CARBON OFFSET MARKETS

MN Legislative Energy Commission Symposium on Terrestrial Carbon Sequestration

JESSICA SHIPLEY
PEW CENTER ON GLOBAL CLIMATE CHANGE
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2. Offsets basics

3. Current offset policy context
   • Mandatory cap & trade programs
   • Voluntary cap & trade programs
   • Other mandatory programs
   • Voluntary offset programs and standards
   • State- and regional-level initiatives

4. Future offset policy context
   • International negotiations
   • Federal policy making
• Founded in May 1998
• Independent, non-profit, non-partisan
• Produces **research** on policy, economics, science & impacts, and solutions
• Works with **policy-makers** at the state, federal, and international levels
• Conducts **education** and outreach
• Engages **business** community through the Business Environmental Leadership Council
"We are committed to a pathway that will slow, stop and reverse the growth of U.S. emissions while expanding the U.S. economy."
OFFSET QUALITY INITIATIVE
A partnership promoting effective greenhouse gas offset policy
WHAT IS AN OFFSET?

- **Definition**: An offset is the reduction, removal or avoidance of emissions from a specific project that is used to compensate for emissions occurring elsewhere.

- **Purpose**: The purpose of offsets is the achievement of a real and verifiable reduction in GHG emissions beyond what would have otherwise occurred (such that it is equally effective as onsite emission reductions by regulated entities).

- **In a cap-and-trade system**: Offsets are generated by projects in entities outside an emissions cap, and purchased by capped entities to meet compliance obligations.
OFFSET BENEFITS

- Drive emission reductions in uncapped sectors
- Motivate new technology in sectors not capped
- Incentivize technology transfer to developing countries
- Build capacity and political support for climate change mitigation in developing countries
- Provide significant cost containment: offsets can dramatically lower costs of cap & trade
There are three basic project categories:

1. Direct emission reductions
   - Reductions occur at project site
   - Example: Methane capture

2. Indirect emission reductions
   - Reductions occur at a location other than project site
   - Example: renewable energy generation projects

3. Biological sequestration
BIOLOGICAL SEQUESTRATION

• An activity that removes and stores CO\textsubscript{2} or other GHGs from the atmosphere or avoids the release of stored carbon into the atmosphere, for example:
  
  – Cultivation of new forests or grasslands
  – Changes in farming practices
  – Reduction of soil disturbance in agriculture (no till)
  – Avoided deforestation
SEQUESTRATION OFFSET CONSIDERATIONS

- Baseline establishment
  - Hypothetical scenario of emissions that would have occurred in the absence of the project(s)

- Additionality
  - Show that the activity would not have occurred if not implemented as an offset project

- Permanence
  - Biological and geological sequestration can be reversed

- Leakage
  - Increase in emissions outside a project’s boundary due to project

- Range of policy options emerging to address these considerations
  - Insurance mechanisms, buffer accounts
  - Easements and long-term leases
  - True-up against national forestry baselines
# Sampling of the Offset World

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CDM AND THE KYOTO PROTOCOL

- Industrialized countries with GHG commitments under the Kyoto Protocol may meet part of their targets through offsets in the Clean Development Mechanism (CDM)

- Majority of global offset project transaction volumes and value have occurred via this mechanism

- Recent dominance of renewable energy and methane projects

Number (%) of CDM Projects in Each Category

Source: UNEP Risoe Center, 2008
**MANDATORY CAP & TRADE: REGIONAL**

- Regional Greenhouse Gas Initiative (RGGI)
  - First 3-year compliance period started in January 2009
  - Facilities can meet 3.3% of compliance obligation through offsets
  - No offset credits have yet been traded, but applications have been received
  - 5 project types, including afforestation and avoided methane emissions from manure management
  - Projects must be located within a RGGI participating state, or where an agency has an MOU with RGGI.
  - Additionality: evaluated through benchmarks and performance standards. General requirements for all projects, and project-specific requirements

- Eligibility of credits for early action under federal program
  - RGGI projects likely to qualify with current bill language: “established by State or Tribal law...”
• Midwestern Greenhouse Gas Reduction Accord (Midwest Accord):
  • Aiming for first compliance period to begin January 1, 2012.
  • Offsets should be limited to 20% of each regulated facilities’ compliance obligation.
  • Eligible project types, project sizes, start dates, crediting periods, co-benefits requirements are yet TBD.
  • Projects are likely to be limited to Accord participating jurisdictions and states that sign an MOU with the Accord, may be required to have a GHG regulatory program comparable to the Accord.
  • Additionality, monitoring, and certification requirements are largely undefined.

• Eligibility of credits for early action under federal program
  • The advisory group recommends that the jurisdictions work to ensure that offsets issued under the Accord are recognized by a federal program.
Voluntary, but becomes contractually binding once you elect to participate

- Offsets currently account for ~15% of all reductions achieved
- Average prices for offsets have been $2-$7.5 per metric ton CO₂e
- As of March 2009, CCX registered ~60 MMT CO₂e in offsets.
- Baselines are pre-defined for each eligible project activity, except for a few project-specific baselines
Voluntary Offset Standards: Basics

- Enables businesses, governments, individuals to voluntarily offset their emissions
- Functions outside compliance markets (such as Kyoto Protocol, RGGI)
- Drawbacks:
  - Demand is only created by these voluntary buyers, rather than by a regulatory instrument
  - Low demand, lack of universal quality standards, lack of fungibility in compliance markets = less valuable than offsets in compliance markets
- Benefits:
  - Allows for experimentation and innovation
  - Allows individuals to engage in the solution
  - Niche for micro projects or those not covered by compliance schemes
Voluntary Offset Standards: The Market

- Estimates of the size of the voluntary market vary widely
- Prices depend on:
  - Project type
  - Market demand
  - Stringency of program requirements (offset quality)
  - Delivery guarantees and contract terms
- No readily available metrics exist for customers to know how price is determined or what price means for the quality of the offset

Voluntary Programs:
- Climate Action Reserve
- Chicago Climate Exchange (voluntary but based on cap & trade)
- Voluntary Carbon Standard
- American Carbon Registry
- Gold Standard
- VER+
- Climate Community and Biodiversity Standards
- Plan Vivo
- Social Carbon Methodology
Voluntary Offset Standards

- Difficulties the voluntary market faces
  - Lack of consistent rules
  - Inconsistent demand for some programs
  - Price instability
  - Trouble assuring quality
    - But moving toward more professionalization and transparency

- Future of the voluntary market
  - Volume of trading in voluntary markets is almost all pre-compliance
  - Development of agriculture sector protocols will like be a focus for many programs
  - Likely to be a voluntary market even after a regulatory market is put in place, as seen in the EU
Oregon became the first state to regulate GHGs: new fossil fuel-fired energy facilities must offset a portion of their emissions or pay a fee to purchase offsets.
  - Washington and Massachusetts adopted similar programs

The Climate Trust is responsible for finding and investing in those offset projects
  - 1.5 million metric tons of CO₂ have been offset

There are concerns about actual levels of emission reductions

Unclear whether these offsets will be eligible for regional or national programs
PROPOSED FEDERAL OFFSET PROVISIONS

• H.R. 2454, ACES Act (Waxman-Markey) passed the House on June 26, 2009.

• S.1733, CEJAP Act (Kerry-Boxer) was introduced on September 30; Chairman’s Mark released October 23; reported from EPW November 6

• EPA analysis: in 2015, a supply of ~170 million tons of CO$_2$e would be available in the domestic offset market
  • Up to 1 billion tons are allowed by Waxman-Markey, 1.5 billion tons in Kerry-Boxer.

Source: EPA Analysis of HR 2454, 2009
• A few important common provisions:
  • Protocol approach is expected, rather than project-by-project
  • Involvement of both USEPA and USDA likely
  • Offsets integrity advisory board: advise the Administrator in making regulations and ensuring overall environmental integrity, provide list of recommended project types
  • Permanence: Administrator must establish policies to account for reversals and assign liability for compensating
    • Offset reserve is one option described by the legislation
  • Term offsets: projects can only generate credits during the term period. The buyer is responsible for replacing the credits.
  • Early offset supply: where sequestration occurred after Jan 1, 2009, and issued under a program that was established by State or tribal law.
    • Other programs may qualify, but it is not yet clear which
PROPOSED FEDERAL OFFSET PROVISIONS

• Current key differences between the two bills:
  • Delay of EPA regulatory authority over uncapped sources in Senate bill
  • Ambiguity in Senate bill regarding authority over offsets program
  • Tighter limit on use of international offsets in Senate bill

• A compliance scheme (formal cap & trade system) will help address some shortcomings of the voluntary market
  • Create more certain demand driven by a regulatory instrument, rather than individual and business consumers
  • Streamline quality standards and all other rules
• Offsets will be in any federal climate bill, likely to be permitted domestically at a level above potential supply
• Likely a positive list of project types including many options for agriculture
• Rigorous voluntary and mandatory schemes are likely to be the starting point for federal rules
• Unclear which federal agency will manage or how authority will be shared
JESSICA SHIPLEY

SOLUTIONS FELLOW
PEW CENTER ON GLOBAL CLIMATE CHANGE

SHIPLEYJ@pewclimate.org

www.pewclimate.org