



# **CARBON OFFSET MARKETS**

**MN Legislative Energy Commission Symposium on  
Terrestrial Carbon Sequestration**

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1. About the Pew Center
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

# BUSINESS ENVIRONMENTAL LEADERSHIP COUNCIL





# USCAP

United States  
Climate Action  
Partnership

"We are committed to a pathway that will slow, stop and reverse the growth of U.S. emissions while expanding the U.S. economy."



WORLD  
RESOURCES  
INSTITUTE



# OFFSET QUALITY INITIATIVE

A partnership promoting effective greenhouse gas offset policy

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# 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



# TYPES OF PROJECT CATEGORIES



There are three basic project categories:

## 1. Direct emission reductions

- Reductions occur at project site
- Example: Methane capture



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<sub>2</sub> 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

Reforestation



New farming practices

# 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



Kyoto Protocol and Mandatory Cap & Trade Systems	Voluntary Cap & Trade Systems	Other Mandatory Programs	Voluntary Carbon Offset Standards and Protocols	Pending Federal Mandatory Cap & Trade Legislation
<ul style="list-style-type: none"> <li>•Clean Development Mechanism</li> <li>•EU Emissions Trading scheme</li> <li>•Regional GHG Initiative (RGGI)</li> <li>•Western Climate Initiative</li> <li>•Midwestern GHG Accord</li> </ul>	<ul style="list-style-type: none"> <li>•Chicago Climate Exchange</li> </ul>	<ul style="list-style-type: none"> <li>•Alberta-based Offset Credit System</li> <li>•State power plant rules in OR, WA, and MA</li> <li>•British Columbia Emission Offset Regulation</li> </ul>	<ul style="list-style-type: none"> <li>•Climate Action Reserve (CAR)</li> <li>•Gold Standard</li> <li>•Voluntary Carbon Standard</li> <li>•American Carbon Registry</li> </ul>	<ul style="list-style-type: none"> <li>•Waxman-Markey (H.R. 2454)</li> <li>•Kerry-Boxer (S.1773)</li> </ul>

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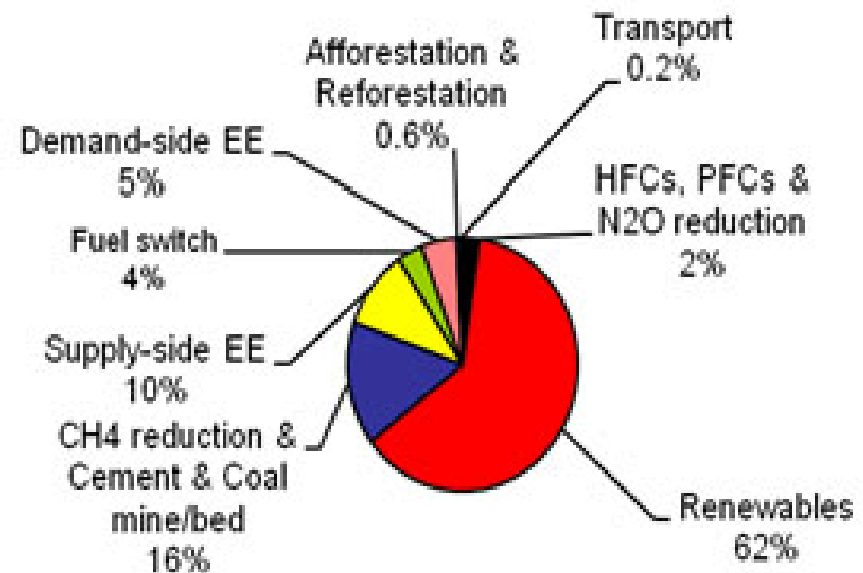
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# CDM AND THE KYOTO PROTOCOL



- 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...”

# MANDATORY CAP & TRADE: REGIONAL



- 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 CAP AND TRADE: CCX



- 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 CO<sub>2</sub>e
- As of March 2009, CCX registered ~60 MMT CO<sub>2</sub>e in offsets.
- Baselines are pre-defined for each eligible project activity, except for a few project-specific baselines



No-till corn



Cover cropping

# 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

- 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

# STATE-LEVEL INITIATIVES UTILIZING OFFSETS

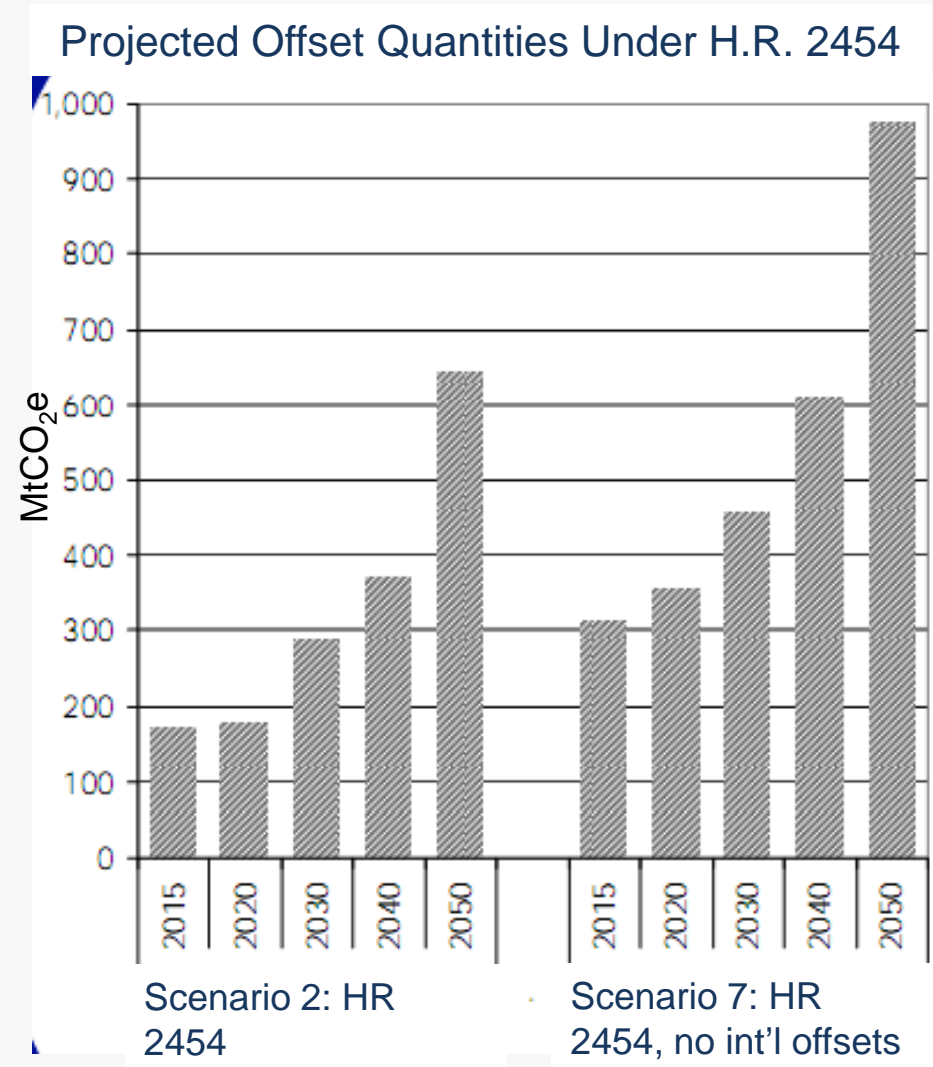


- Oregon became the first state to regulate GHGs: new fossil fuel-fired energy facilities must offset a portion of their emissions or pay a fee to purchase offsets.
  - Washington and Massachusetts adopted similar programs
- The Climate Trust is responsible for finding and investing in those offset projects
  - 1.5 million metric tons of CO<sub>2</sub> 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<sub>2</sub>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

# PROPOSED FEDERAL OFFSET PROVISIONS



- 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



FOR MORE INFORMATION



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