potential to discredit carbon offsets with the public (Gillenwater et

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<sup>5</sup> While there are many active standards, major ones include The Gold Standard, Voluntary Carbon Standard, Climate, Community and Biodiversity Standard (CCBS) and the Plan Vivo System.

al., 2007, 86). Gillenwater (2007) also casts doubt on the whether any of the current standards will gain market acceptance or have the ability to police the practices of market participants.

### **Economic Analysis of Offsets**

Despite much of the growing disillusionment with carbon offsets and the confusion in the nascent market, economists have heralded the development of carbon markets as the most important economic initiative related to climate change (Grist, 2008; Kollmuss et al., 2008). They consider markets to be a cost-effective way of achieving policy goals and believe that market mechanisms are the only way to achieve significant carbon reductions due to the scale and complexity of greenhouse gas emissions (Grist, 2008; Krugman, 2010; Harris and Codur, 2004 a,b, 2005; Stavins and Whitehead, 1997).

Some scholars argue that carbon markets are not necessary, as the problem is energy provision and can be addressed by energy efficiency measures (Hoffert et al., 2002). This belief underlies the approach historically taken by the U.S. government<sup>6</sup> (Grist, 2008). However, as demonstrated in a Swedish study<sup>7</sup>, green consumption patterns produce only small and temporary reductions in carbon emissions due to the cumulative effect of rising consumption patterns (Alfredsson, 2004). Without wider limits on carbon emissions, energy efficiency or changes in consumption are not effective in abating climate change (Grist, 2008).

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<sup>6</sup> The US government refused to sign The Kyoto Protocol, but initiated the Energy Star Initiative to protect the environment through the voluntary purchase of energy efficient products.

<sup>7</sup> The study required extreme behavioral changes and utilized the most energy efficient technologies possible in the areas of housing, travel and food

Critics of market environmentalism argue that carbon offsets are equivalent to ‘environmental indulgences’ or ‘pardons’ that absolve the purchaser of the need for behavioral change (Goodin, 1994; Kollmuss and Boswell, 2007). Krugman (2010) notes that while moral concerns are often raised against market-based emission controls by those who believe pollution should be treated as a crime, it is more effective to discourage negative externalities than to prohibit them.<sup>8</sup> Other scholars have echoed this belief, arguing that the market is the most important and efficient mechanism for mediating relationships between people and regulating their interactions with the environment (Adams, 2001, 104; Abildtrup et al., 2006).

Taiyab (2006) argues that the primary role of carbon offsets to lower the cost of greenhouse gas reduction for nations and firms. The strongest arguments against taking action on climate change have traditionally been economic, with opponents arguing that the emission reductions will reduce firms’ international competitiveness. Taiyab theorizes that companies (or countries) who achieve or exceed their targets through internal reductions can profit by selling their excess allowances while companies for whom internal reductions is prohibitively expensive can purchase allowances on the market, thereby reducing the cost of reduction for all firms and nations (Taiyab, 2006).

In countries without limitations on carbon emissions, such as the United States, anticipation of future regulation is a motivator for firms to purchase voluntary offsets (Taiyab, 2006). The purchase of offsets for pre-compliance purposes is done with the expectation that future mandatory cap and trade regulations will increase the price.

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<sup>8</sup> Krugman compares the rules made on negative externalities such as smog in the 1970s and acid rain in the 1980s and finds that the market-based controls employed in the regulation of the Clean Air Act were more effective because they allowed for greater creativity and flexibility

However, given the lack of certainty regarding future regulation and rising skepticism of carbon offsets, pre-compliance purchasing is less of a motivator.

While some scholars theorize broadly to both the regulated and the voluntary offset market, others argue that the motivations differ greatly between the two markets. Wara and Victor (2008) contend that CDM is a mechanism to engage developing countries in serious efforts to limit emissions by promising financial and technical incentives. At the same time, CDM engages industrialized countries with an efficient and cost-effective market for tradable permits because clean energy projects can occur where they are least expensive (Karp et al., 2000). Thus, the majority of offsets in the regulated market contain the dual goal of sustainable development and limiting the cost of compliance under the Kyoto Protocol. However, as Wara and Victor (2008) point out in their evaluation of CDM, the quality of offsets vary greatly by provider,

*“The theoretical benefits of lower costs and broader engagement of developing countries through the extensive use of offsets are an illusion. They are based on the assumption that it is possible to administer an offsets system so that it rewards only bona fide reductions. This assumption is valid for only a fraction of the real offsets market” (8).*

One of the major problems with both carbon offset markets is perverse economic incentives that reward less than “bona fide reductions.” These incentives affect everything from the way projects are registered to the price of the offsets. Wara and Victor (2008) use the early history of CDM<sup>9</sup> to illustrate these negative incentives at work. The majority of the first Certified Emissions Reductions (CERs) under the early stages of CDM were for projects that reduced trifluoromethane or HFC-23, a

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<sup>9</sup> Most of the academic research on negative market incentives has focused on CDM since it is larger and more easily quantifiable than the voluntary market

gas produced in manufacturing air conditioners. HFC-23 is 11,700 times more potent a greenhouse gas than CO<sub>2</sub>, so projects that reduce HFC-23 are extremely valuable and far more cost competitive than carbon reduction projects. Consequently, CDM credits made capturing HFC-23 more valuable than the production of the refrigerant gas that creates it. As a result, there was a strong incentive for manufacturers to produce more HFC-23 simply for the carbon offsets, even though there was limited demand for the refrigerant gas itself (Wara and Victor, 2008, 11).

Consequently, the excess of cheap carbon offsets flooded the market and made higher-benefit projects—such as ones that transfer renewable energy technology—unviable. Taiyab (2006) notes that the trade-offs between profit maximization by investors and the sustainable development objectives of CDM have led to a high volume of projects that lack a developmental impact. Despite the efforts of the CDM Executive Board to correct this market failure, projects that provide renewable energy technology or infrastructure continue to be less financially viable. Gillenwater (2007) argues that these failures are to be expected, because environmental commodity markets are “inherently more susceptible to market failures than traditional markets because the commodity transacted is both intangible and represents a public good” (Gillenwater et al., 2007, 86).

The intangibility of carbon offsets has led to the most vexing market failure, the problem of additionality, or deviation from business as usual. The crucial question in determining additionality is whether the carbon offset revenue enables the project to happen or whether it would have happened anyway and the money is an unnecessary bonus (Gillenwater et al., 2007). Additionality is nearly impossible to

quantify because it relies on a prediction of the business-as-usual scenario while deviating from it, essentially predicting the future. Currently, different standards employ different additionality criteria because there is no central authority to manage additionality in the voluntary offset market. According to Kollmuss (2008), “the topic of additionality is the most fundamental and most contentious issue in the carbon offset market” (15). Research has shown that even in regulated markets such as CDM and EU-ETS, a significant number of offsets come from projects that would have been implemented anyway (Schneider, 2007; Haya, 2007). Since a large number of projects are certified without being additional, the carbon offsets issued for these projects are effectively worthless because they are subsidizing a project that would have already happened and provide no additional reduction in greenhouse gases (Kollmuss et al., 2008).

The CDM Executive Board and many voluntary offset providers rely on third party verifiers to certify that the project truly reduces greenhouse gas emissions and meets additionality criteria. Wara and Victor (2008) argue that because project developers pay third party verifiers, there is a strong incentive for verifiers to certify projects that do not meet CDM criteria. Furthermore, they note that verifiers face “an increasingly competitive market for their services, with severe downward pressure on price and few effective controls on quality” which further encourages them to verify projects so as to encourage repeat business (19). At the same time, host governments and investors have no incentive to contradict the verifiers as their revenue increases with the number of certified projects.

Offsets are often more economically efficient than other types of reductions and are clearly more than ‘environmental indulgences.’ They have the potential to counter the strongest arguments against climate action—that of cost and developing country participation—by directing energy projects that transfer financial and technological gains to developing countries where they are cheaper. In practice, this is an illusion, as the structure of the carbon offset market rewards large-scale, low-benefit projects and incentivizes little quality control. The intangible nature of offsets has led to a large number of non-additional carbon offsets that do not represent an additional reduction in greenhouse gases.

### **Social Analysis of Offsets**

Butzengeiger (2005) argues that the primary drivers for the voluntary market are moral responsibility and economic benefits provided by a moralistic appearance. She believes that buyers want to feel as though their offset is making a social impact; whether in promoting global fairness, showing responsibility for future generations, or making a contribution to a more sustainable economy or lifestyle. Whereas Taiyab (2006) argues that the primary economic incentive of carbon offsets is cost-effectiveness, Butzengeiger points to the reputational and marketing effects of offsets as major drivers in the voluntary market. As such, purchasing carbon offsets is less like buying a product and more similar to giving to a cause (Taiyab, 2006). Butzengeiger notes that companies often use offsets as compensation for activities that have given them a negative public image. Evidently, the economic incentive of carbon offsets does not only stem from the offsets themselves but also from the marketable connotations the offsets bring to the purchaser.

While the marketing effects of offsets do serve as strong incentives for their purchase, it is problematic when offset providers seek to maximize this effect by spending a high percentage of revenue on marketing and administrative costs rather than the project itself. Although this problem exists to some extent in CDM, it is even more prevalent in the voluntary market. Taiyab (2006) finds that the market incentivizes for-profit offset providers to maximize revenues and minimize costs, compelling them to charge the highest possible price for offsets while spending as little as possible on the projects themselves (14).

As noted earlier, the carbon offset market tends to favor large projects with few benefits to local communities. According to Taiyab (2006), the voluntary market has a much greater ability to invest in small-scale projects with high sustainable development benefits because project developers can avoid the bureaucratic procedures and high transaction costs associated with CDM. However, these small-scale projects with direct benefits, such as energy efficient stoves in rural villages, are much more difficult and expensive to monitor. As a result, even the project developers most likely to invest in small-scale projects—voluntary offset providers—are dissuaded from doing so due to the prohibitive cost and risk.

This lack of sustainable development benefits in both the compliance and voluntary market has led Eraker (2000) to protest that the offset market is a form of “carbon colonialism” that allows wealthier nations or individuals to perpetuate unsustainable lifestyles by funding carbon projects in developing countries or in lower-income communities that provide little benefits for the host community. Other scholars have protested that it is a way for developed nations to “foist neoliberal

economic ideas upon the developing world” as “emissions trading embodies the characteristics of Western rationality: efficiency, reductionism, selectionism (survival of the fittest) and quantification” (Richman, 2003, 159).

Unfortunately, it appears that these critiques are only coming closer to the truth. Kollmuss et al. (2008) finds a disturbing trend in the offset industry of differentiation between ‘gourmet offsets’ and ‘minimum standard offsets’ (28). Minimum standard offsets are non-double counted additional offsets whereas gourmet offsets have strong social and environmental benefits and fetch a much higher price in the voluntary offset market. Kollmuss notes that this distinction in both the voluntary and compliance market signifies that the definition of carbon offsets have changed:

*“The distinction between ‘minimum standard’ and ‘gourmet’ offsets is to some extent a useful shorthand, yet it also reveals that sustainability and development benefits are no longer seen as an integral requirement for a carbon offset. Yet the carbon offset mechanism was originally conceived as a mechanism that would not only yield climate benefits but also include co-benefits” (28).*

Although carbon offsets were conceived with the idea of benefiting both people and the planet, this definition has changed in favor of cheaper, ‘minimum standard offsets’ that have few social benefits. While an outcome that favors profit maximization over small-scale high-benefit projects might seem predictable to critics of market environmentalism, it is clearly not the type of offset that many investors are looking for, particularly in the voluntary market. The absence of social benefits is particularly troubling for socially conscious colleges and universities hoping to make a positive impact with their offset purchases.

## Environmental Analysis of Offsets

Kollmuss et. al (2008) views carbon offsets as a last resort, believing that carbon offsets should be purchased only after organizations or individuals have lowered their carbon footprint by improving energy efficiency, relying on lower-emissions products, and changing consumption patterns. . Polk (2008) agrees, but notes, that a combination of internal emissions reductions and off-site reductions (offsets) is most likely needed for an entity to reduce its greenhouse gas emissions to net zero in order to be considered ‘carbon neutral’ (10).

Many scholars find the labels of ‘carbon neutral’ or ‘climate neutral’ to be irrelevant if no drop in consumption occurs alongside the purchase of offsets (Taiyab, 2006; Rouse, 2007; Kollmuss et al., 2008). As Taiyab (2006) notes, if used incorrectly, carbon offsets “provide nothing more than a band-aid to and distraction from the real problem of fossil fuel use” (17). She points out that the cost of offsetting is so low that it incentivizes a continuation of high consumption levels.

Rouse (2007) agrees, noting the danger of relying on carbon offsets:

*“The climate change issue requires a drastic change of our living habits and carbon-offsetting programs are just a way to ease our conscience by paying someone else to undo the damage we are generating. Reducing emissions in one developing country does not enable one to achieve a carbon neutral or climate neutral status” (390).*

However, if high-quality offsets are purchased to reach carbon neutrality after internal reductions have taken place, the term ‘carbon neutral’ shows leadership. When businesses, colleges or countries reach this type of carbon neutrality, it sends a message to their counterparts that such reductions are possible.

Another issue with carbon offsets is ownership of the environmental benefits.

Although in some cases ownership is clearly defined, rights to offset claims are often disputed with energy-efficiency or renewable energy projects where investors, equipment suppliers, utilities and electricity customers are all involved (Gillenwater, 2007). Rouse (2007) adds that the perception of immediacy is problematic in providing environmental benefits. Since organizations often forward sell their credits, there is a time lag between when the pollution is generated and when the project is implemented. Donors often fail to recognize this time lag and wrongly believe that they do not need to offset their emissions the following year if their donation is used to build something long-lasting such as a wind generator or a waste-treatment system.

While carbon offsets can provide environmental benefits if correctly regulated and utilized together with other GHG reduction measures, they often serve as a confusing band-aid that distracts from the real problem of fossil fuel use.

## **Summary**

Carbon offsets are expected to limit the cost of emissions reductions, promote sustainable development, and provide social and environmental co-benefits while serving only as a last resort. Due to these lofty and varied expectations, it is only natural that carbon offset providers have received a large amount of criticism for failing to live up to those goals. Given the large amount of criticism that the carbon market has received, alternative forms of offsets must be considered. Although local offsets have yet to be widely tested as a form of carbon reduction, I have found by examining ten case studies that colleges and universities can create their own offsets and effectively counteract many of the shortcomings of traditional offsets.

### III. Local Carbon Offsets in Practice

The carbon offset controversy is especially relevant when viewed within the microcosm of colleges and universities striving for carbon neutrality. As Breen (2007) notes, both public and private institutions of higher learning throughout the U.S. and Canada are “attracting media coverage, financial support and new students in an increasingly competitive race to green the campus” (3). At the same time, a recent report by the Rocky Mountain Institute showed that many colleges and universities are dissatisfied with the current market for carbon offsets. As Kinsley and DeLeon (2009) found on a tour of environmentally-minded colleges and universities:

*“Among many campus leaders, we have heard distrust of carbon credits available on national markets and a growing desire for high-quality, local emission-reduction projects that benefit the community” (88).*

The American College and University President’s Climate Commitment (ACUPCC) has experienced a similar phenomenon, noting a trend in their 2008 carbon offset protocol amongst many institutions to give a preference to local projects (Hales et al., 2008). The protocol recognized that the geographic proximity to campus provides advantages to carbon offset projects in meeting verification criteria such as additionality, transparency and measurability. As they suggest, “having direct contact and the ability to meet often and develop personal relationships with project participants could make it easier to meet these criteria” (Hales et al., 2008, 51). The protocol also proposes that local carbon offsets can provide greater educational, social and environmental co-benefits than traditional offsets. At the same time, they caution that “many schools are initially drawn to this approach, but it is important not to underestimate the costs associated with the time, expertise needed, and risk involved

in carbon market project development, verification and monitoring” (Hales et al., 2008, 51).

However, many of these ideas remain hypothetical, as there has been very little research to determine if local carbon offset projects truly provide greater economic, educational, social and environmental benefits than traditional offsets. In order to address this question, I interviewed students, faculty, staff and community members from ten colleges and universities: Brown University, University of Colorado at Boulder (CU Boulder), Duke University, Furman University, Linfield College, Morehouse College, Ohio University, Whitman College, Unity College and Yale University.

These projects were carefully selected after a consultation with the Association for the Advancement of Higher Education and the Rocky Mountain Institute Campus Climate report. The selection criterion for these colleges and universities was simple: initiation of a community-based project that reduces greenhouse gases and involves students. While there are certainly projects that I have not analyzed, the projects I have chosen are representative of the greater local offset sample. Due to the lack of research on this subject, my analysis of local offsets is largely qualitative with a few theoretical parallels to the way that localism is conceptualized within the local food movement. Similar to the local food movement, the growing field of local offsets is a reactionary force against a market deemed insufficient. While industrialized agriculture might appear a strange bedfellow with the carbon offset market, the arguments for their local alternatives are surprisingly similar.

Although all the projects I analyzed share similar goals, they differ greatly in methodology. Simplified comparisons between the projects can be made using the charts on the following page. First, I differentiated the projects by the institutional commitment to carbon neutrality, noting if they were signatories to the American College and University President's Climate Commitment and if they had set a date on which they would become carbon neutral. Then I noted the types of projects, the primary project developer, the project partners, funding sources and project stage as of March 2010. Lastly, I showed if the project is currently considered an offset by the institution. I found that although all of these projects reduce local carbon emissions and are associated with a college or university, only five out of the ten projects are recognized as an offset for their institution.

<b>Institution</b>	<b>Commitment</b>	<b>Type</b>	<b>Developer</b>	<b>Partners</b>
<b>Brown</b>	42 percent below 2007 levels by 2020	energy efficiency	Students	Schools, Churches, Local NGOs
<b>CU Boulder</b>	ACUPCC, date TBD	energy efficiency	Sustainability Office	State Agency
<b>Duke</b>	ACUPCC, 2024 carbon neutrality	hog waste, forestry, energy efficiency	Sustainability Committee	Utility, State Agency, Local NGOs, Regional University Partnership
<b>Furman</b>	ACUPCC, 2026 carbon neutrality	energy efficiency, sustainable agriculture	Academic Center (Shi Center for Sustainability)	Regional University Partnership, City Agencies, Local NGOs
<b>Linfield</b>	ACUPCC, date TBD	energy efficiency	Students	Utility
<b>Morehouse</b>	None	energy efficiency	Students	City Agencies
<b>Ohio</b>	ACUPCC, date TBD	energy audit	Sustainability Office	Landlords
<b>Whitman</b>	None	energy efficiency	Students	Local NGOs
<b>Unity</b>	ACUPCC, date TBD	energy efficiency	Faculty and State Agency	State Agency
<b>Yale</b>	10% by 2020	energy efficiency, forestry	Sustainability Office	Local NGOs

<b>Institution</b>	<b>Funding Source</b>	<b>Project Stage</b>	<b>Certified</b>
<b>Brown</b>	WalMart, Alumni Donation, College Budget	Ongoing	No, not considered offset by institution
<b>CU Boulder</b>	State grant, College Budget	Finished due to funding loss	No, not considered offset by institution
<b>Duke</b>	Family Foundation, College Budget	Report on local offsets completed, projects in implementation stage	Yes, considered offset by institution, third-party verification likely
<b>Furman</b>	Family Foundation, College Budget	Ongoing	Yes, considered offset by institution
<b>Linfield</b>	McMinnville Water and Light	Ongoing	No, not considered offset by institution
<b>Morehouse</b>	Large Foundations	Ongoing	No, not considered offset by institution
<b>Ohio</b>	Family Foundation, College Budget	Ongoing	Yes, considered reduction on campus property
<b>Whitman</b>	College Grant, Walmart, Home Depot	Ongoing	No, not considered offset by institution
<b>Unity</b>	Large Foundation, College Budget	Finished	Yes, considered offset by institution, has third-party verification
<b>Yale</b>	Large Foundation, College Budget	Ongoing	Yes, but marketed to departments

It may seem strange that half of the local offset projects I chose to analyze are not currently recognized as such, but I believe there is valid justification for this choice. First, since this idea of colleges and universities creating their own form of offsets is such a nascent one, many of the project developers I spoke with had never considered that their project could produce offsets. This shows that there is not enough research and publicity on the potential of local offsets, since the majority of them were excited by the prospect of becoming an offset project. Second, since these projects are occurring without the specific goal of providing an offset, this suggests that local offset projects provide benefits apart from a reduction in greenhouse gases.

I have divided up my analysis of local carbon offset projects in a similar fashion to my analysis of the broader carbon market, with economic, social and environmental categories. However, I have also added an educational category because these projects must fit with the mission of colleges and universities to educate. I could have included the educational category in the broader offset market as many offset providers such as Carbon Fund and TerraPass include education as part of their mission, but I felt that such a category would unfairly bias my research towards local offsets.

Before delving into the analysis, it is necessary to provide a quick summary of each project. Duke University is likely the most knowledgeable institution on local carbon offsets in the country, having conducted a graduate level feasibility assessment of “local offset measures that have educational, social and environmental co-benefits” and released a lengthy report on the local potential (Polk and Potes, 2008). Duke is currently working on three tiers of local offsets: hog waste, forestry

and energy efficiency. They have already begun two hog waste projects. Yale University is close behind, having conducted a graduate seminar on how to reduce Yale's greenhouse emissions that recommended the creation of the Yale-New Haven Community Carbon Fund to invest in home-energy efficiency packages and neighborhood tree plantings. Yale has completed the pilot stage of the home-energy efficiency packages. The offsets generated will be used for the university's overall climate commitment and specifically marketed to various schools and departments within the university to offset departmental events like ceremonies and conferences.

The student-led projects at Brown, Linfield, Morehouse and Whitman strongly contrast with the academically propelled and institutionally supported projects of Duke and Yale. These four projects primarily focus on lighting retrofits in lower-income neighborhoods—replacing incandescent bulbs with 75 percent more efficient compact fluorescents (CFLs)—but all of them are slowly incorporating weatherization components into the projects. The projects at Brown and Whitman are funded primarily through institutional grants while the project at Linfield is funded by the local utility and Morehouse's project is funded by various foundation grants. Linfield's project has the interesting side effect of helping to pay for a solar panel installation, as McMinnville Power and Light donates two dollars to the project for each CFL installed. Both Morehouse and Brown have since expanded to create summer 'green jobs' programs to employ lower-income people installing CFLs in Atlanta and Washington D.C. respectively.

The projects at Furman and Ohio University both rely on local family foundations but differ greatly in project type. Furman University is engaged in a

partnership with community members in Greenville SC to facilitate energy efficiency and sustainable agriculture offsets and launched their first pilot of the Community Conservation Corps on April 10. Ohio University's Green House Program takes a different approach by conducting audits of off-campus student housing, providing a list of recommended efficiency upgrades to the landlord and offering a cash rebate of up to \$500 towards improvements the landlords chose to make. Unity College has also focused on housing, partnering with the Maine State Housing Authority to help them become the first state housing finance agency in the country to sell certified carbon emission reductions created by energy efficiency improvements in low-income housing. Unity College purchased 250 tons of MTCO<sub>2</sub>e<sup>10</sup> from the housing authority in 2008 but have not purchased any in 2010 as they are waiting to develop their climate action plan. University of Colorado at Boulder (CU Boulder) is the only institution researched that has finished their program, a loss due to cuts in federal funding. Previously, they ran a project called Energy Connections that trained students to install thermostats, water heater blankets, CFLs and assessed appliances to see if they qualified for an upgrade. Although Energy Connections has ended, CU Boulder is still supporting local offsets through the governor-supported Colorado Carbon Fund.

### **Economic Analysis of Offsets**

An important criteria for carbon offsets is the level of accountability that the carbon offset providers feel towards their projects. As noted earlier, when offset

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<sup>10</sup> Metric Tons of Carbon Dioxide Equivalent (MTCO<sub>2</sub>e) is the international reporting standard for carbon offsets

providers are left unregulated and feel no accountability, there is a high chance that the offsets provided will be non-additional<sup>11</sup>, double-counted and lacking social or environmental co-benefits. Despite the unregulated nature of the local offset market, I found that project developers have a strong sense accountability towards their projects.

Richard Merritt, a senior International Studies major at Morehouse College and co-leader of the Let's Raise A Million (LRAM) project to install one million CFLs by 2013, feels much more accountable to this project than to other environmental activities he has been involved in. As he said:

*"I'm more passionate about this because I know I'm directly affecting the community around me. The level of accountability is higher. A lot of environmental organizations that I've been involved in are just out for the title...It being more tangible is a good thing, it's not just for show, its not just a photo-op experience. At the end of the day you know that you are going into homes saving people \$30-\$40. That's big."*<sup>12</sup>

Dave Newport, the Director of the Environmental Center at CU Boulder echoed this sentiment regarding his institution's purchases from the Colorado Carbon Fund saying that while he's suspect of cheap carbon, he's not suspect of the carbon from the fund because he can "ride my bicycle over and look at it and know it wouldn't have happened without our money."<sup>13</sup>

While the tangibility and geographic proximity of local offsets certainly bestow a *feeling* of accountability, expanding these feelings to theory risks following a particular set of romanticized imaginaries about the power of the local. As DuPuis and Goodman (2005) explain in their analysis of alternative food systems, activist narratives tend to frame the local

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<sup>11</sup> Non-additional signifies that the project would have happened without the added carbon financing.

<sup>12</sup> Interview with Richard Merritt by telephone on March 11, 2010

<sup>13</sup> Interview with Dave Newport by telephone on February 5, 2010

as a pure, conflict-free context where ethical norms flourish and provide resistance to capitalist forces. By framing the local as a space of environmental sustainability and social justice, the local carbon offset narrative risks ignoring the inequalities embedded in the local framework. Specifically, what if the project developer who takes over LRAM after Merritt graduates does not feel any accountability to the project and decides to artificially inflate the numbers so they do not actually install one million CFLs? What if students at CU Boulder fail to ride their bicycles over? Such actions would decrease the accountability or educational value for which local offsets are extolled.

There are dangers in equating geographic proximity with broader ethical values of caring, and this narrative intends to recognize those. At the same time, the unique nature of college and universities increases the power of proximity. Both public and private institutions of higher education go to great lengths to make themselves accessible to the public<sup>14</sup> and pay close attention to reviews and ratings. Since these institutions are constantly hoping to improve their reputation in order to attract more high-quality students, anything that might cause a scandal is explicitly shunned. If one of the many visitors to campus or a student within the college were to accuse the institution of greenwashing<sup>15</sup> at the expense of the local community, such a charge would resonate throughout the area and likely dissuade many prospective students. Although an accusation of greenwashing can just as easily be leveled at a college purchasing traditional offsets, a fraudulent local offset project is more likely to be discovered and has a higher chance of being reported due to local interest. While these

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<sup>14</sup> Most schools go to great lengths to give tours, hold community-wide events and encourage community service so increase their reputation as a welcoming institution

<sup>15</sup> According to CorpWatch, the term greenwash (green whitewash) used to be reserved to companies disingenuously spinning their products and policies as environmentally friendly but is now often used to describe organizations that attempt to show that they are adopting practices beneficial to the environment

hypothetical situations in no way prove the superior quality of local offsets over their traditional counterparts, the accessible and reputation-oriented disposition of colleges and universities suggest that proximity will lead to higher accountability.

This sense of institutional accountability has led many schools to conclude that their money is better spent on the projects themselves than in the expensive verification process. As Dr. Angela Halfacre, Director of the Center for Sustainability at Furman University explained, “we can’t justify spending substantial funds verifying the planting of a rain garden for a local carbon offset when we could build several rain gardens for that money and encourage a greater sense of community and place in the process.” Instead, many institutions are looking within themselves to find individuals or groups capable of providing verification because they cannot afford to pay a third-party verifier to inspect their local offset project. Heather Hosterman, Policy Associate of the Duke Carbon Offsets Initiative, has spoken with five third-party verification companies in regards to Duke’s project to transform swine waste into marketable compost.<sup>16</sup> She found that the verifiers would have to inspect the project every year at a price of \$10,000 annually. Duke has decided to purchase verification for one project in order to understand the process but to rely on Duke faculty members and USDA numbers to do the calculations for the other projects.

On the other hand, Unity College Associate Professor and former Director of Sustainability Mick Womersley says he would, “never buy an unverified offset.” Womersley worked with the Maine Housing Authority to help<sup>17</sup> them develop a standard to verify and sell carbon offsets created by energy efficiency improvements in low-income housing. These offsets meet the standards of the Regional Greenhouse

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<sup>16</sup> Interview with Heather Hosterman by telephone on February 28, 2010

<sup>17</sup> Maine Housing also received assistance from the Ford Foundation. Unity College was the first purchaser of the offsets.

Gas Initiative (RGGI), a mandatory, market-based effort in ten states to cap and reduce carbon emissions from the power sector ten percent by 2018. Although he would not purchase one, Womersley still thinks that unverified local offsets make more sense than verified traditional ones. As a trained economist, Womersley believes that if an organization cannot economically reduce their own emissions, local offsets are better due to regional multipliers and the gain in marginal utility<sup>18</sup> from offsets that provide a transfer to low-income populations.<sup>19</sup>

Unity College is the only institution I spoke with that has developed a tradable offset. It is also the offset program with the least student involvement; the energy efficiency technologies are installed by the Maine Housing Authority and the standard itself was developed by a faculty member with marginal student contributions. While the project benefits lower-income community members, it lacks the educational benefits of the untradeable offset projects. This distinction entreats an important question: is there a compromise between tradability and educational benefits? In its quest for tradability, Unity College's local offset project has become more akin to traditional offsets where the role of the university is marginalized to that of a purchaser rather than the hands-on role of a project developer. Although it is difficult to provide conclusive evidence given the limited number of case studies, Unity College's project suggests that local offsets' lack of tradability could be an advantage rather than an indication of greenwashing.

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<sup>18</sup> Diminishing marginal utility is the utility lost from the consumption of a good when that good is already plentiful, in this case because upper-income populations are better able to afford energy efficiency technologies without offset financing

<sup>19</sup> Interview with Mick Womersley by e-mail on March 22, 2010

Although one might think that skipping the third-party verification process would make local carbon offsets relatively cheaper, most institutions have found that the offsets they have created are far more expensive per MTCO<sub>2e</sub> than a traditional offset. Ohio University spent \$667 per MTCO<sub>2e</sub> reduced on their Green Housing Project<sup>20</sup> and Brown University spent \$200 per MTCO<sub>2e</sub> while only reducing approximately five percent of the university's annual emissions. In contrast, the market price for a carbon offset ranges from \$0.09 (Chicago Climate Exchange, 2010) to \$50 (Beyond Neutral, 2010).

Despite the alarming figures from some institutions, others were able to create much lower-priced offsets. Yale priced their Household Efficiency Package<sup>21</sup> at \$32 per MTCO<sub>2e</sub> reduced, a price that includes a five dollar insurance premium in lieu of failure to deliver the target offset goal and is similar to Unity College's energy efficiency offsets at \$20 per MTCO<sub>2e</sub> reduced. On the other hand, Yale found that the simpler project of community tree planting was significantly more expensive, with a price tag of about \$950 per MTCO<sub>2e</sub> reduced with a conservative survival rate of 85 percent. As Benjamin Healey put it, energy efficiency definitely produces the "most bang for our local buck."<sup>22</sup>

In a preliminary assessment, Duke University found that they could produce local offsets for a little as five dollars per MTCO<sub>2e</sub> from agriculture, forestry and hog waste projects (Polk and Potes, 2008). Though they estimated that they could produce offsets from energy efficiency projects for even less, around \$3.45 per MTCO<sub>2e</sub>, they chose to pilot their local offset program by investing in hog waste. Although Duke acknowledges that energy efficiency is the "largest and least expensive way to mitigate climate change" and provides

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<sup>20</sup> Interview with Sonia Marcus by telephone on February 18, 2010

<sup>21</sup> The package includes many of the same technologies employed at other colleges such as CFL replacements, water heater blankets and low flow showerheads

<sup>22</sup> Interview with Benjamin Healey by telephone on February 4, 2010

many co-benefits to the surrounding community and university employees, they noted that there are major controversies in energy efficiency offset projects (Polk and Potes, 2008). Energy efficiency reductions are not typically classified as carbon offsets because they are a capped sector in most states. As of December 2009, 36 states had a Renewable Energy Portfolio Standard (REPS), Alternative Energy Portfolio Standard (AEPS) or renewable/alternative energy goal (Pew Center, 2009). Although the exact legislation varies from state to state, the majority of these standards require utilities to source a minimum percentage of electricity from renewable energy or from energy efficiency. Hence, if a college or university were to count an energy efficiency reduction towards their carbon neutrality in a state with a renewable/alternative energy requirement this would be double counting with the utility.

Despite this caveat, Duke University found that the majority of the utility-based proposals for energy efficiency in North Carolina propose to generate only a small proportion of the energy efficiency potential estimated by independent studies (Polk and Potes, 2008). As Duke found, if colleges and universities are careful to target areas only where a utility has not already invested, they can be assured that the reductions would not have happened without their action and successfully invest in meaningful and low-cost energy efficiency projects. Another interesting solution work directly with the utility, as Linfield College has done.<sup>23</sup> Multiple solutions to the energy efficiency caveat exist; each institution needs to find the solution that works best for them.

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<sup>23</sup> Student leader Duncan Reid is working with the local utility McMinnville Power and Light to distribute CFLs in exchange for two dollars for each CFL installed donated to Linfield's solar panel project.

In order to find locally appropriate solutions, it is helpful to utilize the power of the classroom. Both Duke and Yale, two universities that were able to produce the most cost-effective offsets, held graduate-level seminars on the topic of local carbon offset potential. While many colleges might not have the ability to hold a graduate or undergraduate seminar, even a weekend-long workshop would likely find ways to decrease the local offset cost.

Even so, creating a local carbon offset program is more expensive and time consuming than purchasing offsets from the traditional market. All of the local offset project developers I spoke with have been forced to find sources of funding apart from their college or university. Four colleges have relied on money from local or alumni foundations and two colleges have utilized money from Walmart. Both sources of funding depend heavily on location, as this funding is only possible if the institution is located in a town with a supportive foundation or corporation. The high cost of local offset projects can ultimately make them cost prohibitive, as was the case for CU Boulder, which was unexpectedly forced to end their Energy Connections program when President Obama changed the distribution of money for energy projects.

This economic argument is the reasoning behind the choice of College of the Atlantic (COA), the first institution of higher education in the country to become carbon neutral, to purchase offsets on the market rather than creating them locally. As Oliver Bruce, a student on the offset purchasing committee explained, while some students wanted to invest locally, COA's president said, "if we can do it more cost effectively elsewhere why not do it there? Carbon is carbon."<sup>24</sup> However, Bruce noted that the inexpensive (\$6.00-\$7.00) offsets COA purchases are "not the best" in terms of their additionality. Bruce believes that it is very

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<sup>24</sup> Interview with Oliver Bruce through Skype on March 28, 2010

difficult for smaller offset purchasers—like colleges and universities—to dig into the inner financial decision-making of a business and to truly know the importance of carbon offsets to a business’s profitability. As he said “it seems that most businesses look at carbon offsets and think something like ‘let’s add selling carbon offsets to our business model if we can...It can’t hurt us and what the heck we really need the money!’”

COA’s most recent purchase of offsets was from a company called Idleaire that electrifies truck stops so that drivers do not need to keep their engines running for heat or reading light. Bruce believes that this is one of the more legitimate projects that COA has purchased offsets from since December of 2007 when they first became carbon neutral. In his words,

*“The one with Idleaire was the least offensive we could find that was both economically affordable to a small college and ecologically robust enough to stand up to scrutiny. We were looking at the other [previously purchased offsets] and seeing that we couldn’t comfortably say that 20,000 tons were taken out of the atmosphere. Effectively we’re buying these [carbon offsets] but recognizing that they’re not the best because the market is still developing.”<sup>25</sup>*

COA’s struggle with carbon offsets is indicative of the questions faced by many institutions that have pledged to become carbon neutral. The American President and University Climate Commitment (APUCC) issued a brief protocol and longer set of guidelines to help institutions of higher education purchase credible offsets, but the complexities of the carbon market are difficult to understand. Even though the President of COA, David Hales, is one of the main authors of the APUCC guidelines for carbon offsets, COA is clearly grappling with the issues around carbon offsets.

Both the local and traditional carbon offset markets are in the development stage. Without romanticizing the proximity, colleges and universities are more likely to feel greater

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<sup>25</sup> Interview with Oliver Bruce

accountability towards a local offset project than a far-away one due to reputational factors and internal surveillance. The necessity of verification is a contentious issue and more research remains to be done on how to reasonably verify a local offset project and retain the educational co-benefits of implementation. Institutional research into the local potential is likely to reduce the price per MTCO<sub>2e</sub>, as the graduate-level seminars held by Duke and Yale demonstrate. Energy efficiency projects pose a danger of double counting to institutions in certain states but communication or partnerships with the local utilities can overcome this hurdle. Local offset projects do require more time and money than traditional offsets but as found in the case of College of the Atlantic, at least the institutions that invest locally can feel confident in the legitimacy of their purchases.

### **Social Analysis of Local Offsets**

Despite the higher cost of local offset projects, half of the project developers I spoke with are implementing their projects for reasons other than offsetting their institutional emissions. This phenomenon speaks volumes to the multiplier effect of local offset projects since these projects provide enough benefits other than GHG reduction to merit the undertaking. When speaking of their motivations for the project, all of the developers spoke of reasons apart from GHG reduction, focusing instead on the social benefits of local offset projects.

Benjamin Healey from Yale believes local offset programs can help connect people to “the human face of the issue.” As he said,

*“We can say your \$70, that is going to help make sure that this particular family in New Haven is saving money on their electricity bill and here’s a picture of their 3*

*year old daughter.... Even if there is a slight price premium on [local offsets] folks will be willing to pay it because it's more tangible.”<sup>26</sup>*

Healey believes that this tangibility leads to great investment in carbon offsets because the offset is no longer just about an unseen reduction in greenhouse gases—it’s a contribution to a greater social good. Almost all of the project developers cited the desire to improve the relationship between their institution and the surrounding community; many of them already have. Yale received an overwhelmingly positive response from their pilot project. As Healey reported from his half dozen interviews, “There were no complaints. Everyone is really excited about the prospect of this program growing.”<sup>27</sup> Danny Musher from Brown received a similar response, attaining a 96 percent approval rating from a survey of over a hundred households.

Many project developers have begun looking at ways to extend these social benefits by providing employment to community members, essentially creating ‘green jobs’ programs. Such a program has sprung out of the projects of student leaders Danny Musher and Richard Merritt, from Brown and Morehouse respectively. After serving as a leader of Brown’s energy efficiency project, Project 20/20, Musher saw the potential for a similar project to have an additional positive impact by employing community members in need of income rather than solely university students. As a native of the Washington D.C. area, Musher ran a program as part of the Mayor’s Green Summer Job Corps to employ forty District youth in CFLs installation and the distribution of weatherization kits. Merritt started a similar program in Atlanta, working with local organizations<sup>28</sup> to create a summer program called the Atlanta Mentorship Program for Sustainability. The program employs thirty high

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<sup>26</sup> Interview with Benjamin Healey

<sup>27</sup> Interview with Benjamin Healey

<sup>28</sup> Atlanta Workforce Development Agency, the Department of Watershed Management and Sustainable Atlanta, a local nonprofit

school students of modest means to install CFLs and low-flow water devices in lower-income neighborhoods and is projected to save Atlanta residents more than \$2.5 million dollars by decreasing energy and water consumption. The program focuses on mentorship by allowing college students to work closely with high students. Merritt saw a noticeable change in the students due to the mentorship aspect, saying, “By the time they leave, they take a lot more personal pride in themselves and what they do.”<sup>29</sup>

The majority of the local carbon offset projects I analyzed focus on benefiting lower-income community members. Duncan Reid from Linfield said his philosophy for targeting lower-income communities was quite simple: “if you do not get the lower-income communities onboard with sustainability, it’s not going to work.”<sup>30</sup> His words echo the sentiment among many of the project developers that the environmental movement has historically targeted higher socioeconomic classes and that local carbon offsets—and energy efficiency projects in particular—provide an opportunity to educate lower socioeconomic classes about sustainability through an economic message. As Richard Merritt from Morehouse explained, “We created LRAM to adapt a message of climate change to one about saving people money, a message that worked better towards our community than other messages.”<sup>31</sup>

While these projects are clearly undertaken with the best of intentions, they run the risk of becoming what Childs (2003) refers to as “the politics of conversion.” In this type of politics, a small, unrepresentative group decides what is “best” for everyone and then attempts to change the world by converting everyone to accept their utopian ideal (DuPuis and Goodman, 2005). The dynamic of elite colleges and universities getting lower-income

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<sup>29</sup> Interview with Richard Merritt

<sup>30</sup> Interview with Duncan Reid by telephone on February 8, 2010

<sup>31</sup> Interview with Richard Merritt

communities ‘onboard’ with environmentalism can all too easily “reinforce local elites at the expense of other local actors” (DuPuis and Goodman, 2005). This critique echoes charges of “carbon colonialism” leveled at the traditional offset market for allowing wealthier nations to perpetuate unsustainable lifestyles by funding carbon projects in developing countries.

In order to address this critique, local offset project developers need to stop merely targeting their messages towards lower-income communities and begin asking the community members what they need. The idea that everyone appreciates saving money notwithstanding, community members may have different ideas regarding the types of energy efficiency technologies they could best utilize. A community consultation would not only make the community an equal partner in the offset process, it could also help lower the price of the offsets through the community members’ knowledge of where the most greenhouse gases could be reduced. For example, an offset project originally designed to focus on CFLs might find that a low-cost weatherization technology such as window sealant would be more appropriate in a neighborhood with older houses. Whitman College is currently undertaking such a consultation by calling all of the homeowners involved in their CFL project and asking for their input into technologies and methodologies for the coming year.

Community consultations can also increase the educational value of the project for community members. Morehouse, Brown and Yale have all found in their post-installation surveys that, subject to financial constraints, their project participants were much more likely to purchase sustainable products after being introduced to them. As Lois Greene, one of the participants in the Yale Household Energy Efficiency Package said in her post-project survey,

*“We’re more conscious [of our energy use] now that we’ve done the program... We now own this home, so money is tight, and not being conscious is like throwing money away.”<sup>32</sup>*

This educational value would only increase with the explanation of why these technologies are important in community consultations.

Sonia Marcus from Ohio University found that by conducting audits of off-campus student housing through their Green Housing Program, the project has significantly contributed to awareness of the cost-effectiveness of weatherizing homes for both students and community members. At the same time Marcus believes that the high visibility of the project that has contributed a lot to the overall visibility of sustainability at OU.

Ohio University is not the only institution benefiting from the high visibility of local offset projects. All of the projects I analyzed had received numerous media hits, with Brown’s Project 20/20 featured on CNN and in the New York Times. The high visibility of the projects provides a strong incentive for administrative support. As Dave Newport from UC Boulder said, “even if [local] offsets are more expensive, it looks good for the university.”<sup>33</sup> Dave explained that as the flagship public university in Colorado and one of the original signatories of the President’s Climate Commitment, UC Boulder prides itself on leading the way for sustainability in Colorado and investing in local offset projects is a key component of this leadership. Many of the project developers have been asked to speak at conferences and webinars regarding their projects, thereby increasing the positive publicity for their institutions. Even members of the public against the idea of carbon offsets seem to appreciate the community-engagement spirit of the projects.

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<sup>32</sup> Interview with Lois Greene conducted in person by Benjamin Healey on January 13, 2010

<sup>33</sup> Interview with Dave Newport

Although none of the project developers cited publicity as the purpose for their project, the high visibility of local offset projects clearly serves as an incentive for the admissions-focused world of higher education. Arguably, the entire concept of a carbon neutral college is a marketing effort. As Breen (2007) notes, decisions about sustainability initiatives are “rarely justified on pedagogical, ethical or ecological grounds but rather on the issue of whether it will bring in new funds, supporters or students to the institution” (11). Superficially, the strong ties between campus sustainability and admissions marketing increases the allure of local offset projects due to their high visibility.

On the other hand, this publicity does not magically appear. Although all of the project developers felt that the project was worth it, many of them mentioned the large amount of time they have had to spend developing their project. They found that one of the most important ways to minimize the amount of time spent on the project is through partnerships, stating that without these partnerships their project likely would not have been possible. All of the project developers I spoke with have partnered with more than one local organization.<sup>34</sup> These projects are also beneficial for the organizations; Sandra Cannon from the Sustainable Living Center in Walla Walla said that their goal of conducting energy audits in lower-income houses would not be possible without the foot power of Whitman’s eJustice program.<sup>35</sup>

As exciting as these projects sound, colleges and universities must be careful to focus on on-campus reductions and use offsets only as a secondary measure in

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<sup>34</sup> Many have partnered with local NGOs that have already-established relationships with lower-income families. A few have partnered with state agencies such as the Natural Resource Conservation Services (Duke), city agencies such as the Atlanta Workforce Development Agency (Morehouse) and the mayor’s offices (Brown and Morehouse). Linfield and Duke are partnered with their respective local utilities and CU Boulder has partnered with the governor-supported Colorado Carbon Fund.

<sup>35</sup> Presentation by Sandra Cannon at eJustice volunteer training on March 7, 2010

order to avoid charges of hypocrisy. Natalie Popovich from Whitman College noted the duplicity of the eJustice project conducting lighting retrofits in the community when the college has not changed all of its incandescent light bulbs to the more energy efficient compact fluorescents (CFLs). To be fair, Whitman has a policy of replacing incandescent bulbs with CFLs and estimates that 95 percent of bulbs are CFLs. However, since the eJustice project operates under the theory that it is more environmentally efficient to replace an incandescent bulb than to let it burn out, it seems only fitting that Whitman should adopt such a policy. In order to correct this policy, the eJustice project is currently applying for funding to conduct a lighting retrofit at Whitman and in college-owned housing.

If offsets are viewed as secondary to on-campus reductions, the social reasons for local offset projects are extremely compelling. All of the project developers were motivated to start a local offset program in order to address a social problem that has resulted in lowered energy costs for lower-income families and the creation of environmentally-oriented employment in their communities. Despite the large time commitment that local offset projects entail, the social benefits make these projects worth it. While local offset projects are likely at least partially motivated by marketing goals, to discard local offset projects as an admissions scheme is to deny the multitude of social and educational benefits that all of the local offset participants have experienced. While the term ‘carbon neutral’ might be merely symbolic, high-value local offset projects are helping to provide the meaning behind the lettering.

## **Educational Analysis of Local Offsets**

Given that the mission of institutions of higher education is to educate, not to offset, it is crucial that carbon offsets aid this mission. When I asked Jason Fitzgerald, Climate Change Specialist at the carbon offset nonprofit The Carbon Fund, what he thought of the growing number of colleges and universities creating their own carbon offsets, he expressed concern that the projects would get in the way of their mission. As he said, “colleges and universities are not in the business of carbon offsets, they’re in the business of educating kids. If they want to have an offset program its better to leave it to the experts.”<sup>36</sup>

Fitzgerald is not the only one to express this concern. The Rocky Mountain Institute (RMI) recently published a report that underlined the need for offset programs that offer educational benefits. The authors noted that since carbon credits are considered subordinate to more direct means on-campus to avoid and replace emissions it “makes sense that they take a backseat to the central goals of higher education” (Kinsley and DeLeon, 2009). RMI suggests that the educational, service and research opportunities that local offsets can provide —such as student field trips and faculty research—justifies the projects. Similar to my own observation that Duke and Yale’s graduate level seminars had greatly increased the quality and cost-effectiveness of their offset programs, RMI found that courses, service-learning projects and student research on carbon mitigation help project developers more accurately predict the co-benefits of the programs.

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<sup>36</sup> Interview with Jason Fitzgerald by telephone March 12, 2010

All of the student project developers I spoke with felt that their project was an incredible learning experience for themselves and their team. Many of them have been recognized by organizations such as the Udall Foundation and the Clinton Global Initiative for their leadership on these local offset projects. As Danny Musher from Brown University said, “It’s more than a carbon offset, it’s about relationship building in the community and kids learning how to manage pseudo-organizations.”<sup>37</sup> Many of the student project developers believe that their projects have involved other students who might not have otherwise participated in an environmental initiative. Richard Merritt from Morehouse found that although many of the students who originally volunteered just to fulfill a community service requirement have become more involved in the project and in the environmental club. Natalie Popovich, from Whitman College found that:

*“This project brought so many students out to a part of Walla Walla they didn't know existed. It allowed people to practice their Spanish with community members, opened up a discussion about the environment and social justice that hadn't necessarily occurred between these different groups before and got people excited about what we could each do as individuals in our own community.”*<sup>38</sup>

Although all of the student project developers I spoke with admit that their local offset project has taken up a large amount of time, all of them felt that the benefits to themselves, other students and community members has made the project worthwhile. From student research to students learning how to run pseudo-organizations, local offset projects undoubtedly provide more educational benefits than purchasing an offset from the traditional market. Not only do local offset projects fit within the educational mission of institutions of higher education, they provide a rare opportunity for service learning within a sustainability framework.

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<sup>37</sup> Interview with Danny Musher by telephone on February 2, 2010

<sup>38</sup> Interview with Natalie Popovich in person on March 30, 2010

## **Environmental Analysis of Offsets**

As many economic, social or educational benefits local offset projects might provide, they cannot truly be considered offsets if they do not reduce greenhouse gases. As Jason Fitzgerald from the Carbon Fund told me, “the hallmark of a high quality carbon offset is third-party verification.”<sup>39</sup> Upon hearing that the majority of colleges and universities—all but Duke—had no plans for a third-party verification to certify their reduction in GHG, Fitzgerald said that the programs were essentially greenwashing.

One of the project developers, Dave Newport, expressed his doubt that colleges and universities can create credible, tradable offsets without greenwashing. He believes that since the process of verification is so arduous, the potential for these projects to be considered offsets is low. Newport cited the example in 1999 when CU Boulder became the first institution in Colorado to buy renewable energy credits and their communications office began to market the school as being “wind-powered.” However, he had to clarify that they were simply giving money to wind turbines in Montana and that the university was not technically powered by wind. Newport believes that colleges and universities could very easily lose a lot of credibility with local offsets. While noting environmentalists’ history of exaggeration, Newport still wishes he was still running CU Boulder’s Energy Connections program because “there are fifty million other reasons to do it.”<sup>40</sup> While CU Boulder is still investing locally through the Colorado Carbon fund, students are no longer trained to install renewable energy technologies. While Newport’s concern of greenwashing is valid, there is clearly a trade-off between tradable, purchased offsets and offsets from projects implemented by students.

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<sup>39</sup> Interview with Jason Fitzgerald

<sup>40</sup> Interview with Dave Newport

Since universities and colleges appear to favor household energy efficiency projects, it may not even be possible to achieve third-party verification. The majority of standards in the voluntary carbon market, with the notable exceptions of the Gold Standard and Green-e, do not verify energy efficiency offset projects. Household energy efficiency projects face the problem of double counting with utilities and are so geographically dispersed that it is nearly impossible for third party verifiers to provide a certification.

At the same time, part of the value of these offsets is that they are personal, not tradable. Duncan Reid from Linfield noted the benefits of this tangibility, saying, “My sense of carbon offsets is that if you’re not doing it yourself or you’re not doing it in your community you’re not doing anything.”<sup>41</sup> Most of the project developers I spoke with expressed a similar skepticism with the traditional carbon offset market, just as carbon offset companies in the traditional market expressed skepticism with the unverified offsets produced by colleges and universities.

While some colleges may not feel that they need to verify such a personalized form of carbon reduction, others might not feel comfortable undertaking offset projects until a standard is developed. One means of resolving this conflict would be for an organization like the Association for the Advancement of Sustainability in Higher Education (AASHE) or Second Nature to work with a third party verification company to develop a voluntary standard of verification that colleges and universities could implement for a far lower cost than market price. The project developers I spoke with had a wide variety of opinions on the benefits of a standard for local offset projects. Sonia Marcus from Ohio University did not believe that a standard was worth the effort when colleges and universities are doing these projects with the best of intentions since it is a voluntary effort. As she said,

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<sup>41</sup> Interview with Duncan Reid

*“I can’t see a point of [a standard] unless we thought there was going to be abuse. We all do these [projects] in good faith. I’m not sure if we should spend time and effort to make sure these offsets are calculated correctly.”<sup>42</sup>*

Heather Hosterman from Duke disagreed, saying that the process of creating local carbon offsets is confusing and that until federal legislation passes to regulate the market, there is a need for a streamlined standard for colleges and universities to follow. Hosterman has already begun collaborating with two other universities in South Carolina, Furman University and Johnson C. Smith, to develop project-specific criteria that looks towards national standards but does not require high levels of funding.

All of the project developers I spoke with expressed a keen interest in collaborating and learning about other local offset projects around the country. While the Rocky Mountain Institute mentioned a few of the projects in their report and others can be found on AASHE’s website, there is no centralized list of all the colleges and universities undertaking a local offset project. Presumably, if there were a standard, a centralized list of institutions would emerge and communication between them could be facilitated. This network of institutions creating carbon offsets could provide each other with best practices such as community consultations or collaboration with utilities. Were the network to grow large enough, it could exert influence on the traditional market, sending the message that consumers want high-quality carbon offsets that include co-benefits. While this vision may appear utopian, few people expected the local community gardens, food co-ops, Community-

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<sup>42</sup> Interview with Sonia Marcus

Supported Agriculture (CSA) and farmers' markets to exert influence on the industrial agriculture system.

The Rocky Mountain Institute found that while the idea of creating local offset programs was on the radar of almost every college they visited, it "seems to be little more than idea at this stage" (Kinsley and DeLeon, 2009). While the widespread social benefits of local offset programs are apparent, more work needs to be done to address the challenges of verification and bring down the cost of implementation.

#### **IV. Conclusion**

Despite their problems, it is clear that carbon offsets will continue to exist. Colleges and universities will continue to strive for carbon neutrality and carbon offsets will remain a necessary part of reaching that goal for the majority of institutions. The type of carbon offsets utilized, however, remains to be seen. Are local offsets merely part of an environmental trend, emulating the recent 'buy local' phenomenon, or are they an emerging solution to the offset dilemma for institutions of higher education?

Like local food, local offsets are more expensive than their traditional counterparts. With prices as low as \$.09 per ton of MTCO<sub>2</sub>e for traditional offsets, local offsets will never be able to compete economically (Chicago Climate Exchange, 2010). But what kind of offsets can be bought for less than ten cents? Scholars argue that the traditional offset industry has moved away from its original mission of yielding benefits for both people and planet and toward 'minimum standard' offsets that lack any co-benefits (Kollmuss, 2008). The theoretical benefits of economic efficiency and the potential to deliver social benefits through technology transfer and

capacity building have been found to be an illusion for the majority of the market (Wara and Victor, 2008). In contrast, the social benefits of local offset projects have made them so attractive that local GHG reduction projects are being implemented without the purpose of providing an offset. Rather than moving away from social co-benefits, the local offset market is moving towards them, creating new ‘green jobs’ programs from what were once just energy efficiency projects. These projects are helping to break the town and gown divide, furthering the sustainability movement through their high visibility and inspiring both students and community members to realize the social and economic benefits that environmental projects can provide.

These tangible benefits are a stark contrast to the intangibility of the traditional market. When a project developer is able to show an investor ‘the picture of the three-year old daughter’<sup>43</sup> of a family saving money in energy costs from carbon offset financing, that person is much more likely to invest. On a broader level, this tangibility has also allowed all of the local offset projects developers I spoke with to be awarded funding from outside their institution. Given that the intangibility of carbon offsets is seen as the principal cause of market failures producing non-additional offsets, the tangibility of local offsets would seem to make them less prone to such failures (Gillenwater, 2007).

However, both the local and the traditional market have yet to resolve the problem of verification to prevent these market failures. As Gillenwater (2007) notes, “generally, independent third-party verification of offset projects against a common standard is necessary for consumers to have a reliable and unbiased source of information on offset quality.” But what about projects where the beneficiaries of the

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<sup>43</sup> Interview with Benjamin Healey

project are part of the same community as the project developers? Is it worth it or even possible to pay a third-party verification company as much as \$10,000 per year to certify a local offset project?

This question is especially difficult as third-party verification has shown itself to be easily corrupted in the traditional marketplace. As Wara and Victor (2008) found, because project developers pay third party verifiers, there is a strong incentive for verifiers to certify projects that do not meet additionality criteria. Research has shown that this incentive is hard to overcome since a significant number of offsets come from projects that are non-additional (Schneider, 2007; Haya, 2007). As simplistic as it sounds, a verification system of consumers ‘riding their bikes over to see the projects,’<sup>44</sup> might prove more effective than an expensive third-party verification processes.

Were students to ride their bikes over, they might learn a thing or two about an exciting way to reduce GHG emissions. They might become more involved with the project, conducting research on a certain type of methane capture or leading large numbers of fellow students to change light bulbs. Although carbon offset companies might argue that their offsets are educational due to the large amount of information posted on their websites, traditional offsets come nowhere close to meeting the educational value of researching, developing and implementing a carbon offset project.

In 1970, American college students lead the way in the development of Earth Day, a commemoration of the environment now celebrated around the world. Since then, campus sustainability has moved from occasional student protests to

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<sup>44</sup> Interview with Dave Newport

administratively designed campus-wide plans (Breen, 2008). Given the widespread social and educational benefits of local offset programs and the problems with the traditional market, should not 2010 be the year that American colleges and universities lead the way to a more equitable form of carbon offsets?

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