

GHG Project Based Emission Reductions in the Nascent U.S. Market

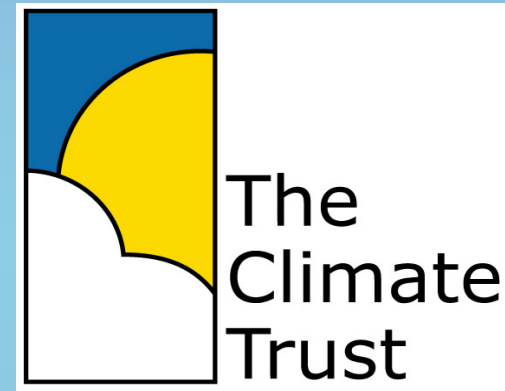
“Creating GHG Markets in the US”
Committee on Energy Resources and the
Environment

February 14, 2006
Washington, D.C.

Bjorn Fischer
Business Development Manager
The Climate Trust

The Next 15 Minutes...

- What is a project based emission reduction (“offset”)?
 - Importance of quality
- Who is The Climate Trust?
 - Market leader and policy resource
- What role can offsets play in a GHG constrained future?



What is an Offset?

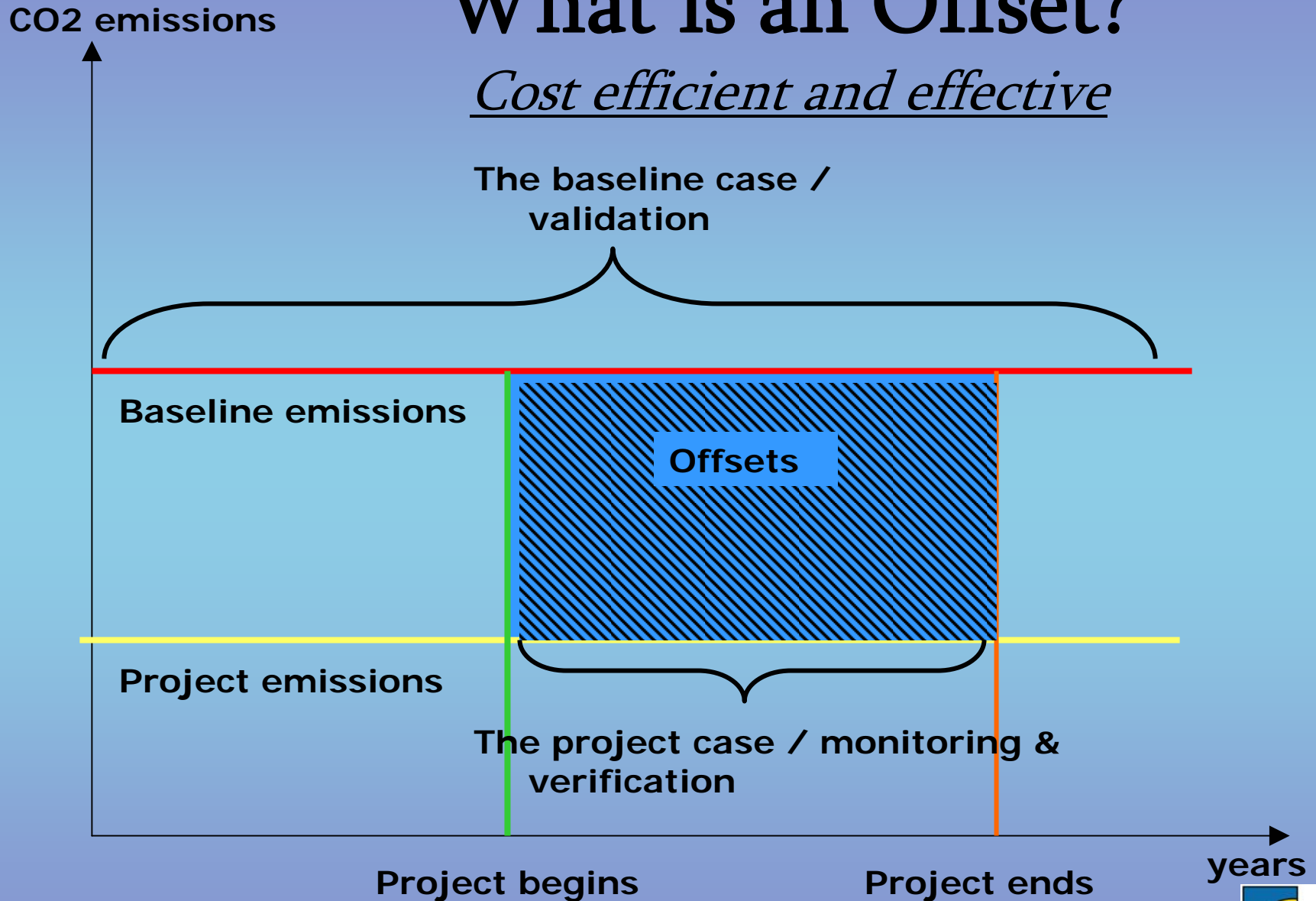
Concept Originated in Accounting in 1769

- Dictionaries tell us that an offset...
 1. Cancels out emissions
 2. That are recorded in a GHG ledger
(or the atmosphere)
 3. With an end effect as if the cancelled emissions had not occurred

- A “compensating equivalent”

What is an Offset?

Cost efficient and effective



Policy Rationale for Offsets

More Money for Everything Else We Really Want

- Very effective in reducing GHG levels
- Lower climate change mitigation cost to society
- Drive funding into un-capped sector
 - Drive new & innovative technology into un-capped sector
- Economic co-benefits
 - Create jobs; save money on energy; enhance energy security by reducing oil imports; create demand for clean energy products;
- Environmental co-benefits
 - Reduce air pollution; preserve biodiversity; improve habitat, watersheds, and water quality; reduce soil erosion; protect endangered species

Economic Rationale for Offsets

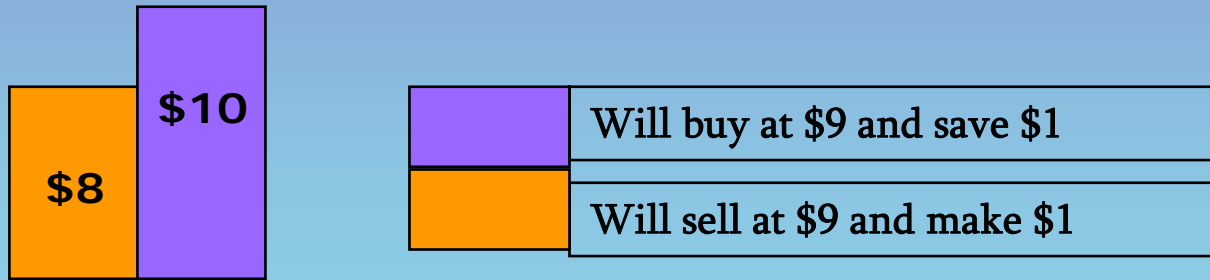
Estimated Ranges for Mitigation Costs

- **Illustrative GHG mitigation prices**
 - US Offsets (Climate Trust) \$4 - \$7/ton
 - Kyoto CDM offsets \$9 - \$12/ton
 - Allowances in Europe \$~20+/ton
 - Efficiency \$15 - \$40/ton
 - Wind Green Tags (\$10/mWh) \$~15/ton
 - Geo-Sequestration More

Why are Offsets Important?*

To save scarce resources for other societal needs

- “Cap and Trade” Logic: The gains of trade



Marginal cost of GHG reduction for given “market”

- Offset Innovation: Capturing Further Efficiencies



Marginal cost of GHG reduction with offsets

*Prices are for illustrative purposes only

Who is The Climate Trust?

Independent Buyer of GHG Offsets*

- Market Leader

- One of the largest, most experienced offset buyers in US and world markets

- **Portfolio:** 11 projects, \$4.5 million, 1.7 million metric tons CO₂

- **Pipeline:** Placing \$7 million more now

- 2 Major Programs

- Oregon Power Plant Carbon Dioxide Offset Program

- GHG Offset Partnership Program

- Large Emitters, Donate-to-Offset, Carboncounter.org

- Offset Policy Resource

- Contributing directly to viability and integration of offset policy at national, regional and state levels

*The Climate Trust is an independently governed 501c3

Diverse, High Quality Offset Portfolio

Offset: Specific Project That Reduces GHG Levels



Climate Trust and The Oregon Power Plant Program

1997: First CO₂ Legislation in the US

- **Oregon Power Plant Program Regulates CO₂**
 - New power plants have to comply to a 0.675 pounds of CO₂ /Kwh performance standard
 - Developer can comply by paying a per-ton fee to The Climate Trust
- **The Climate Trust Helps Implement this Law**
 - Independent non-profit, not a state agency
 - The Climate Trust acquires, manages and retires CO₂ offsets on behalf of developer
 - Only US entity with regulatory recognition for our offsets
 - Only US non-profit offset portfolio assembler

Cornerstones of Our Offset Portfolio

Quality Offsets are Trust's Highest Priority

- High standards, rigorous review process
 - Additionality
 - Robust third party verification of tons
- Strong offset contracts
 - Performance obligations with remedies
 - Define and defend ownership rights
 - Protection of capital in the last resort
- Diverse technology
- Competitive price

Quality Projects: Selection Criteria

Comprehensive List for The Climate Trust

- Additionality
- Cost effectiveness:
\$/metric ton of GHG
benefit
- Reliability of technology
- Reliability of project
partner
- Monitoring & verification
- Permanence
- Expandability
- Guarantees
- Portfolio diversity
- Location of project
- Co-benefits
- Replicability

Truck Stop Electrification

- I-5 Corridor in OR and WA
- “Shutting-down-and-plugging-in” shifts from diesel idling to lower carbon grid electricity
- 90,000 metric tons CO₂
- Saving estimated 10 million gallons of diesel fuel
- Emissions co-benefits:
 - 1,400 tons of nitrogen oxides (NO_x), 40 tons of particulate matter (PM)
- OEM increasingly “electric ready” = pent up demand
- 16 year contract



Need High Quality Standards

For Both Regulatory Compliance and Voluntary Market

- “Additional”: Mitigation measures that would not occur without offset project funding
 - Excludes common practice, regulated activities
- Project must be new to reduce atmospheric GHG
 - Compare to business-as-usual baseline (not base year)
- Subset of “environmentally beneficial”
 - Not all GHG allowances or renewables are additional
- Need rigorous quantification & contracting

Quality Projects: Additionality

Projects Must Create New Emissions Benefits

- Mitigation measures that would not occur without offset project funding
 - Excludes common practice, regulated activities
 - Money making projects eligible, if other barriers
- Types of barriers offset funding overcomes
 - Capital unavailable
 - Investment hurdle rate
 - No economic return

Is a REC a GHG Offset? (A1: maybe)

Assume: 1 mwh = 1 metric tons CO₂e

(A2: probably not here)

BEFORE REC Sale as an Offset

AFTER REC Sale as an Offset

= 1,000 metric tons CO₂e

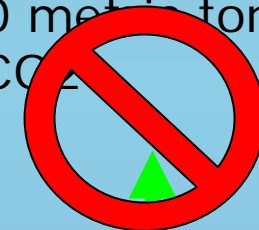
= 1,000 metric tons CO₂e

1,000 metric tons CO₂e

0 metric tons CO₂e

1,000 metric tons CO₂e

0 metric tons CO₂e

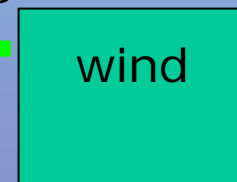
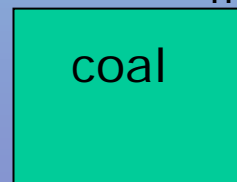
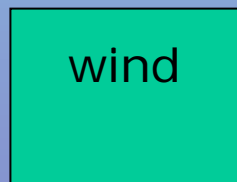
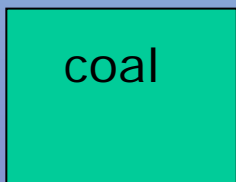


1,000 mwh

1,000 mwh

1,000 mwh

1,000 mwh



1,000 metric tons CO₂e from RECS



Additional Renewables Can Be Offsets

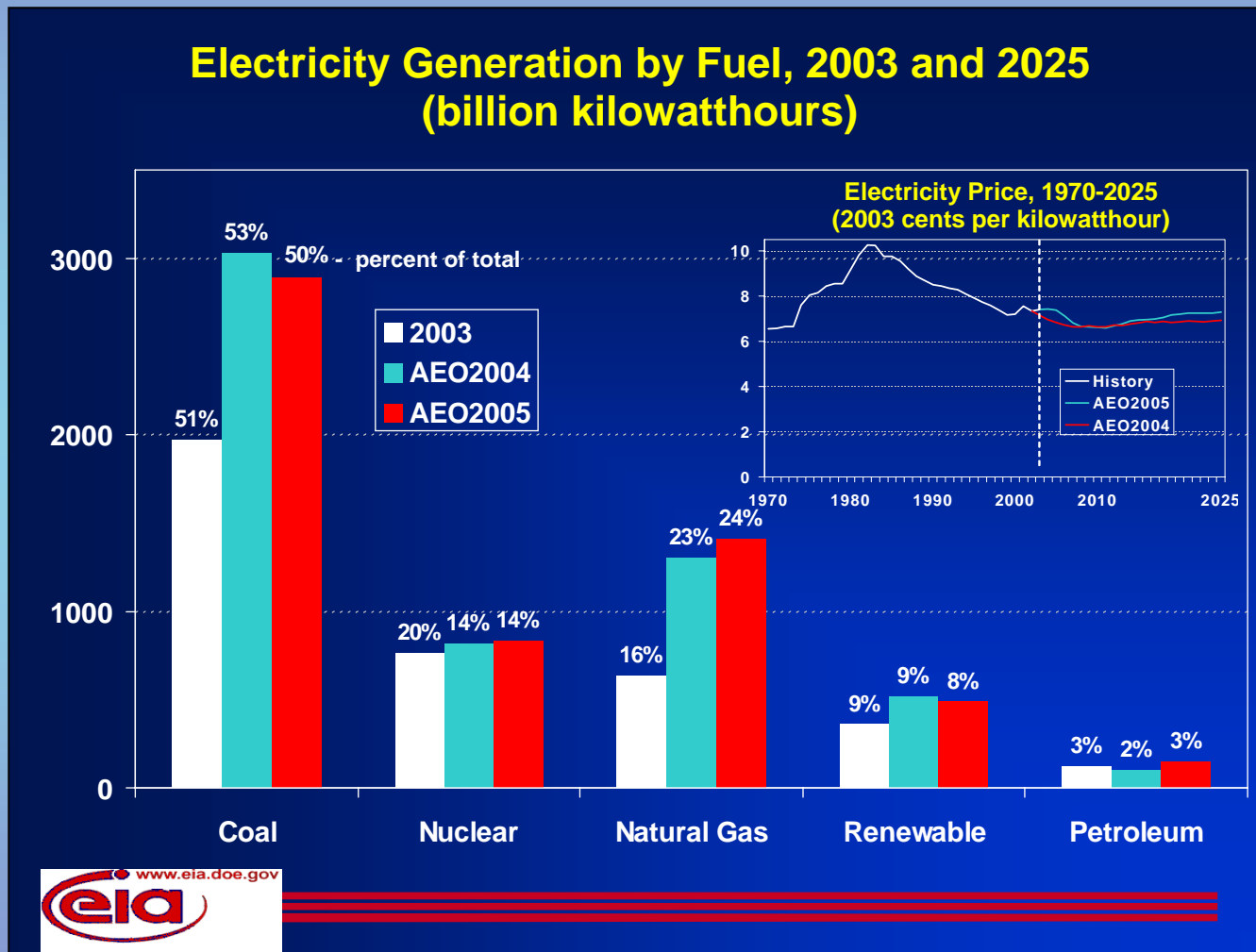
*The Following Should NOT Be Eligible as Offsets**

- Used to meet a Renewable Portfolio Standard
- Used to meet state GHG emissions reductions regulations
- Used to comply with a legal settlement
- Used to comply with an enforcement action
- Required by an integrated resource plan
- Paid for in a utility's general rates
- For which the renewable energy certificates have been sold into some other renewable energy market.

*From RE Steering Committee of RGGI, 2004

Electric Sector GHG Projections

3.3 Billion Tons CO₂/Year Added Tons (80% Coal)



Source: EIA Annual Energy Outlook 2005

Offsets Fill a Crucial Need: Now *Critical to Transition to Lower Carbon Economy*

- Electricity sector economics
 - Fuel price dynamics: Lower cost = higher GHGs
 - IGCC coal is in early commercial stages
 - Geological sequestration: ~15 years, if it works
 - Renewables and efficiency: “GHG-free” options can meet only part of growth
- Role of offsets
 - *Help electric sector deliver lower carbon power during transition to next generation coal, renewables, and efficiency*

How we can work together

Anticipate Broader National Operations

- When rules are in place, registries and trades can move in tandem
- The Climate Trust can be a qualified organization in other places for protocol development, offset procurement, portfolio assembly & offset contract management

Offsets: Part of the Climate Solution

Lets Society Address Climate at Least Cost

- Quality is essential
- Environmental and economic co-benefits
- Bridge in transition to low carbon future



Thank You!

Bjorn Fischer
Business Development Manager
bfischer@climatetrust.org
Ph.: 1 (503) 238-1915
Fax: 1 (503) 238-1953
The Climate Trust