

# Offsets 101

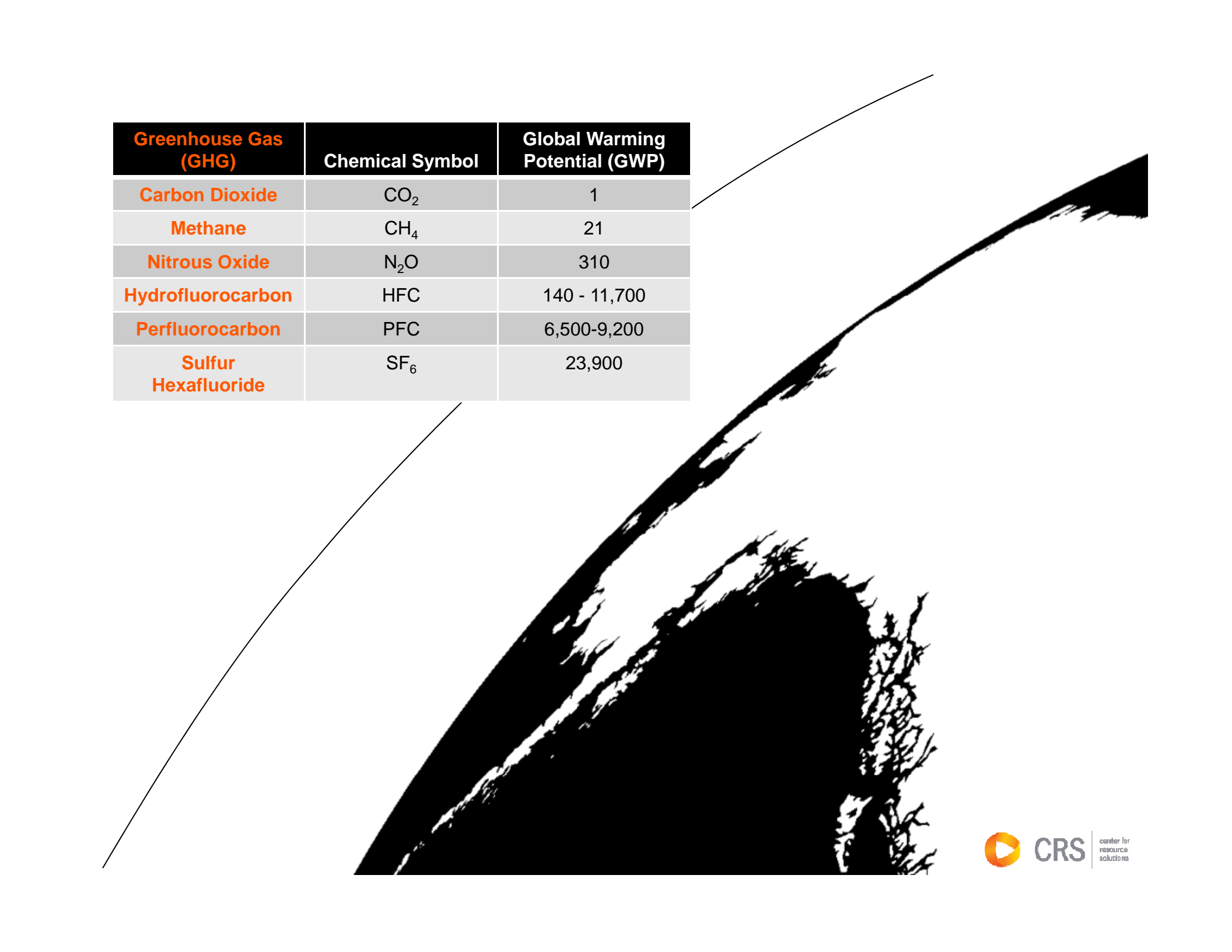
## The Voluntary Market for Greenhouse Gas Emissions Reductions

August 18, 2011

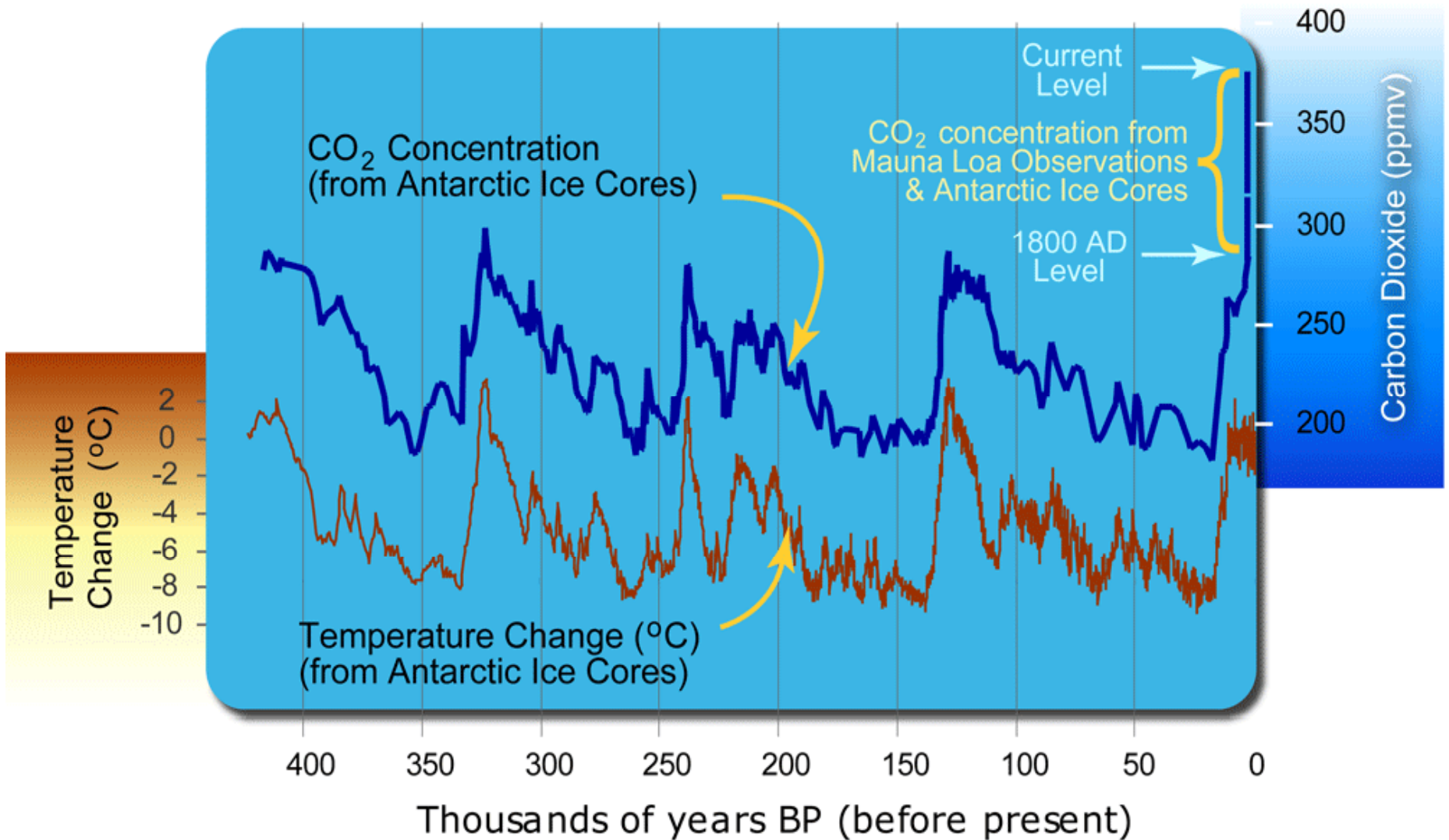
Todd Jones  
Green-e Climate Manager  
Center for Resource Solutions

# Outline

1. **Greenhouse gases**
2. Types of carbon markets
3. What is an offset?
4. Offset projects
5. Quality assurances
  - a. Projects
  - b. Products
5. The voluntary market

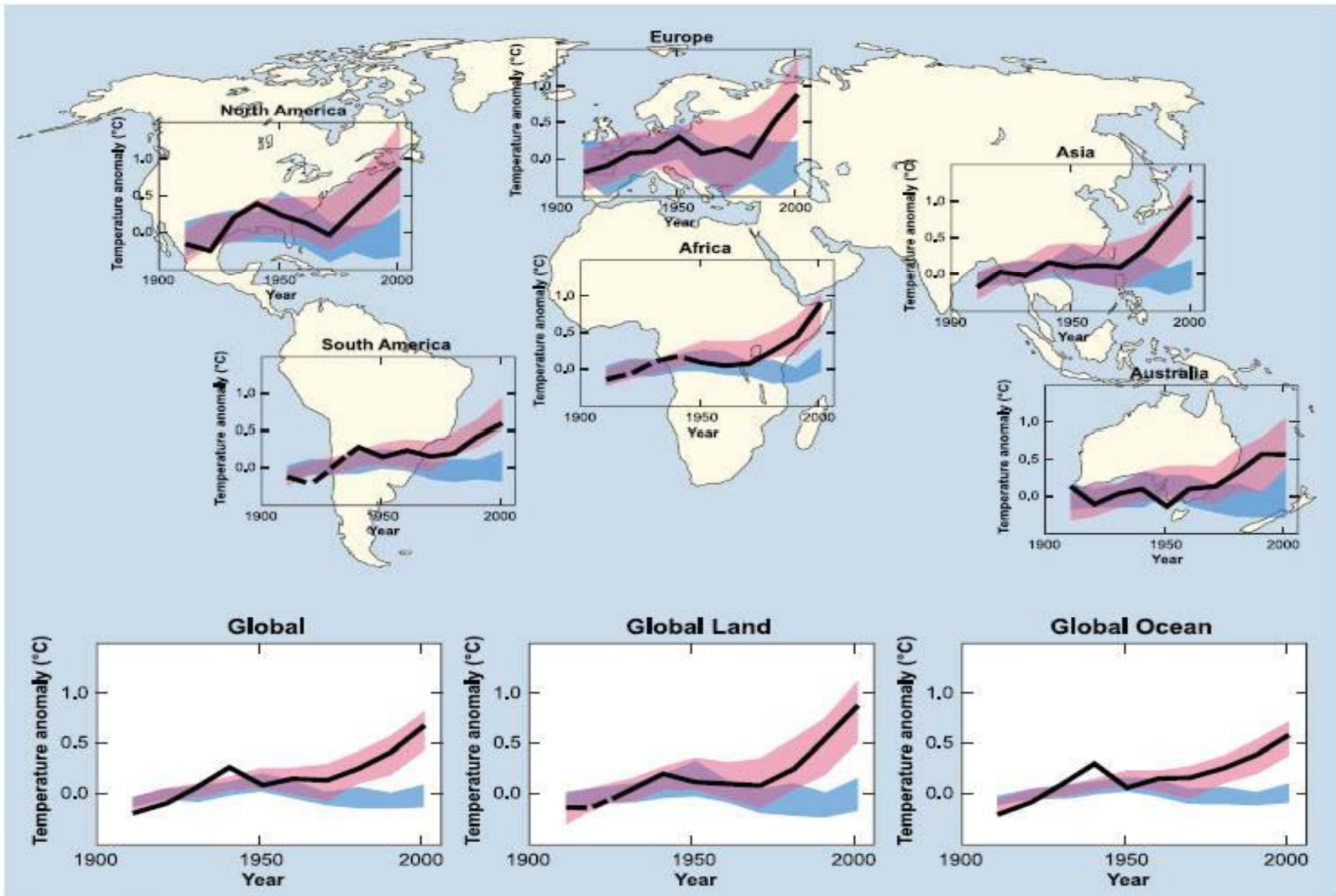


<b>Greenhouse Gas (GHG)</b>	<b>Chemical Symbol</b>	<b>Global Warming Potential (GWP)</b>
<b>Carbon Dioxide</b>	CO <sub>2</sub>	1
<b>Methane</b>	CH <sub>4</sub>	21
<b>Nitrous Oxide</b>	N <sub>2</sub> O	310
<b>Hydrofluorocarbon</b>	HFC	140 - 11,700
<b>Perfluorocarbon</b>	PFC	6,500-9,200
<b>Sulfur Hexafluoride</b>	SF <sub>6</sub>	23,900



Data Source CO<sub>2</sub>: <ftp://cdiac.ornl.gov/pub/trends/co2/vostok.icecore.co2>  
 Data Source Temp: <http://cdiac.esd.ornl.gov/ftp/trends/temp/vostok/vostok.1999.temp.dat>

Source: Woods Hole Research Center



models using only natural forcings  
 models using both natural and anthropogenic forcings

observations

©IPCC 2007: WG1-AR4

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# Types of Carbon Markets

	<b>Compliance</b>		<b>Voluntary</b>	
<b>Emissions</b> (allowances)	<b>1</b>	Cap-and-trade	<b>2</b>	Voluntary Cap-and-trade
<b>Emissions Reductions</b> (offsets)	<b>3</b>	Compliance Offsets	<b>4</b>	Offsets

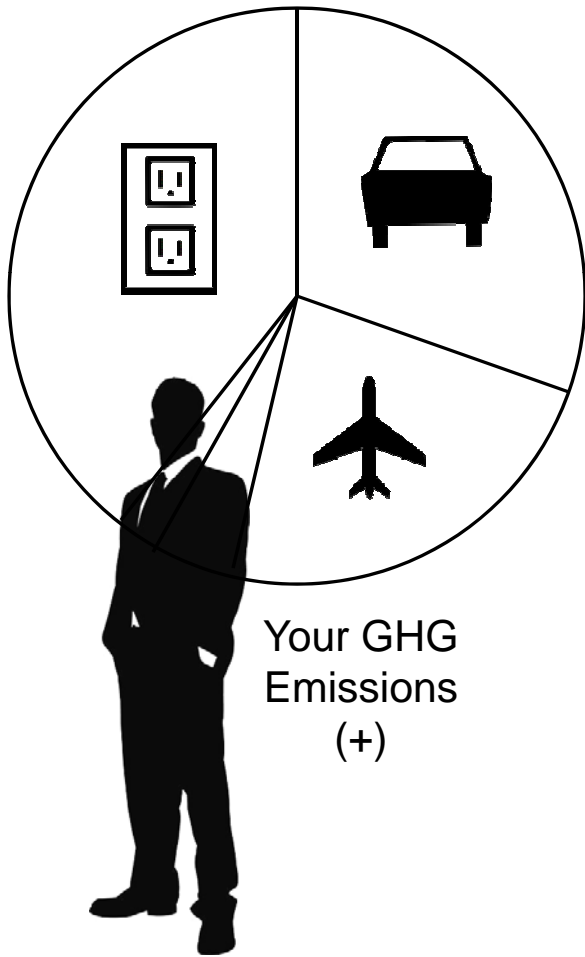
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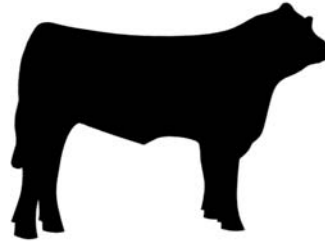
# Carbon Offset

An intangible commodity representing a reduction in greenhouse gas (GHG) emissions

- Purchased in order to negate or diminish the recipient's GHG emissions
- Reduction occurs at a project-based activity located away from the source of emissions being offset
- Unverified Reduction → Carbon Credit → Offset Product
- Not a donation
- Not an investment in a future project



GHG Emissions Reductions (-)





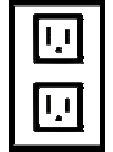
Your GHG  
Emissions  
(+)

## Emissions Categories (Scopes)

Scope 1 – direct emissions



Scope 2 – indirect from electricity consumption

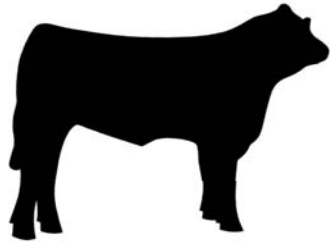


Scope 3 – other indirect emissions



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GHG  
Emissions  
Reductions  
(-)

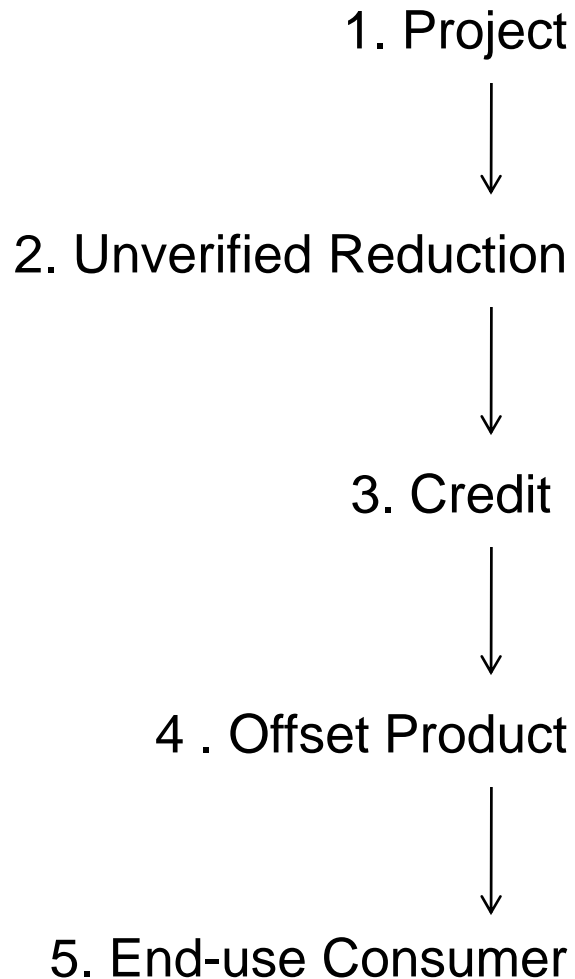
renewable energy  
energy efficiency  
agriculture/forestry/land use  
methane destruction  
industrial gas destruction  
transportation  
fuel switching  
industrial process emissions  
and more...

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## Path of Emissions Reductions in the Retail Market

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## Quality Criteria

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Additional

Permanent  
Verified  
Real

Enforceable

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Quality = P.A.V.E.R.

# Project Certification



## Assurances for Credible Supply:

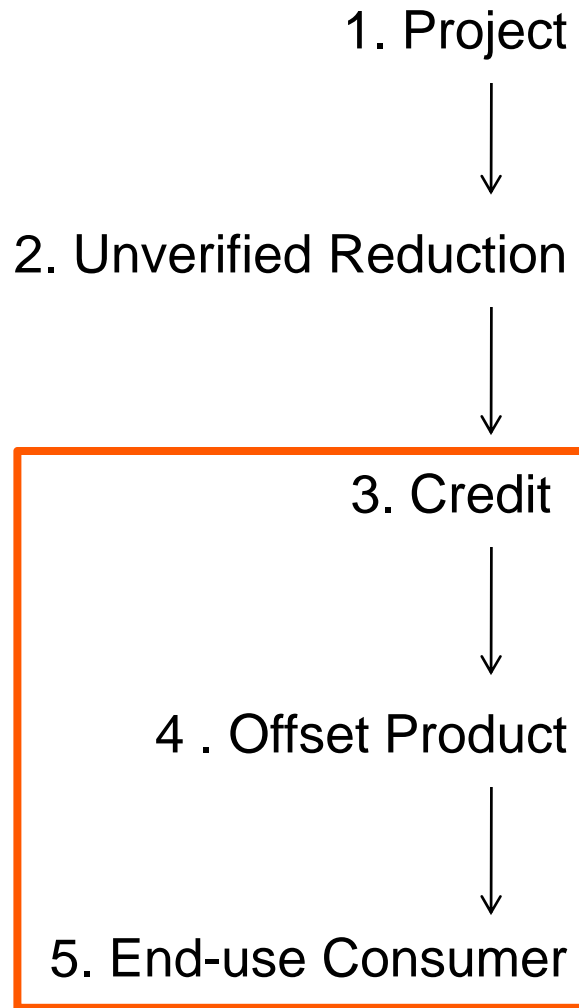
- Project standards
- Project validation and monitoring
- Verification and certification of reductions
- Credit issuance
- Credit tracking through a registry

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## Path of Emissions Reductions in the Retail Market

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## Quality Criteria

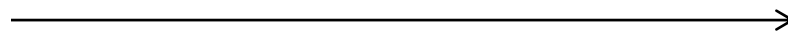
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Additional

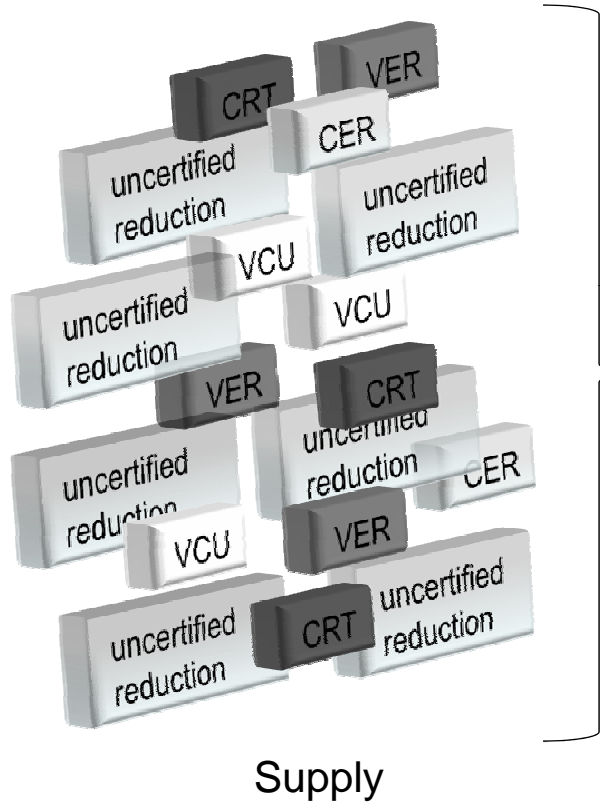
Permanent  
Verified  
Real

Enforceable

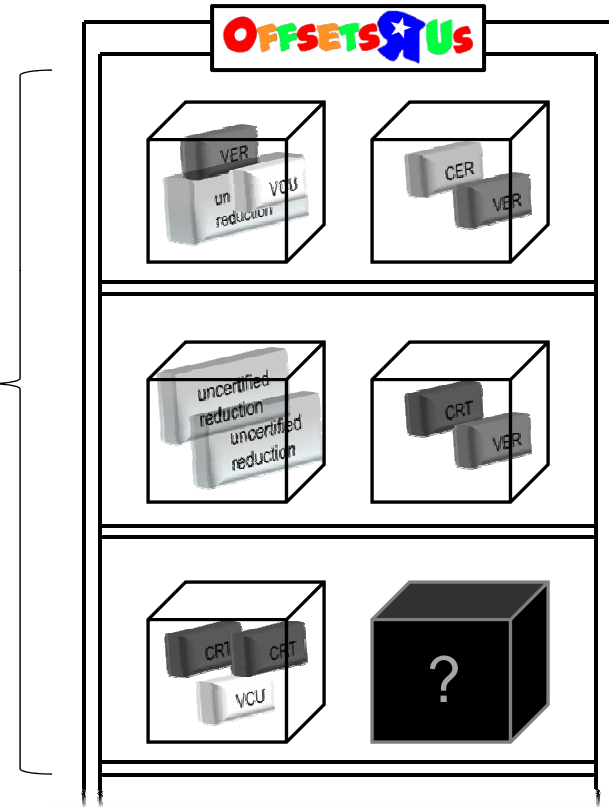
### 3. Credits



### 4. Offset Products



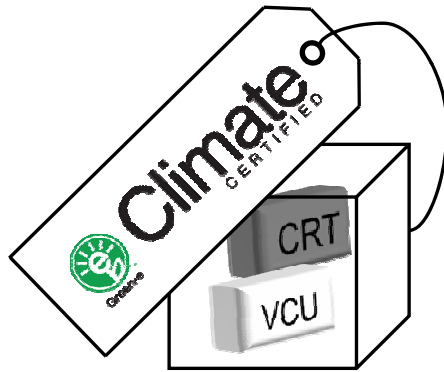
Offset Company/  
Carbon Retailer



Unique Offset  
Products of Retailers

# Product Certification – Consumer Protection

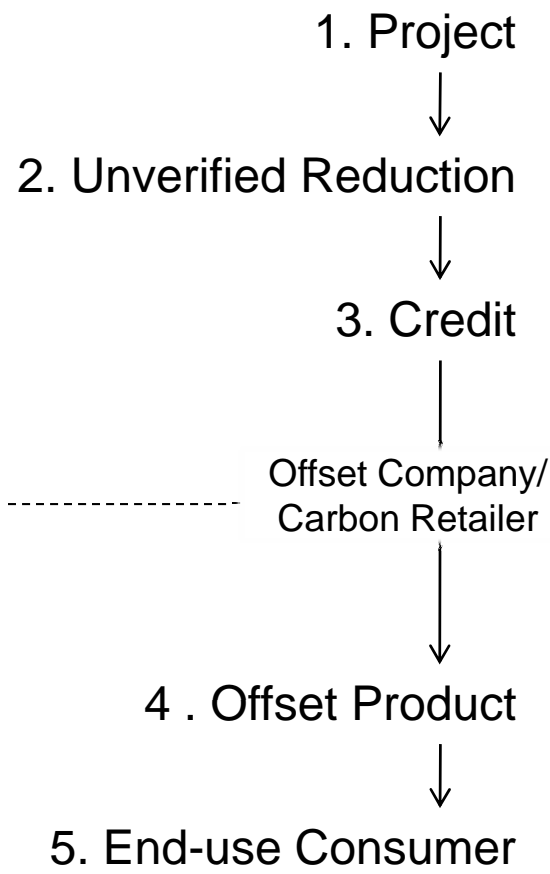
Certification of the unique offset products sold by offset sellers/retailers in the market



1. Products contain verified reductions from good project certification programs that ensure **P.A.V.E.R.**
2. Exclusive **Ownership** – correct type and quantity of reductions are actually and fully delivered and no double selling
3. **Disclosure** – full disclosure to the customer and no misleading information

# Path of Emissions Reductions in the Retail Market

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## Assurances for Credible Supply:

- Project standards
- Project validation and monitoring
- Verification and certification of reductions
- Credit issuance
- Credit tracking through a registry



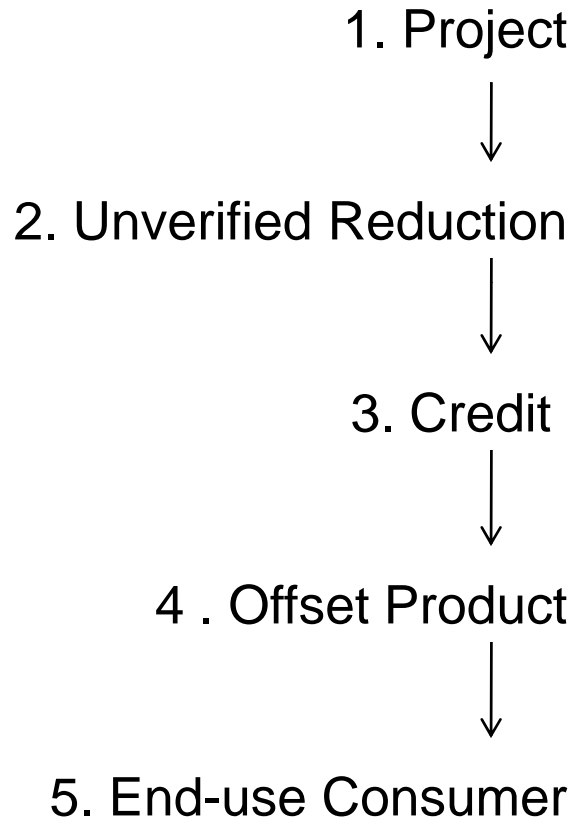
## Assurances for Credible Sales:

- Standard for project standards (supply)
- Certification of the offset products
- Verification of retail transactions (supply = sales)
- Customer disclosure



## Path of Emissions Reductions in the Retail Market

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## Quality Criteria

---

Additional

Permanent

Verified

Real

Enforceable

Ownership

Disclosure

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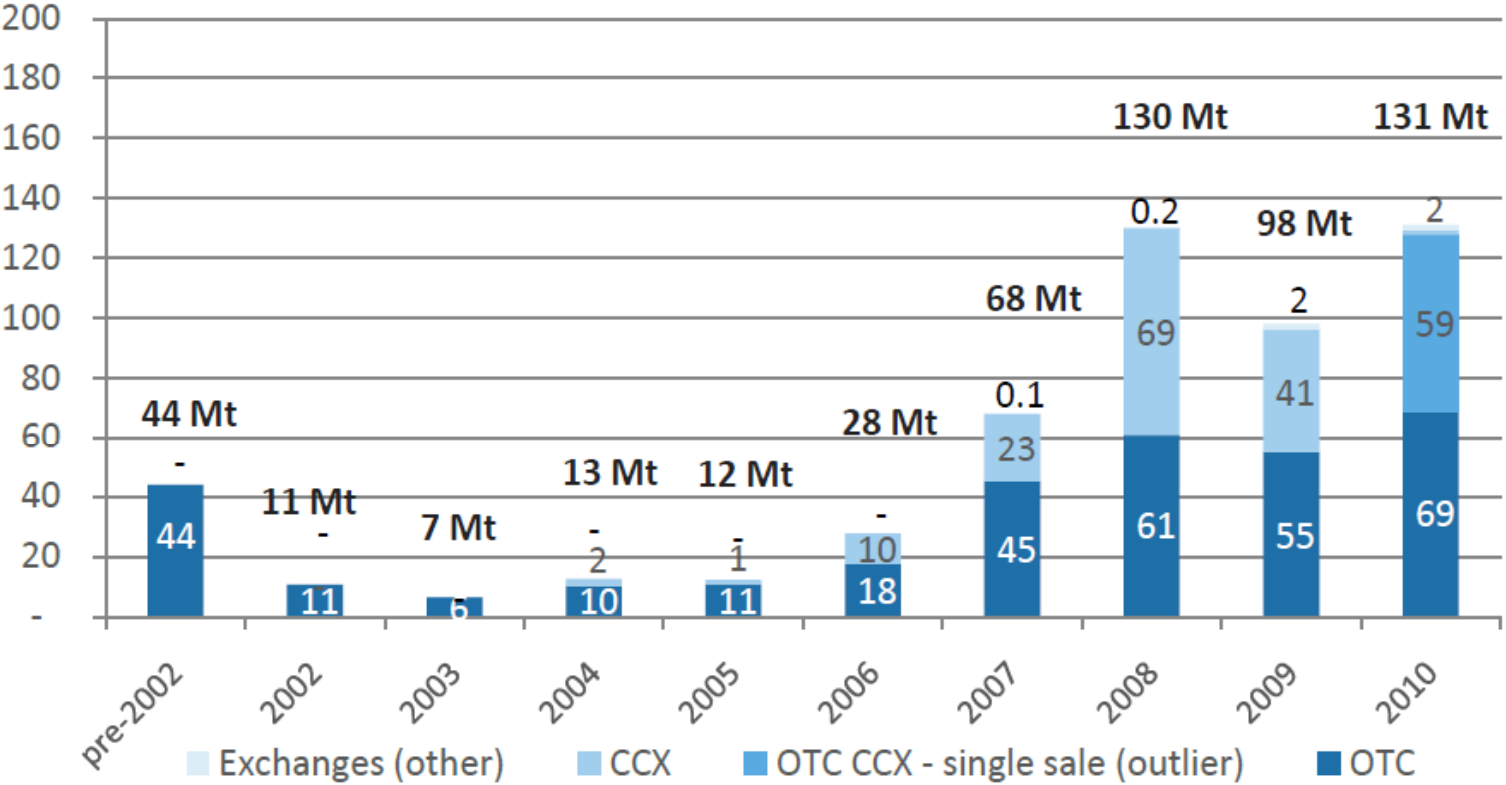
Quality = P.A.V.E.R. + D.O.

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# Voluntary Market

Figure 5: Historic Volume in the Voluntary Carbon Markets  
MtCO<sub>2</sub>e

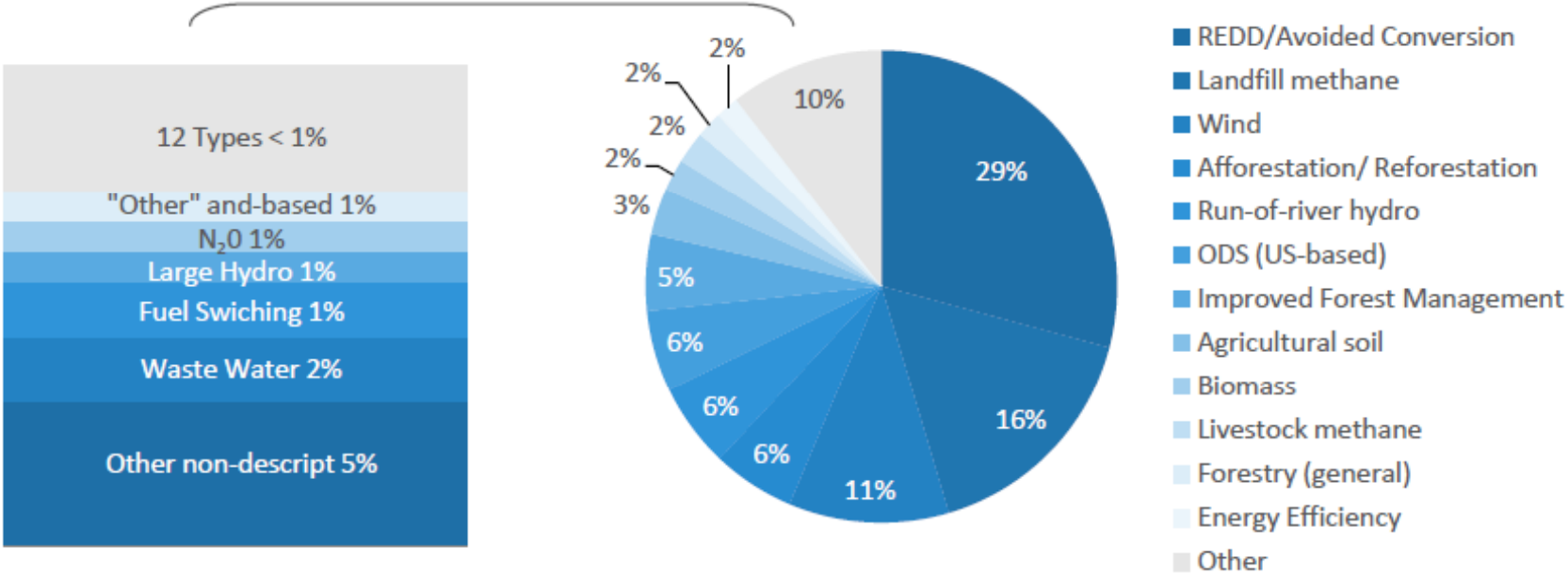


Source: Ecosystem Marketplace, Bloomberg New Energy Finance.

Notes: Based on 153 survey respondents. Annual totals may not equal sum of categories due to rounding.

# Voluntary Market

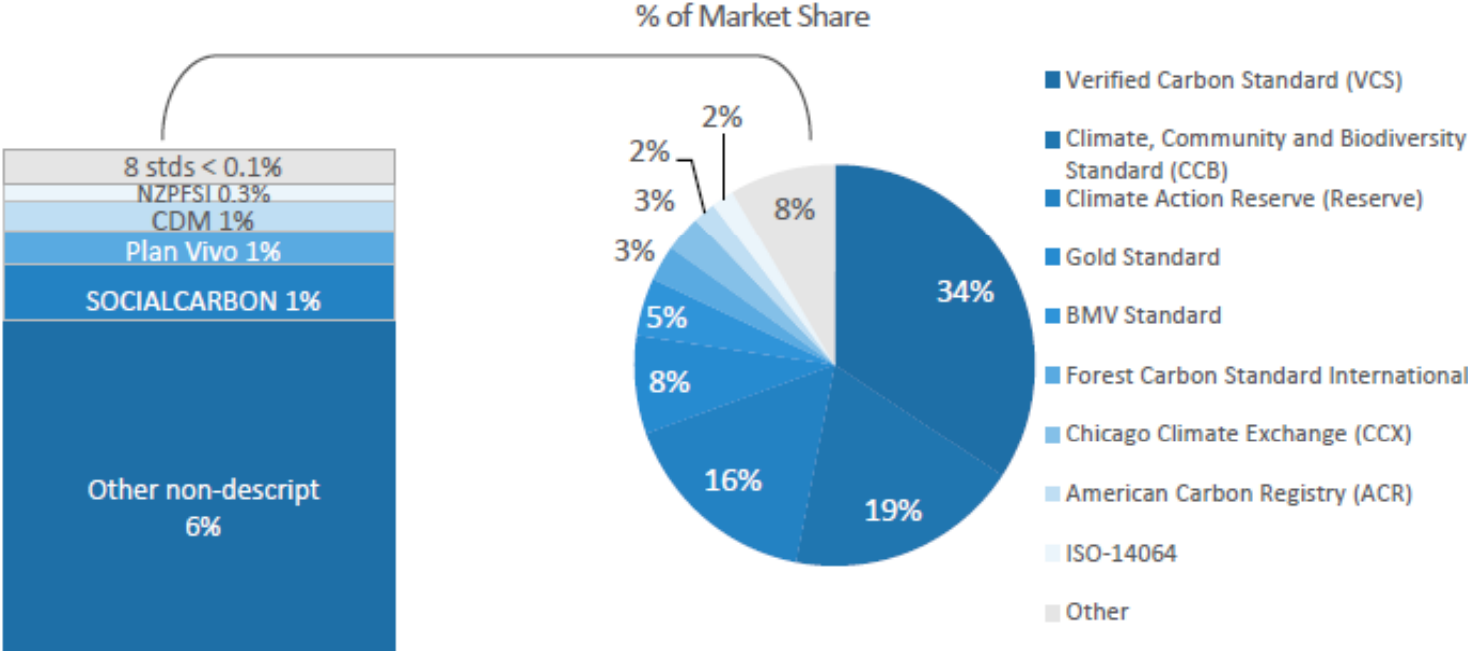
Figure 1: Transaction Volume by Project Type, OTC 2010



Source: Ecosystem Marketplace, Bloomberg New Energy Finance.

# Voluntary Market

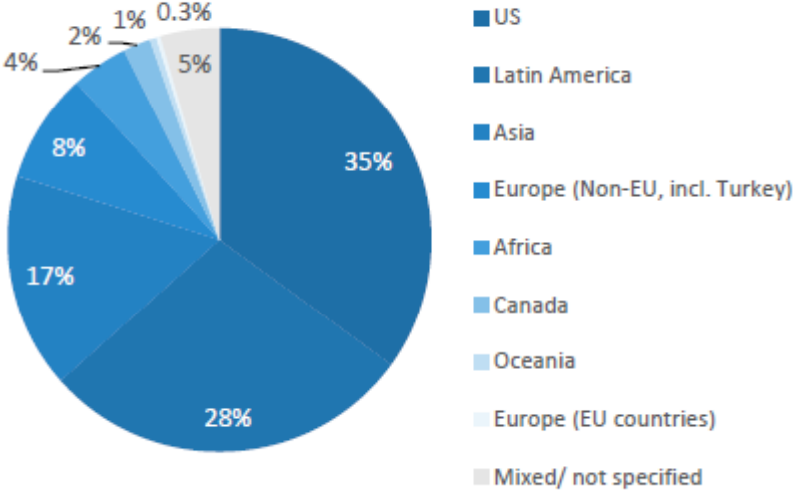
Figure 3: Third-Party Standard Utilization by Primary and Secondary Standard, OTC 2010<sup>3</sup>



Source: Ecosystem Marketplace, Bloomberg New Energy Finance.  
 Note: Based on 676 observations.

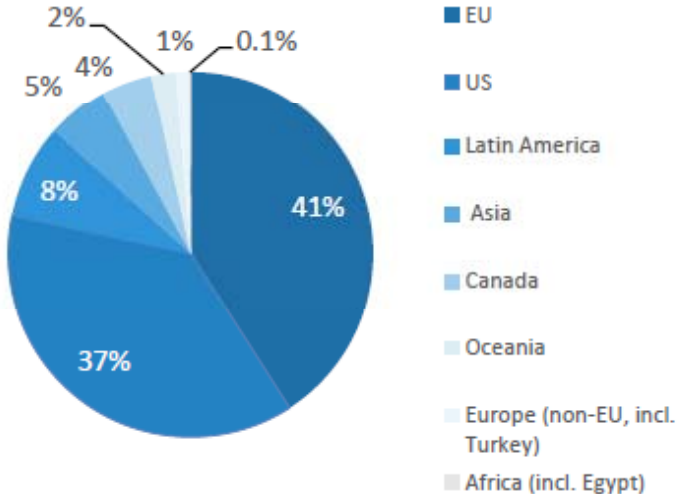
# Voluntary Market

Figure 2: Transaction Volume by Project Location, OTC 2010



Source: Ecosystem Marketplace, Bloomberg New Energy Finance.

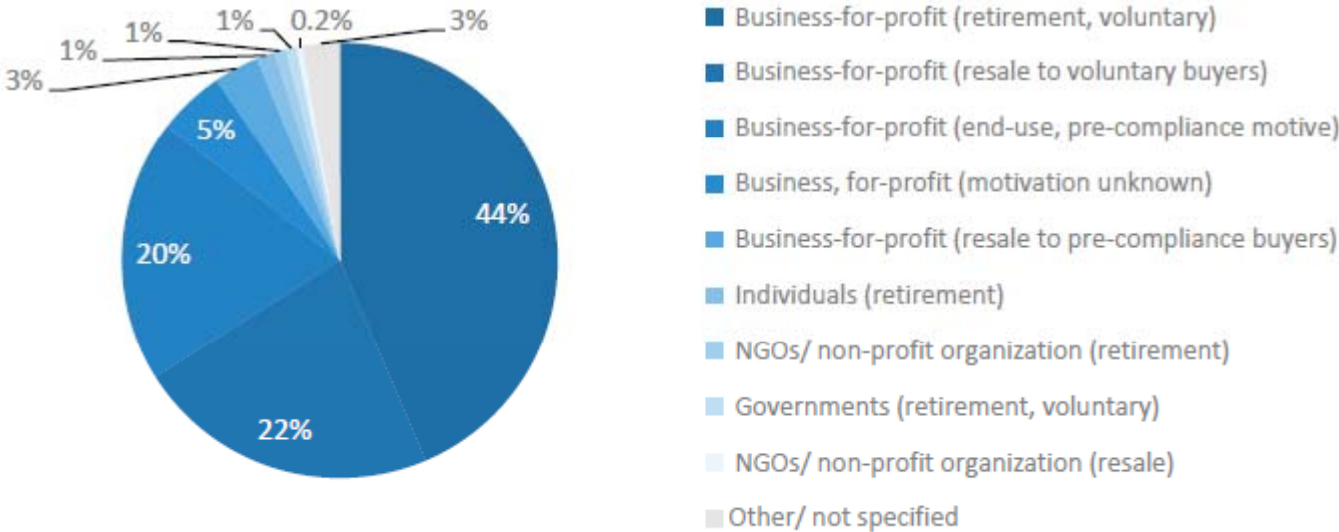
Figure 32: Transaction Volume by Customer Location, OTC 2010  
% of Market Share



Source: Ecosystem Marketplace, Bloomberg New Energy Finance.  
Note: Based on 248 survey respondents.

# Voluntary Market

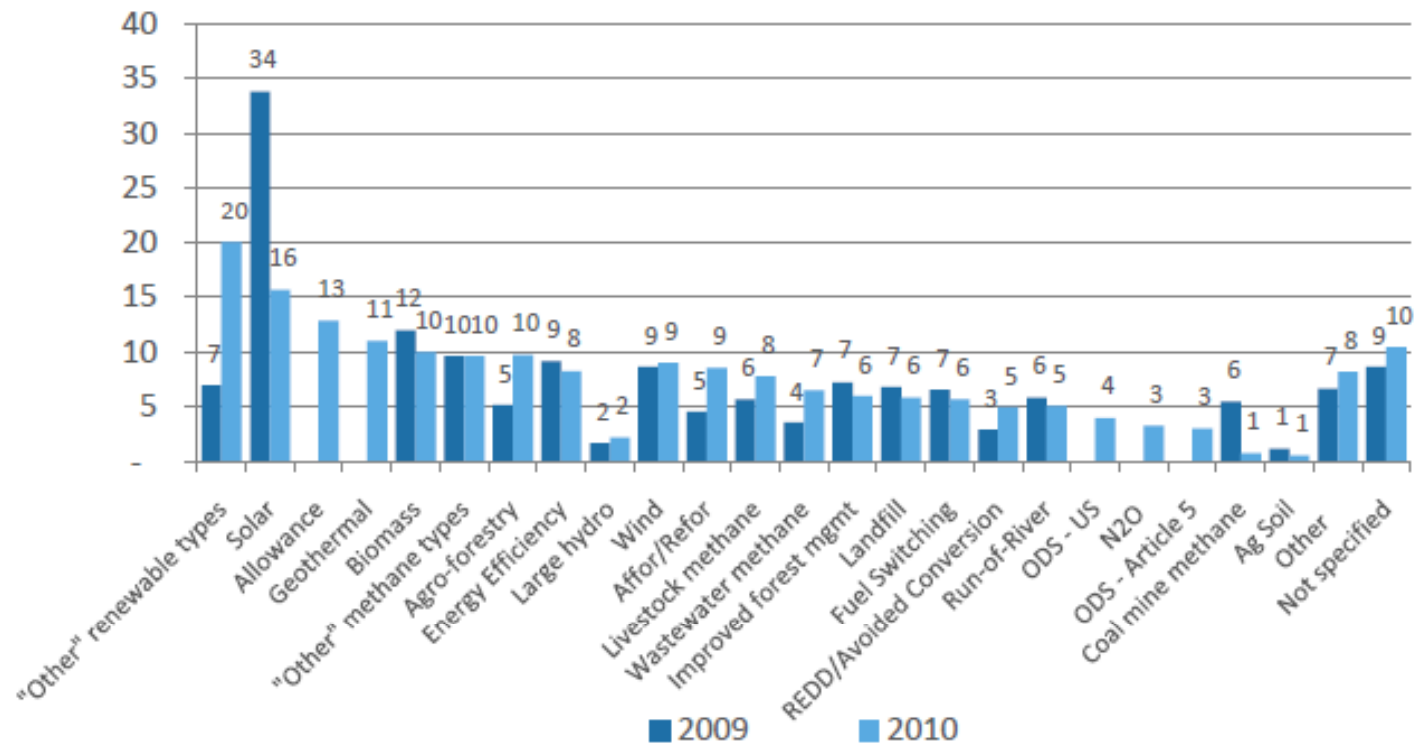
**Figure 31: Transaction Volume by Type of Buyer, OTC 2010**  
 % of Market Share



Source: Ecosystem Marketplace, Bloomberg New Energy Finance.  
 Note: Based on 348 survey respondents.

# Voluntary Market

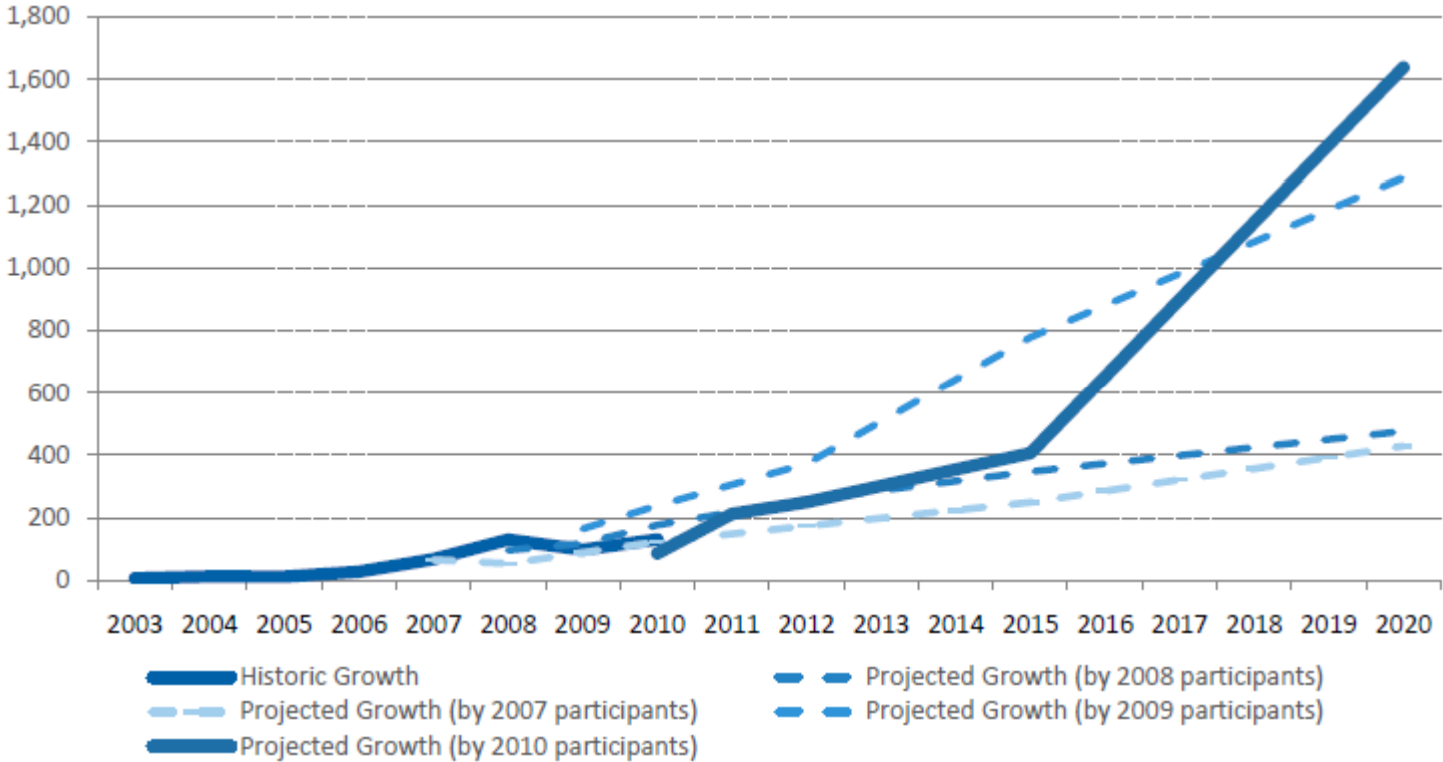
Figure 16: Average Credit Price by Project Type, OTC 2009 vs. 2010  
US\$/tCO<sub>2</sub>e



Source: Ecosystem Marketplace, Bloomberg New Energy Finance.  
Note: 2009 figures based on 326 observations, 2010 figures based on 461 observations.

# Voluntary Market

Figure 33: Supplier-Projected Growth in the Voluntary Carbon Markets  
MtCO<sub>2</sub>e



Source: Ecosystem Marketplace, Bloomberg New Energy Finance.  
Note: Based on 95 survey respondents.

# CONTACT

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