

The Voluntary Carbon Market

The Carbon Trading – Green Building Connection
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Agenda

- Voluntary Carbon Market Facts & Figures
- Voluntary Carbon Offset Standards
- The Voluntary Market and Green Buildings

What Are Carbon Markets?

□ Cap-and-Trade Markets

- Currency: Allowances
- GHG emissions capped by total number of allowances
- SO₂ and NO_x model

□ Carbon Offset Markets

- Currency: Credits
- GHG *reductions* purchased from uncapped sources

□ Which Can Work Together...

- Credits may be bought and used as allowances under most GHG cap-and-trade systems

What Are Carbon Markets?

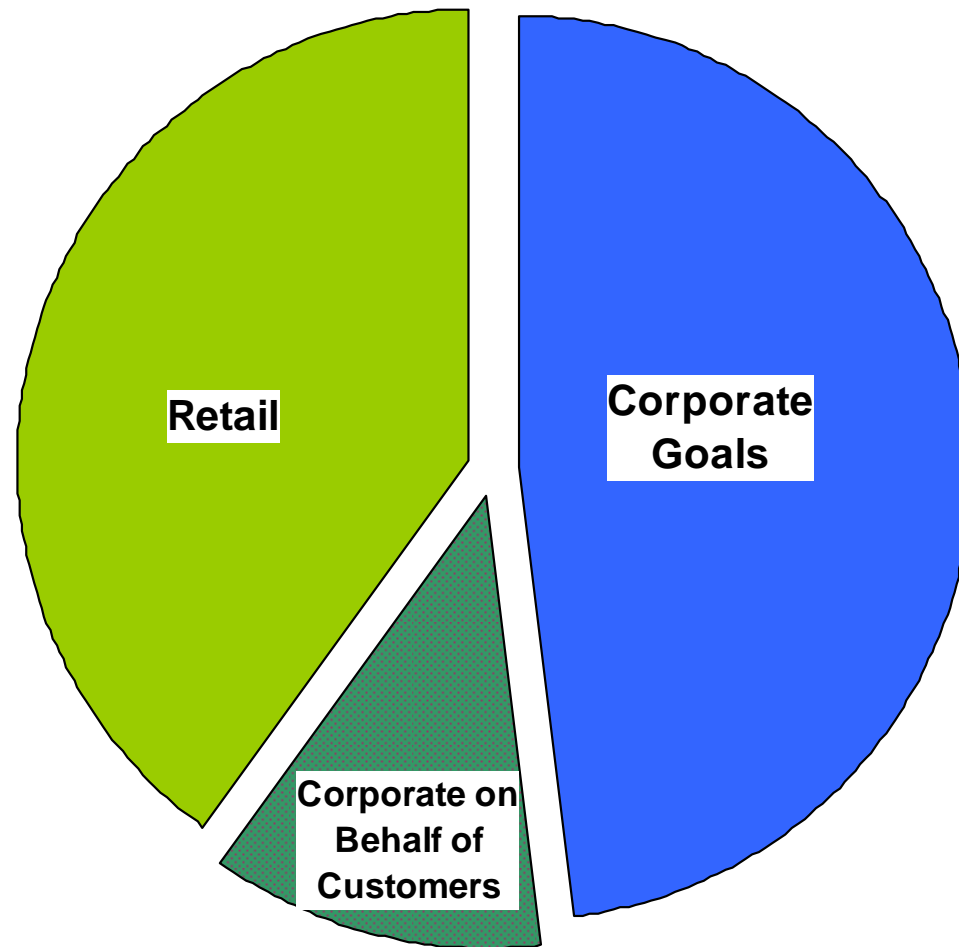
Mandatory and Voluntary

	Cap-and-Trade	Carbon Offsets
Mandatory	<ul style="list-style-type: none">• EU Emissions Trading System• Northeast U.S. Regional Greenhouse Gas Initiative (RGGI)	<ul style="list-style-type: none">• Kyoto Protocol's Clean Development Mechanism (CDM)• RGGI Offset Program
Voluntary	<ul style="list-style-type: none">• Chicago Climate Exchange	<ul style="list-style-type: none">• Personal offsets (e.g., for business travel)• Corporate offsets (e.g., to achieve "carbon neutrality")

The Voluntary Offset Market

- Demand has several drivers...

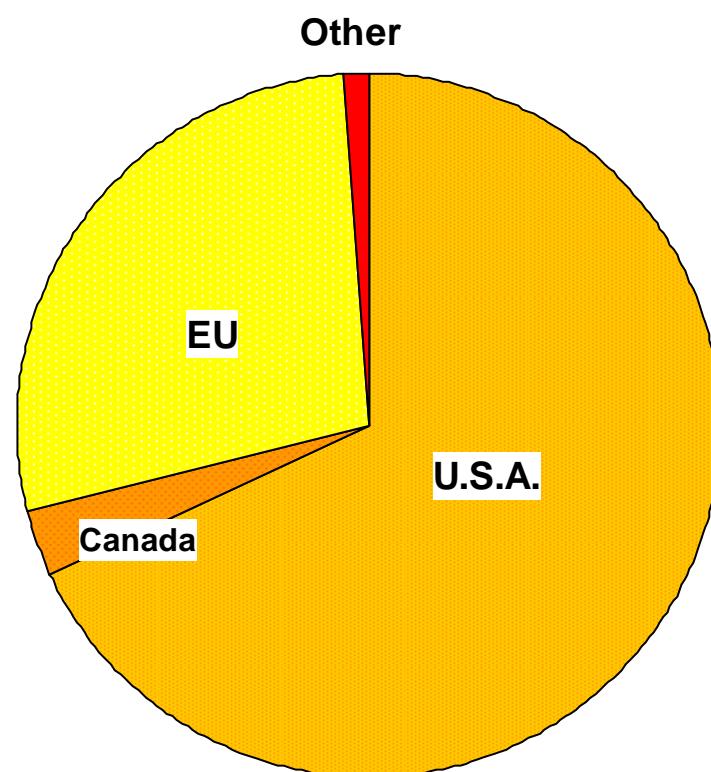
Retail
growing
fast...



Source: IIED 2006

The Voluntary Offset Market

- Demand is largely in U.S.A.

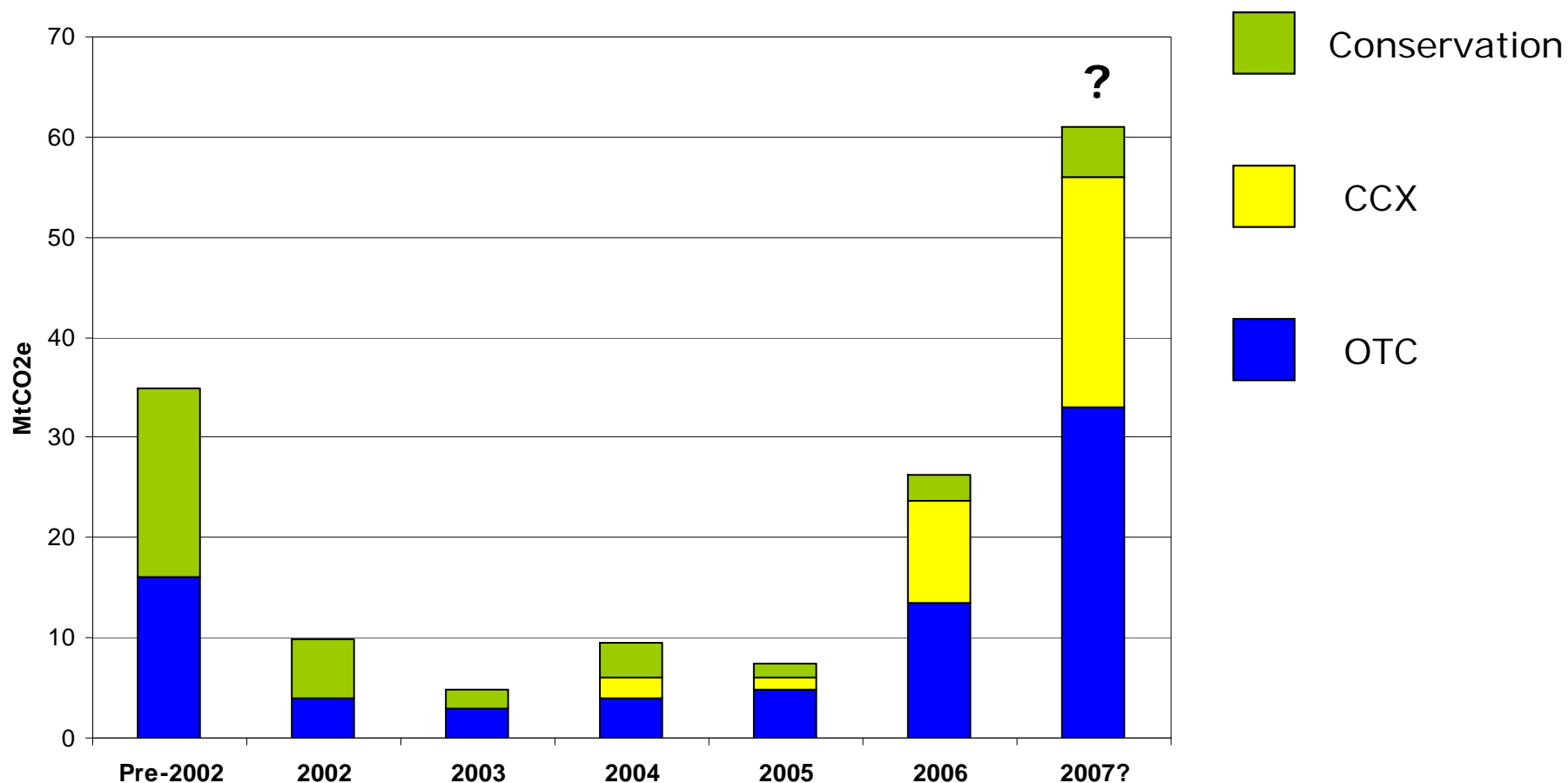


Source: Ecosystem Marketplace 2007

The Voluntary Offset Market

- The market is growing rapidly

Traded Volumes in the Voluntary Carbon Market

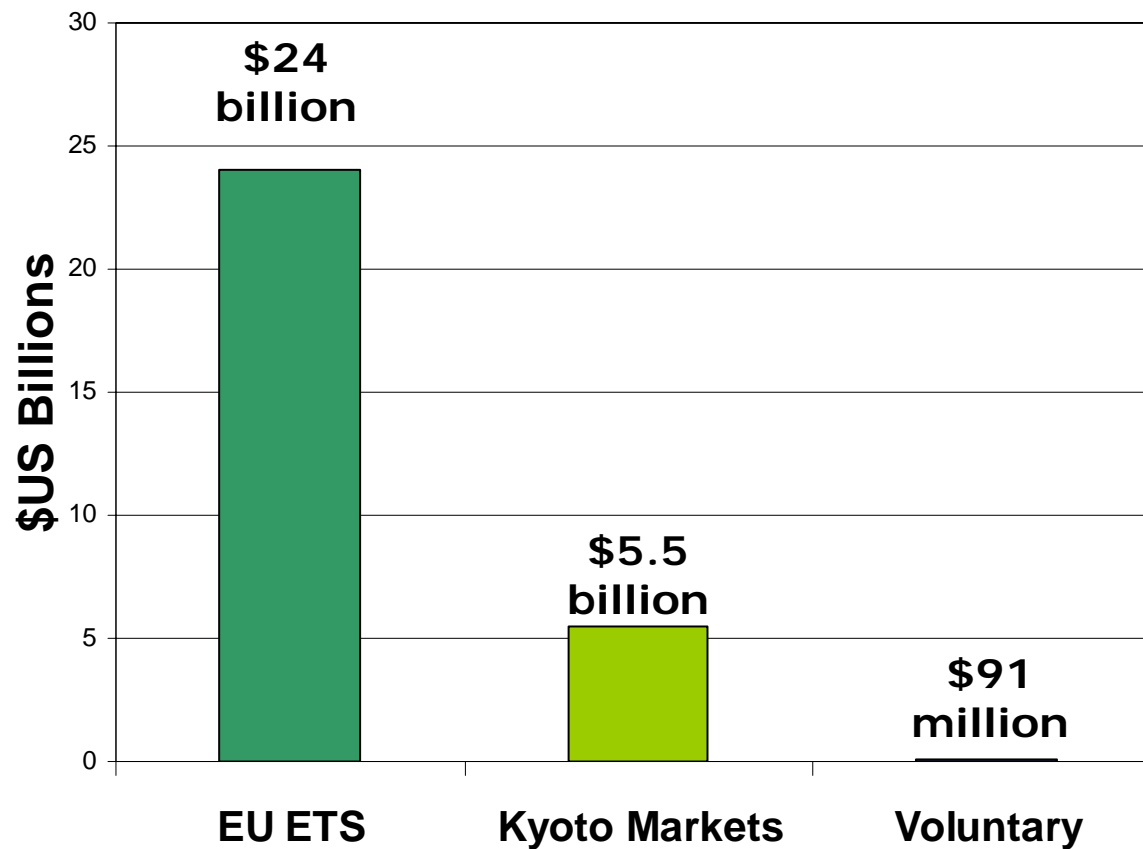


Source: Ecosystem Marketplace 2007

The Voluntary Offset Market

- But is still quite small

Value of Carbon Market Transactions 2006



Source: Ecosystem Marketplace 2007

The Voluntary Offset Market

- And primary demand is negligible

Voluntary Market Volumes for 2006



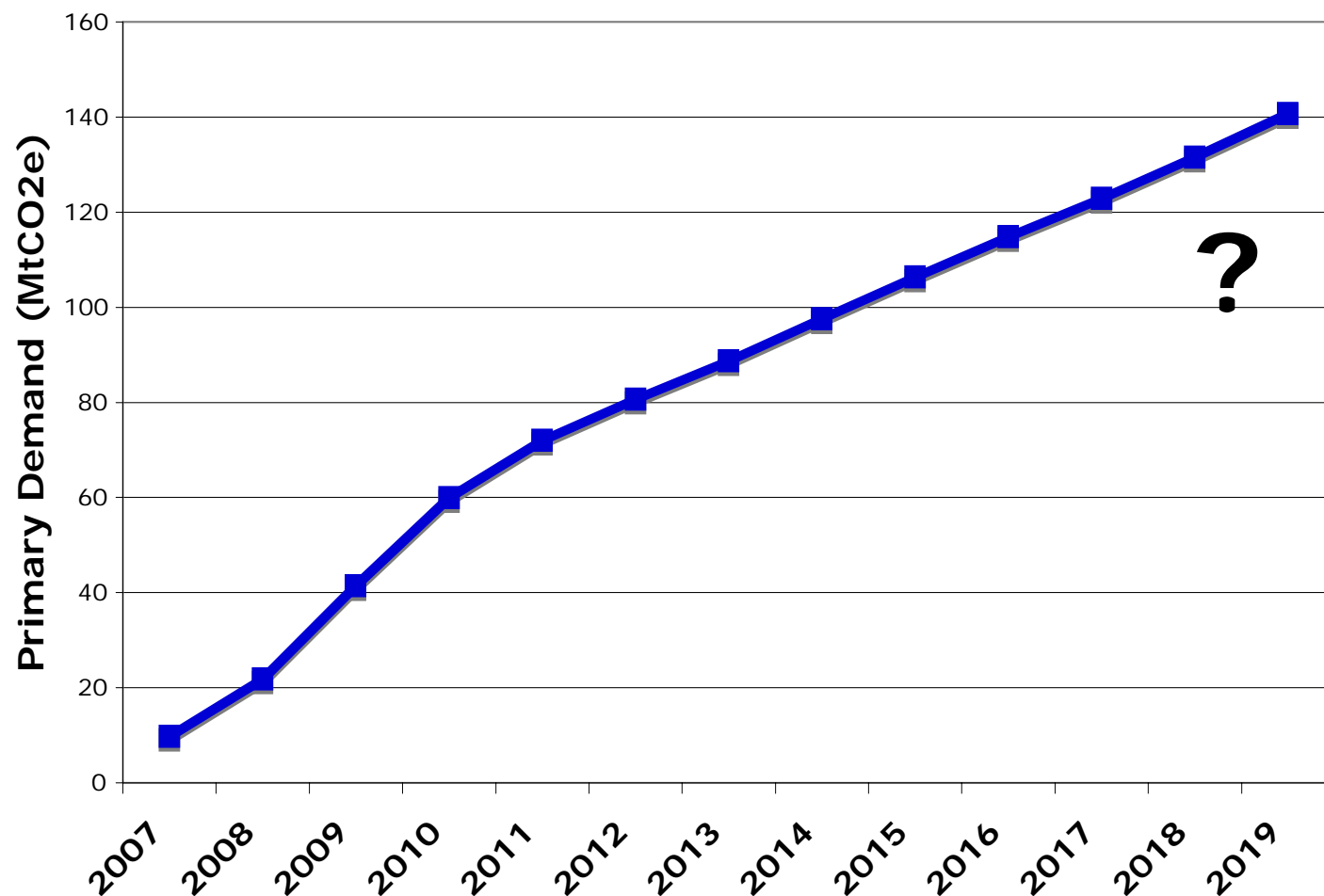
Voluntary Market:
4.2 million tons

Emissions from
human activities:
36 billion tons

Sources: Ecosystem Marketplace 2007
IPCC 2007

The Voluntary Offset Market

- Growth projections are uncertain

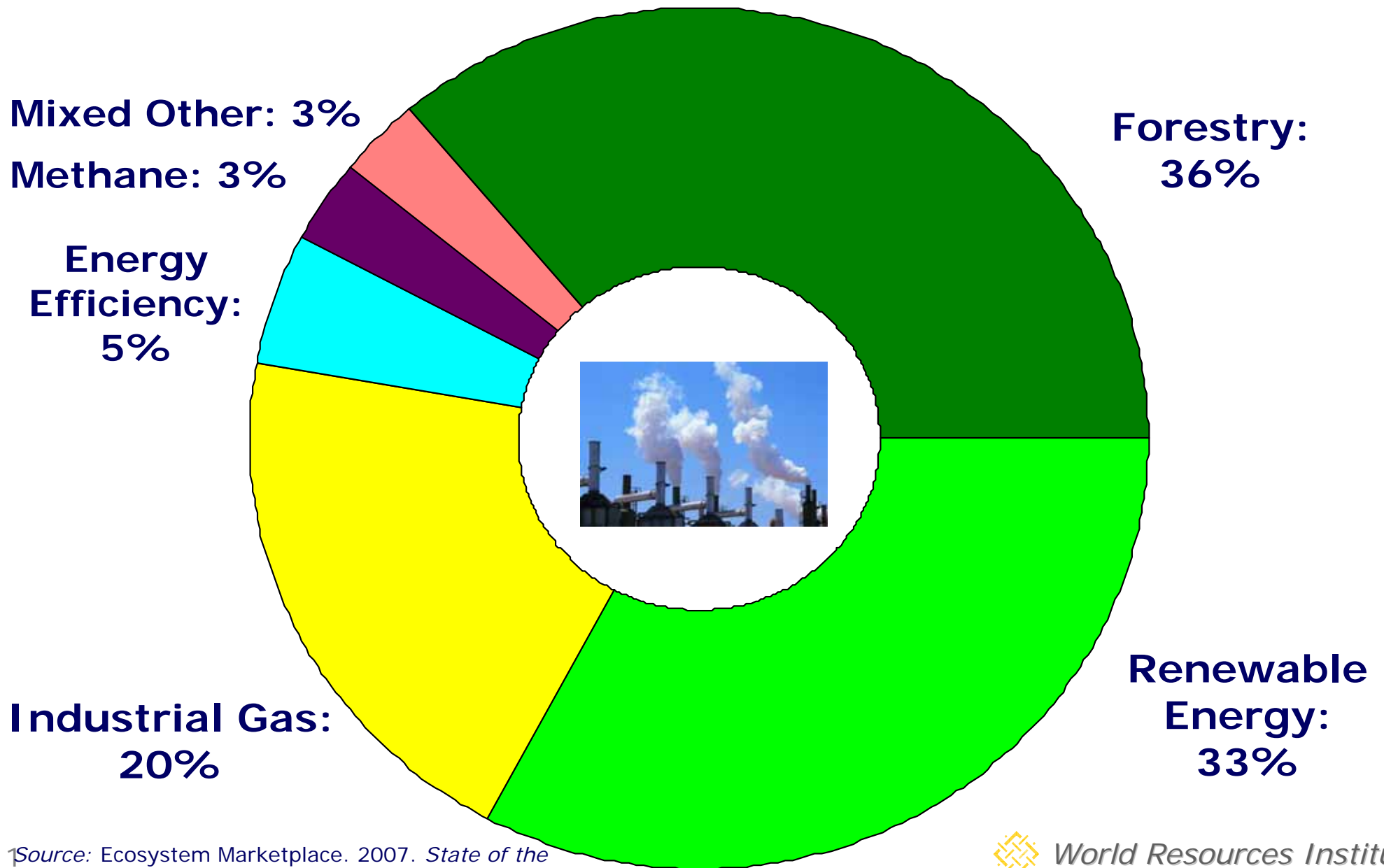


Depends on:

- Sustained demand
- Clarity on standards

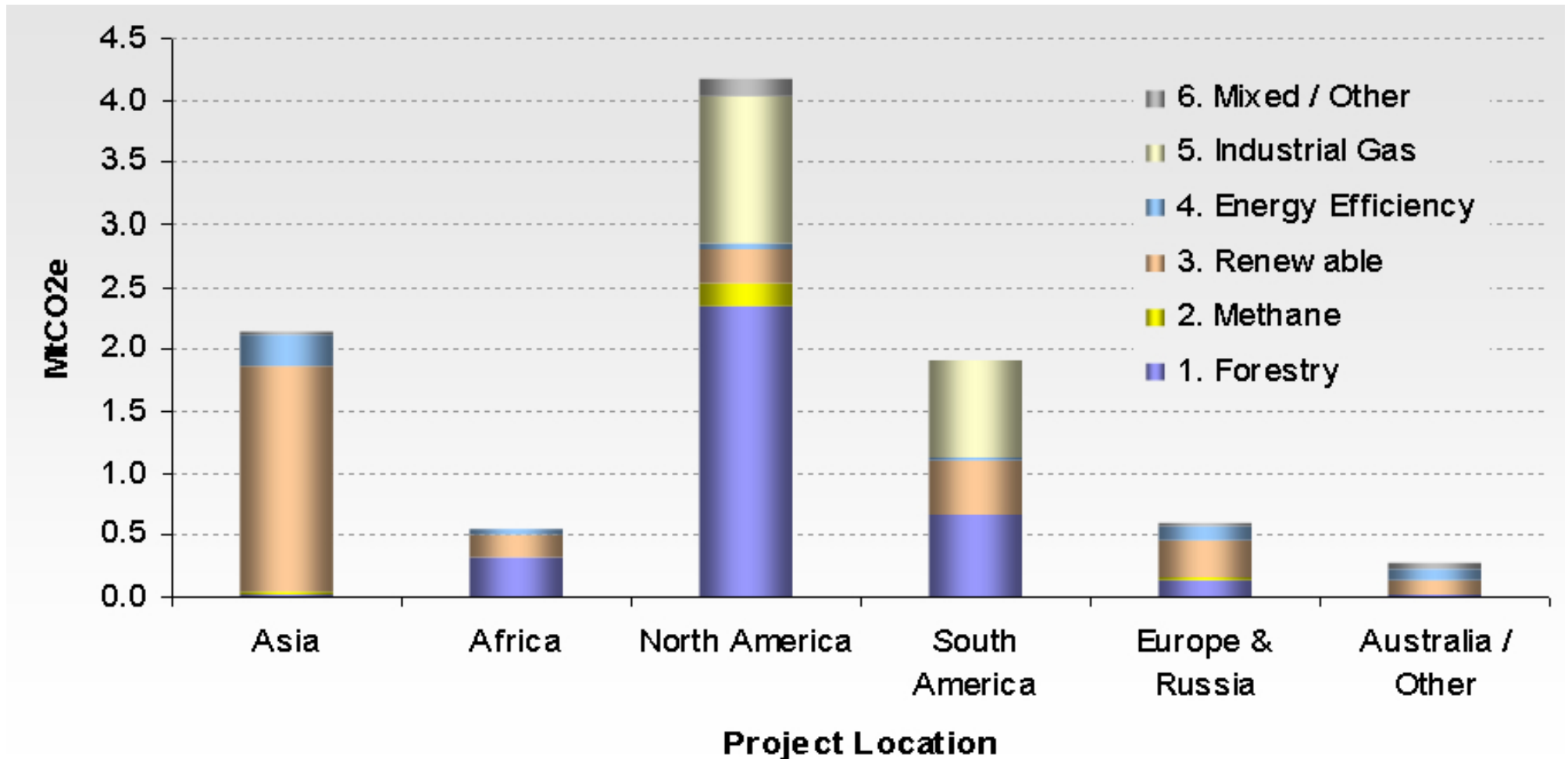
Source: Based on New Carbon Finance 2007

Voluntary Offset Project Types



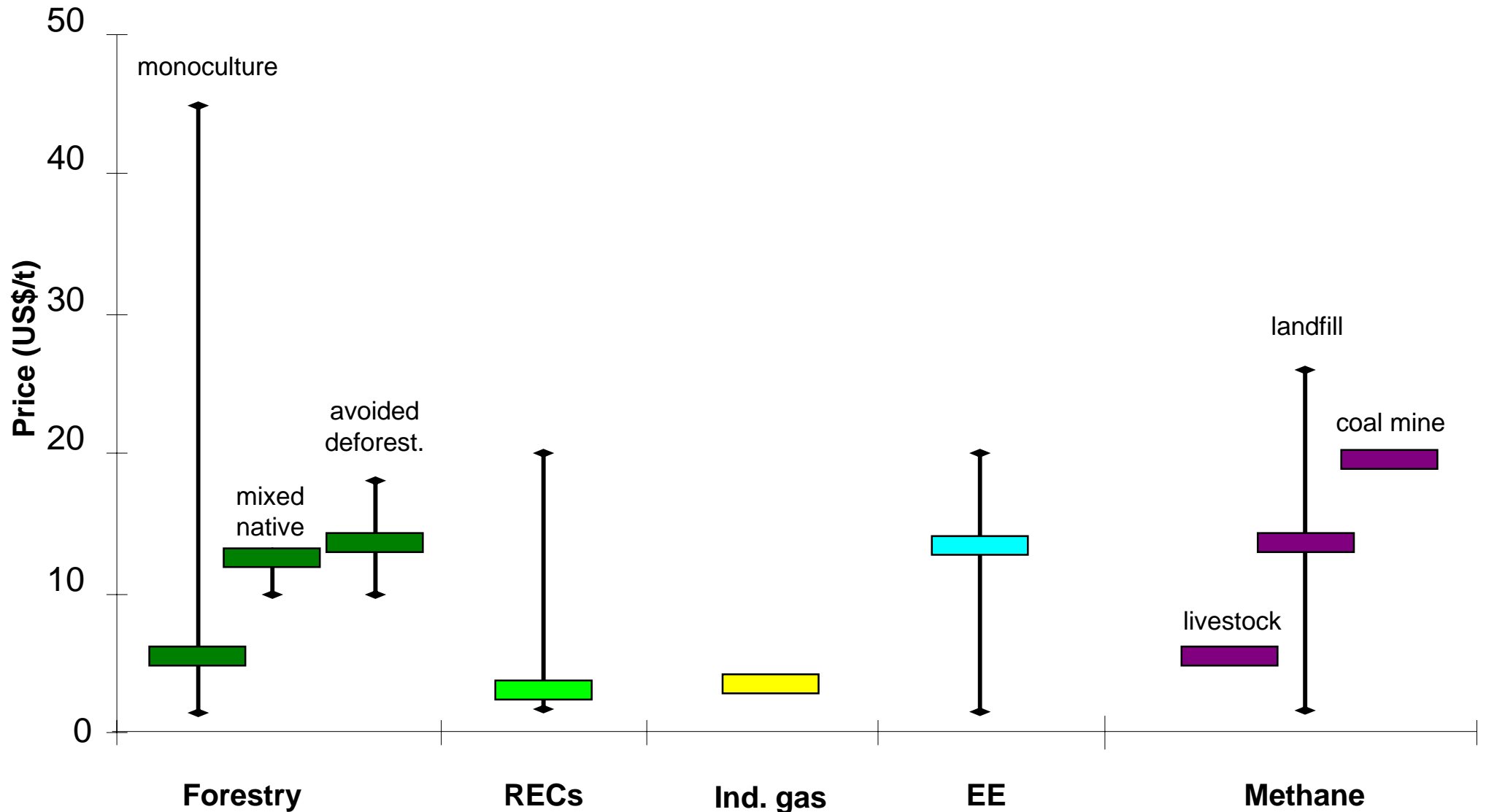
¹ Source: Ecosystem Marketplace. 2007. *State of the Voluntary Carbon Markets 2007: Picking up steam.*

Project Type by Location

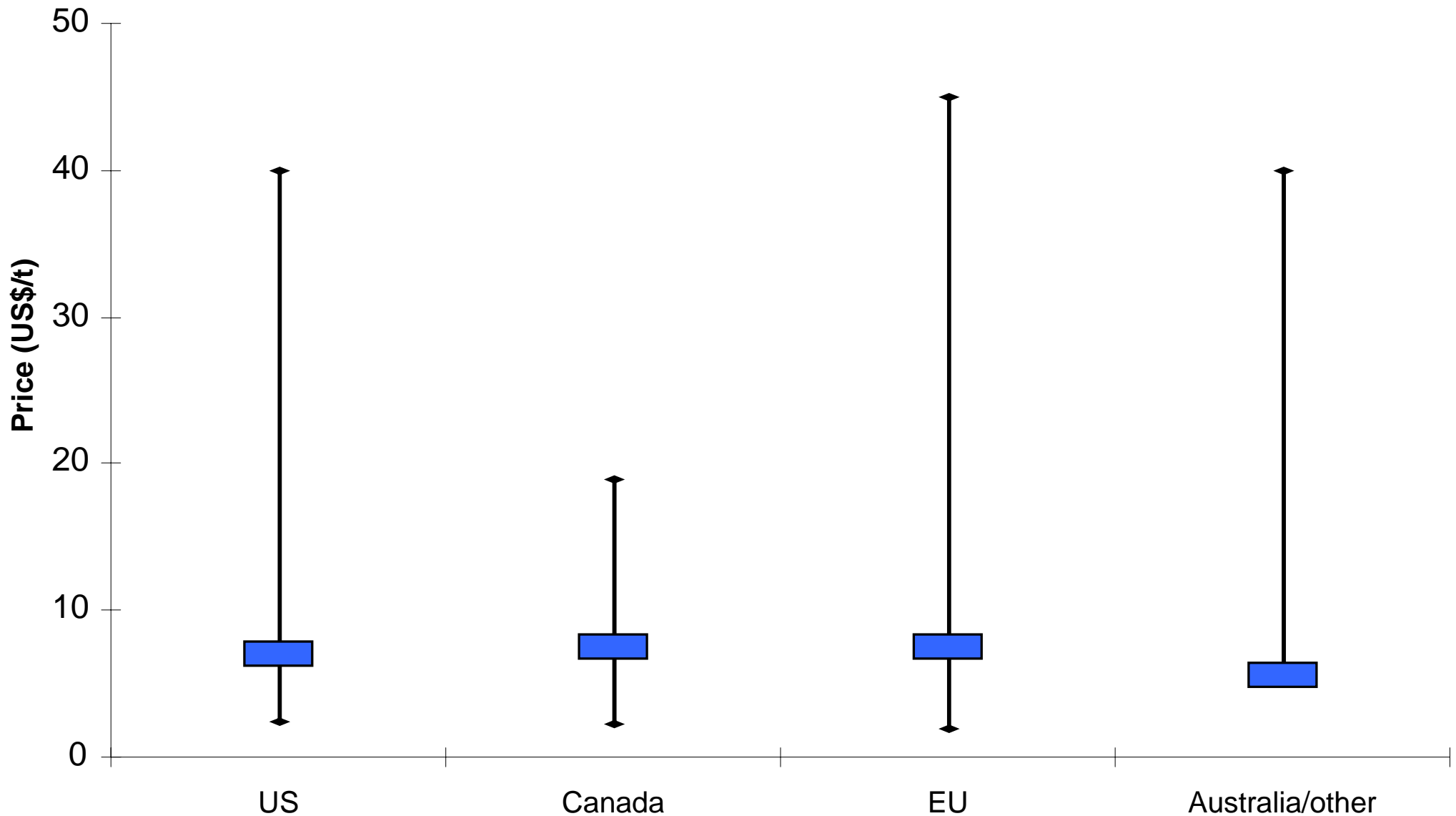


Source: Ecosystem Marketplace. 2007. *State of the Voluntary Carbon Markets 2007: Picking up steam.*

Prices Vary by Project Type



But Not Much by Buyer Location



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What is a Carbon Offset?



- *Simplest terms:* A purchased reduction in greenhouse gas (GHG) emissions
- *More technically:* A tradable instrument representing a verified reduction in GHG emissions

Defining Criteria for Carbon Offsets

...real?

Or is it a product of incomplete accounting?



...additional?

Or would Facility X have been upgraded anyway?



...verifiable?

Has a 3rd party certified that the project is reducing emissions?



...enforceable?

How many are claiming ownership of the offsets from this efficiency project?



...permanent?

Or will someone be logging my offsets ten years from now?



Three Elements of a Full Carbon Offset “Standard”

1) Accounting Standards

- Real
- Additional
- Permanent

2) Procedural Standards

- Verifiable

3) Contractual Standards

- Enforceable

Accounting Standards

Real

Additional

Permanent

Verifiable

Enforceable

- Project baseline identification
- Additionality
- Leakage
- Ensuring a “ton is a ton”



Procedural Standards

Real

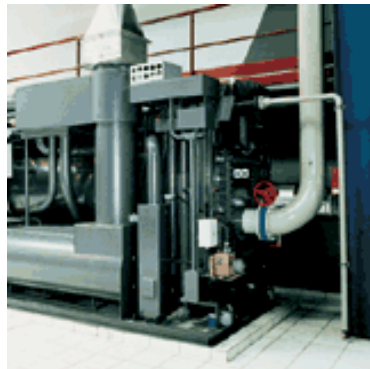
Additional

Permanent

Verifiable

Enforceable

- Validation of projects
- Monitoring & verification of project performance and avoided emissions
- Certification of GHG emission reductions



Contractual Standards

Real

Additional

Permanent

Verifiable

Enforceable

- Terms for payment and delivery of offsets
- Offset project risk allocation
- Transfer and tracking carbon offset “property rights”
- Avoidance of double-counting or double-claiming



Voluntary Carbon Offset Standards Are Proliferating...



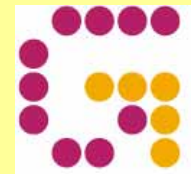
VER+
Standard



Climate

**Voluntary
Offset
Standard**

The Gold Standard



The Gold Standard
Premium quality carbon credits

Accounting

Procedural

Contractual

- Follows CDM accounting and verification requirements
- Only recognizes renewable and efficiency projects
- Adds conditions for sustainability and stakeholder consultation ("CDM+")
- Registry in development
- Relatively expensive

Voluntary Carbon Standard



Accounting

Procedural

Contractual

- Sets a “minimum” international standard for voluntary credible offsets
- Recognizes CDM methodologies now, others in future (e.g., CCAR protocols)
- Separate additionality rules (still being developed)
- Accredited verifiers (initially CDM qualified), responsible for ensuring integrity
- Will approve qualified registries
- Recognizes many types of projects

Accounting

Procedural

Contractual

- Certifies “retail” carbon offset products that come from other credible programs
- Establishes minimum accounting & additionality requirements for other programs and marketers
- Ensures no double-counting/claiming
- Certifies Green-e RECs as offsets

California Registry



Accounting

Procedural

Contractual

- Develops accounting protocols
 - Forestry
 - Methane digesters
- Keeps list of accredited verifiers and specifies verification procedures
- Registers project information and quantified reductions
- Developing registry for transactions & retirement
- May expand over time and/or be incorporated in the multi-state Climate Registry?

Government Regulation?



- **UK government “best practice” guidelines**
 - Recommends only buying official CDM & EU credits
- **Will U.S. government regulate?**
 - FTC now investigating carbon offset claims
 - May incorporate guidance in its “green guides”
 - Could weed out fraud and misrepresentation
 - **BUT**, there could still be a lot of unanswered questions (baselines & additionality claims)

Agenda

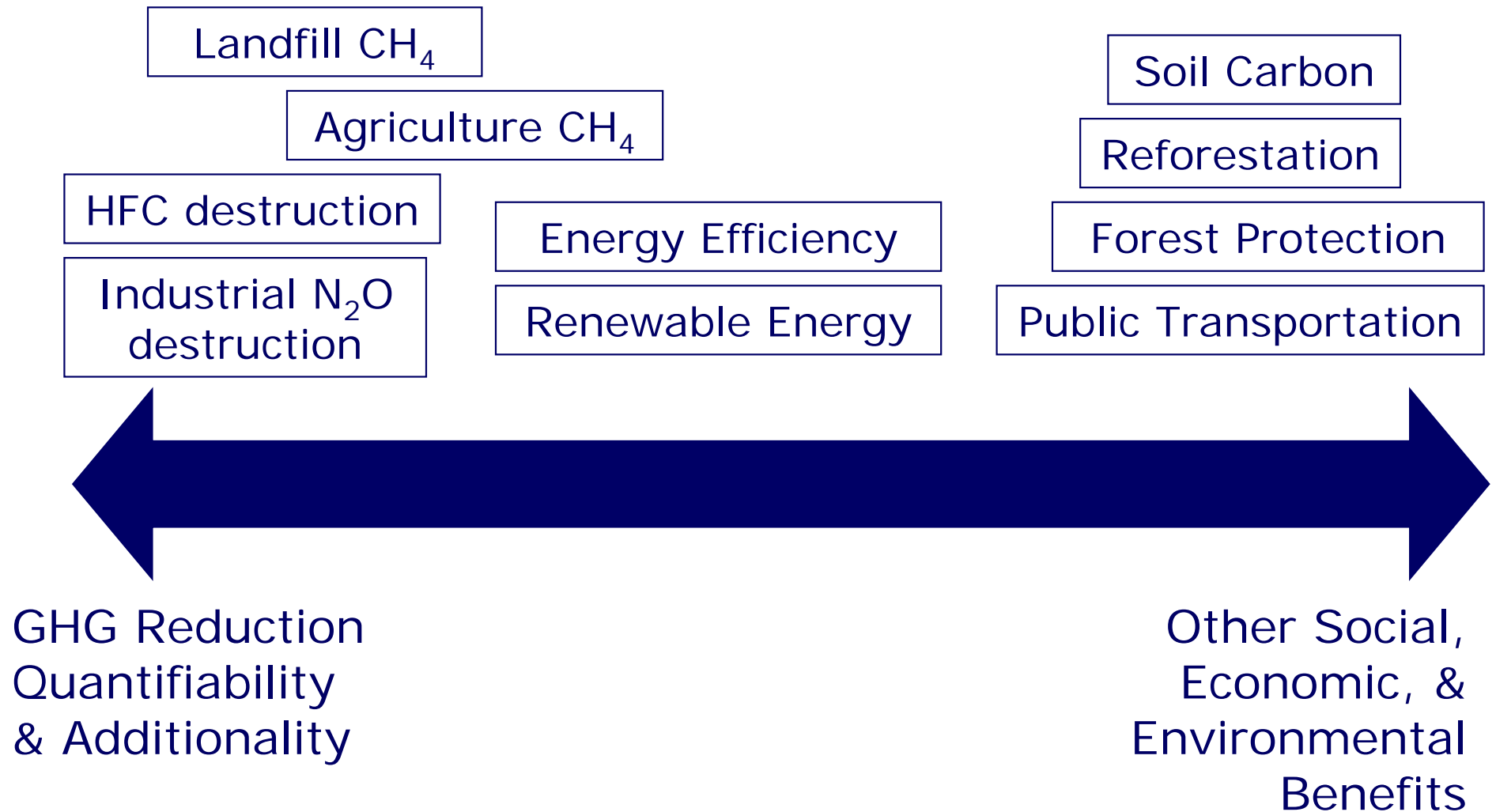
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Buyers Have Multiple Objectives

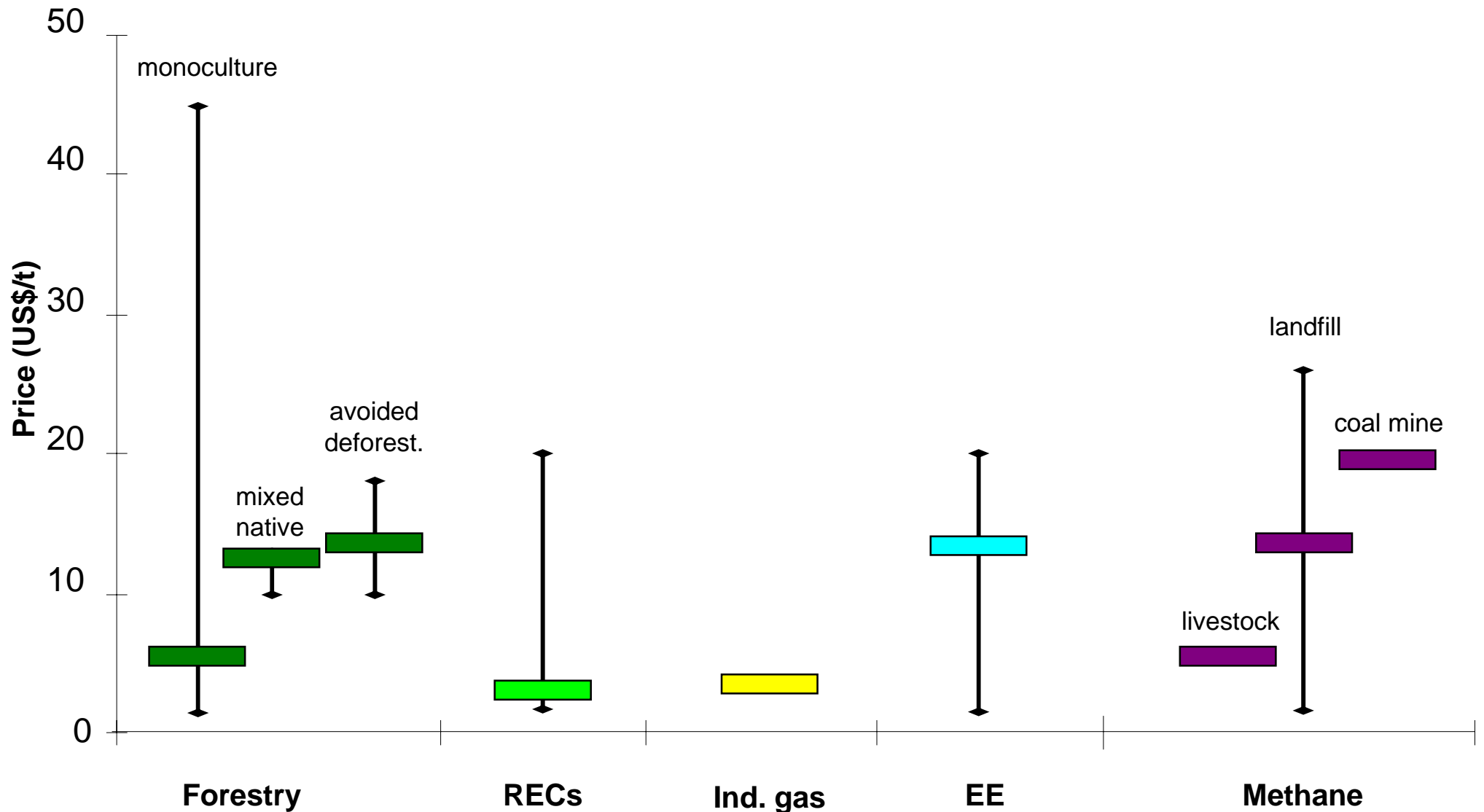
- Low cost GHG reductions
- High credibility, rigorous quantification
- Social and environmental benefits (public relations)



Projects Compete Along a Spectrum



Projects Compete by Price



Big Question Mark: Regulation

- “Offsets” only valid at uncapped sources
- U.S. cap-and-trade regulation could dramatically shrink the available project pool...



Where Do Green Buildings Fit?

- Good “co-benefits”
- Higher average cost
- Difficult to quantify reductions
- In the U.S., will probably fall under a GHG emissions cap...

