Carbon Offsets: How to ensure that university offsets are real and ethical

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Human-created Emissions

Source: www.unido-ichet.org
President John Haeger signs American College & University Presidents Climate Commitment (ACUPCC)- 2007

- Commits NAU to going carbon neutral by 2020
- Establishes offsets as last part of carbon mitigation plan, and only after commitment to conservation and significant overall reductions
- Provides a guide for Universities in what they should look for in choosing offsets
Spring 2007: Greenhouse Gas Emissions study for NAU completed
NAU Total Emissions (By Sector)

Year:
- 1991
- 1992
- 1993
- 1994
- 1995
- 1996
- 1997
- 1998
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006

MTCO$_2$e
- Purchased Electricity
- Transportation
- Natural Gas
- Solid Waste
Important issues to consider:

- This is a common breakdown of greenhouse gas emissions for Universities
- Transportation (air travel, in particular) will be difficult to reduce to zero
- Natural gas use will be difficult to reduce to zero without dramatic changes on all campus buildings
One Option:

Purchasing carbon offsets from carbon reduction efforts elsewhere
Carbon Offsets:

There are two markets for offsets:

1. Compliance markets

2. Voluntary markets
   (NAU would fall under voluntary market)
Carbon Offsets: Will be part of any carbon neutral plan

- General concern that carbon offsets are a cheap way to buy yourself out of responsibility (limit offsets to a small percentage of overall mitigation plan?)

- The question, then, is how to create carbon offsets that are both ethical and real
Types of Offsets:

- Bio-sequestration
  - Forestry

- Methane Capture (landfills, feedlots)
• Fuel-switching
  - for example: from Oil to Natural Gas, from Diesel to Biodiesel

• Renewable energy project
Main Concerns When Choosing Type of Offset:

- **Additionality**: Is it a *reduction* as opposed to avoided emission? Would the project have happened anyway? Project must establish baseline to measure against.
  - Barriers
  - Financial
  - Timing
  - Compliance
• **Permanence:** Will the project, such as forestry project, be protected? How can we ensure that the captured carbon will not be re-released? Is it reversible?

• **Time-frame:** Are the offsets good for this year? Is the timing appropriate?

• **Verification:** Independent review; choosing a standard that is acceptable for our University. Is it under clear and transparent contract? Are the finances of the offset provider open for review?
• **Leakage**: Emissions from offset project itself, have they been calculated? Have emissions been pushed somewhere else?

• **C0-benefits**: Has conservation of bio-diversity been included (forestry)? Is there local job creation (solar panel installation, methane capture project)? What co-benefits do we want/are possible?

• **Retired in a registry**: Have the offsets been tagged so that they are not counted twice?
Questions?

- For the offsets to be accepted by the larger community, there will need to be third-party certification.
- What type of offsets would be acceptable for a University?
- How do we monitor our emissions reduction progress (or expansion, as the case may be)?
Offsets through Forestry:

- The world’s forests, along with our soils and oceans, absorb 3.2 billions tons of carbon per year.
- Humans produce 7 billion tons of carbon per year.
- This means that we produce 3.8 billion tons of carbon more than what the Earth is capable of absorbing, every year.
Deforestation:

- The world’s forests contain over 250 Billion tons of carbon, as one gigantic sink. Including soils, this number is as high as 1,100 Billion tons. As these forests are cut down, that carbon is released to the atmosphere. Deforestation represents 20% of all human-created greenhouse gas emissions.
Afforestation/Reforestation:

- Trees sequester carbon. Roughly 50% of the biomass of a tree is carbon. As farmers and project developers plant trees and sequester carbon, they can sell the sequestered carbon as credits.