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Climate Change Regulation: Implications for Refining

Lynn D. Westfall
Senior Vice President- External Affairs
& Chief Economist

Tesoro is an Independent Manufacturer of Fuels

- **No upstream assets**

- Headquartered in San Antonio, Texas
- Seven Refineries
- 680,000 bpd total crude capacity
- Retail network of over 850 sites
- 5,500 Employees
- Traded on NYSE: symbol TSO

Karnal, Alaska

- 72,000 bpd
- Key products: Jet & Gasoline

Martinez, California

- 168,000 bpd
- Key products: CARE Gasoline & CARB Diesel

Wilmington, California

- 106,000 bpd
- Key products: CARE Gasoline & CARB Diesel

Kapoua, Hawaii

- 94,000 bpd
- Key products: Jet & Gasoline

Everett, Washington

- 115,000 bpd
- Key products: Gasoline & Diesel

St. Louis City, Mo.

- 85,000 bpd
- Key products: Gasoline & Diesel

Minden, North Dakota

- 58,000 bpd
- Key products: Gasoline & Diesel



Singapore Office ■

Auburn Office ■

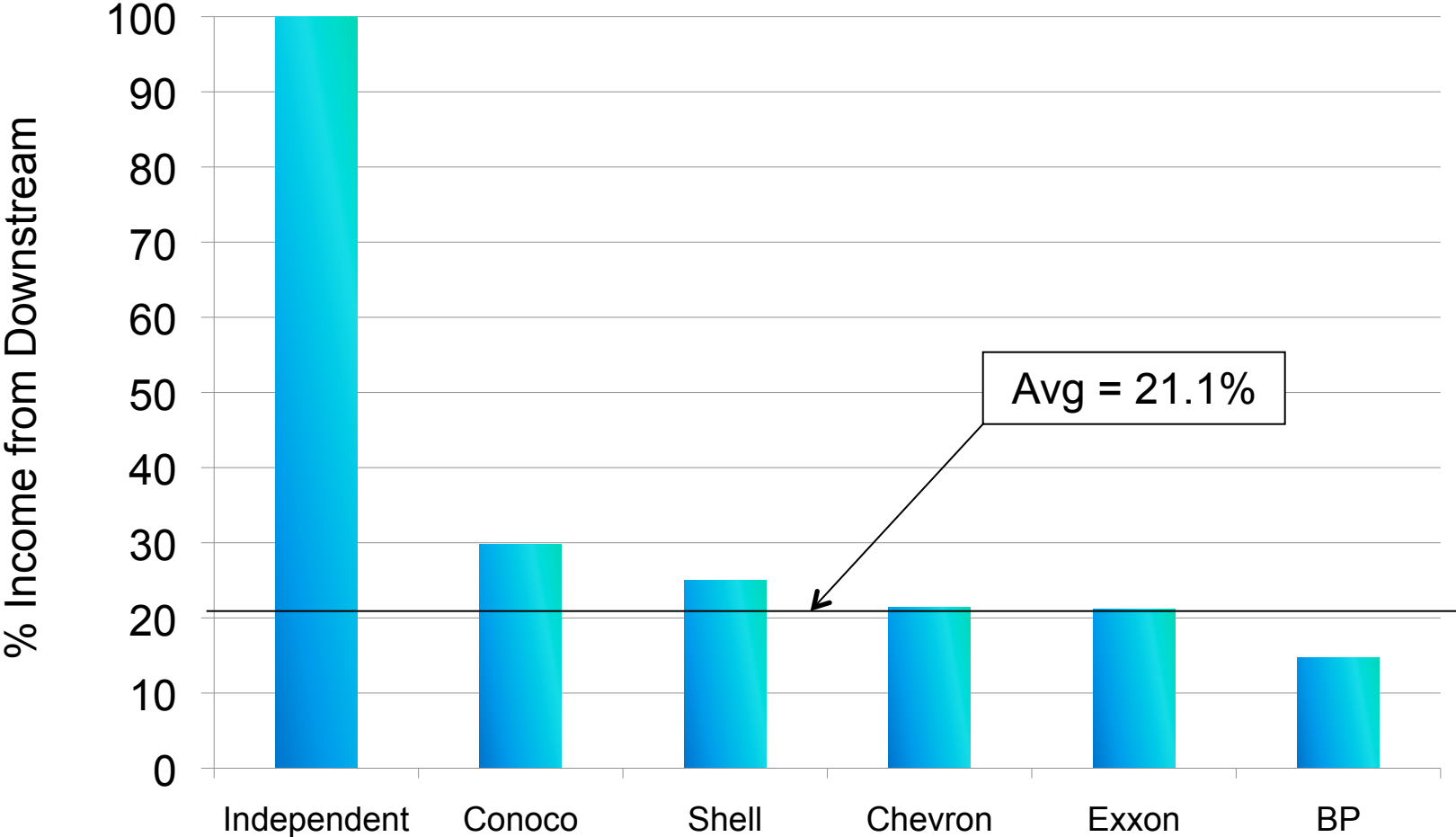
Long Beach Office

Calgary Office ■

Denver Office ■

Corporate Office ■

Independent Manufacturers derive all of their income from downstream activities



Source: SEC Filings

Tesoro's Position on Green House Gases

- While there is still credible scientific debate on the merits of regulating green house gases, Tesoro has committed to reducing our emissions to 1990 levels by 2020
- We support a regulatory control scheme which meets the following criteria:
 1. It must be in a global context so it does not disadvantage the U.S. economy and U.S. companies
 2. It must be fairly applied to all industries, cost effective, and simple
 3. It must be far sighted and flexible
- The Waxman-Markey bill does not meet our criteria
 - Estimated Cost = 80c/gallon

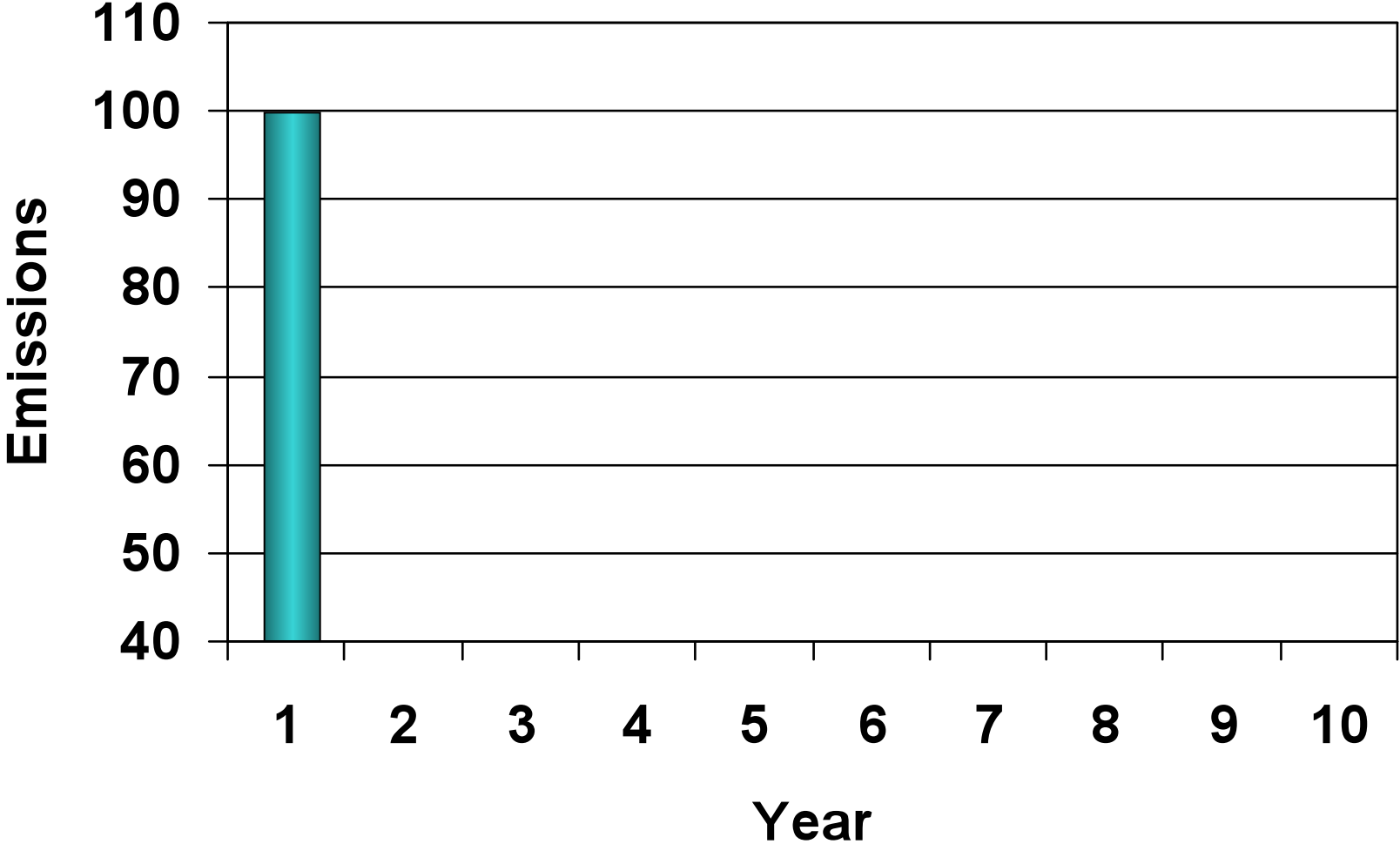
Regulating Green House Gas Emissions

- Cap & Trade

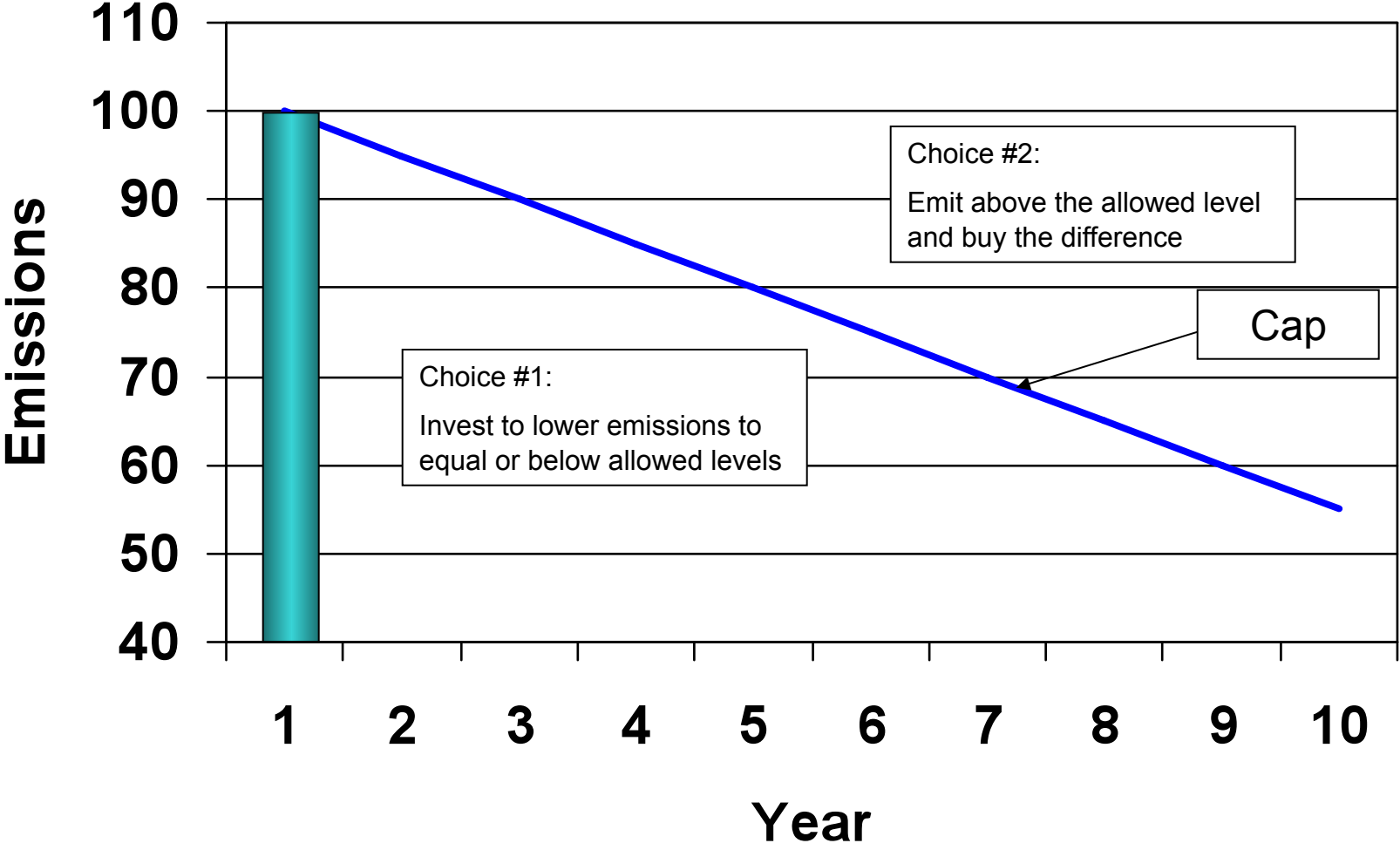
- Carbon Tax

- Low Carbon Fuel Standard

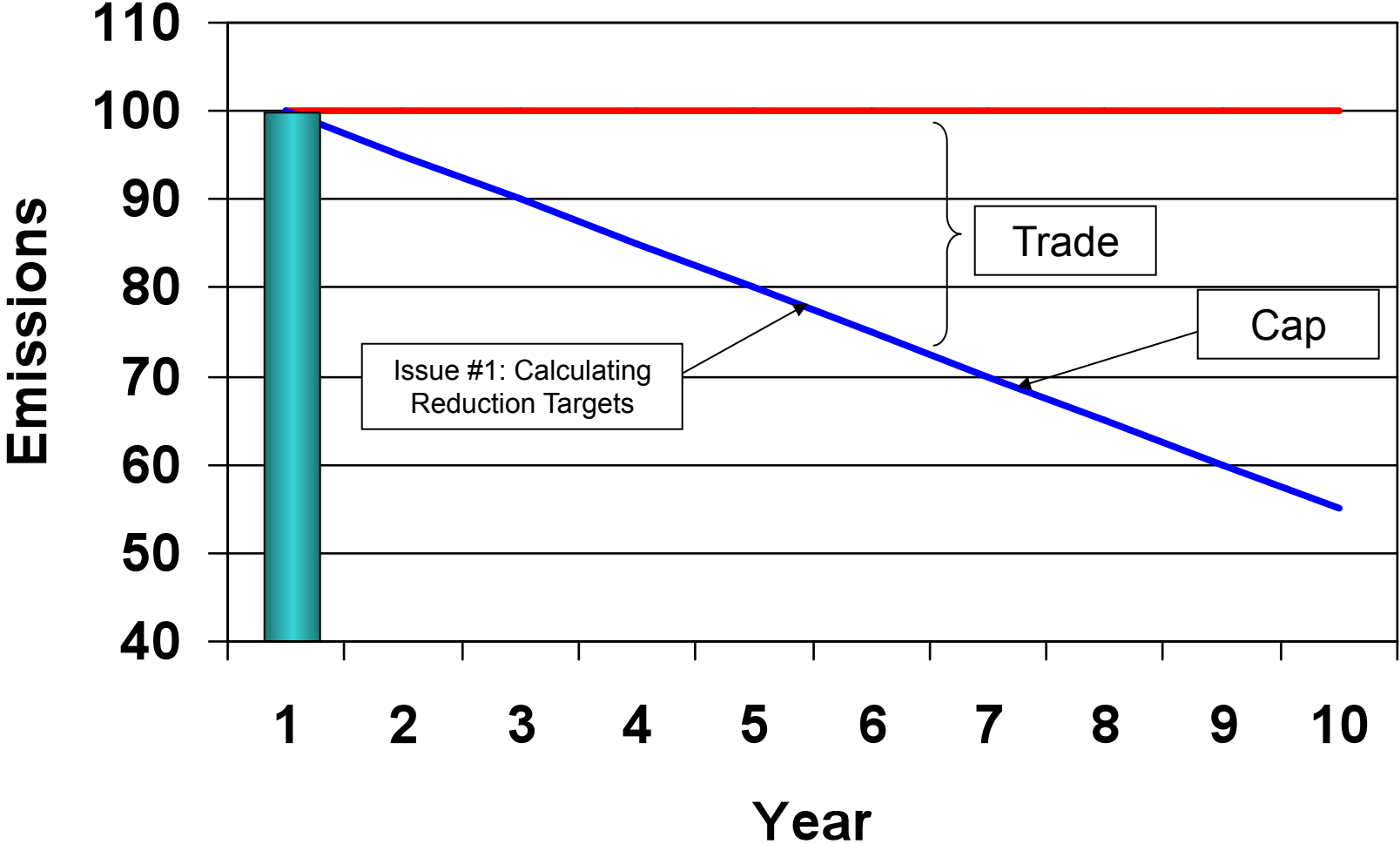
Cap & Trade Schematic



Cap & Trade Schematic

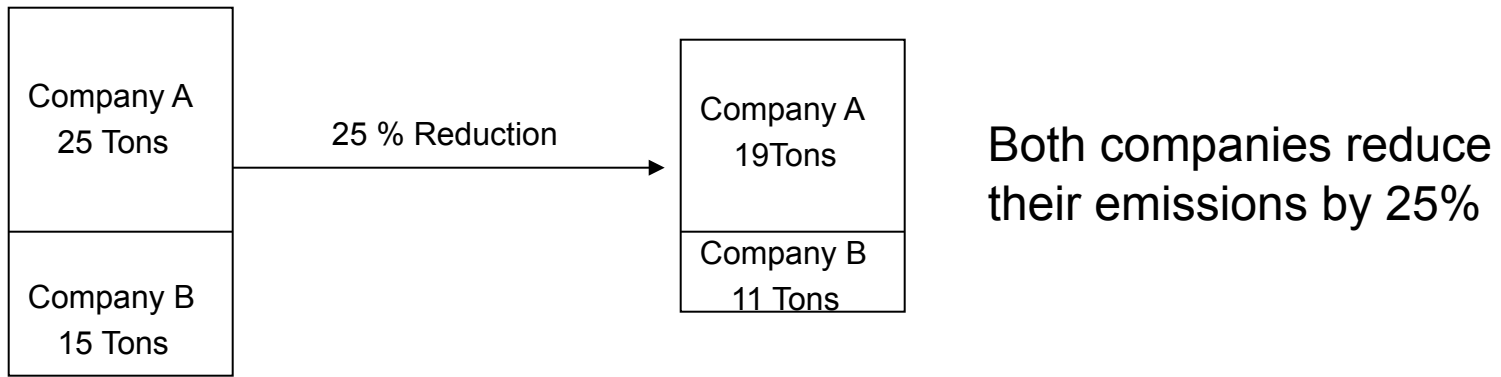


Cap & Trade Schematic

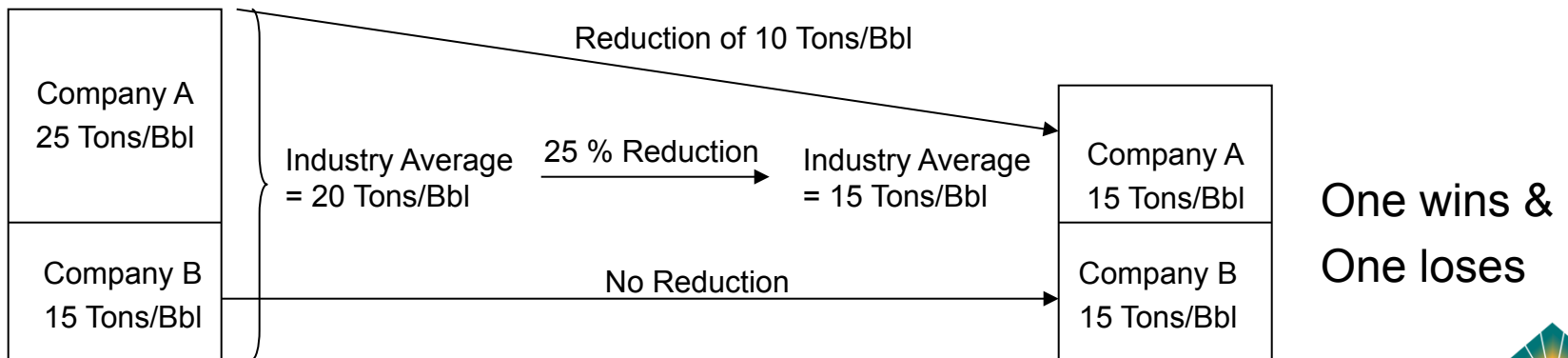


Issue #1: Calculating Reduction Targets

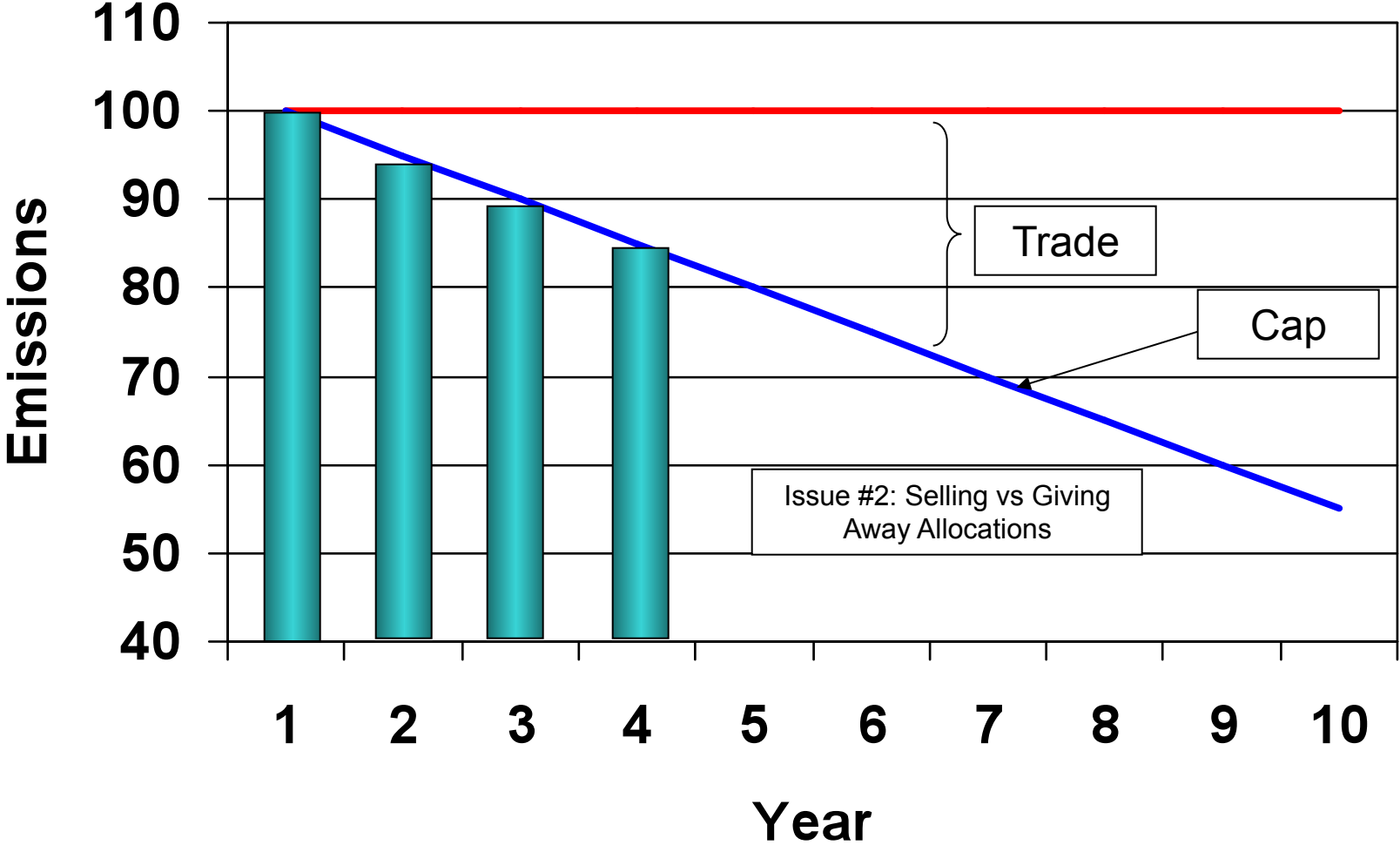
Grandfathering: Everyone shares the reductions equally



Benchmarking: Must meet a reduction in the overall average



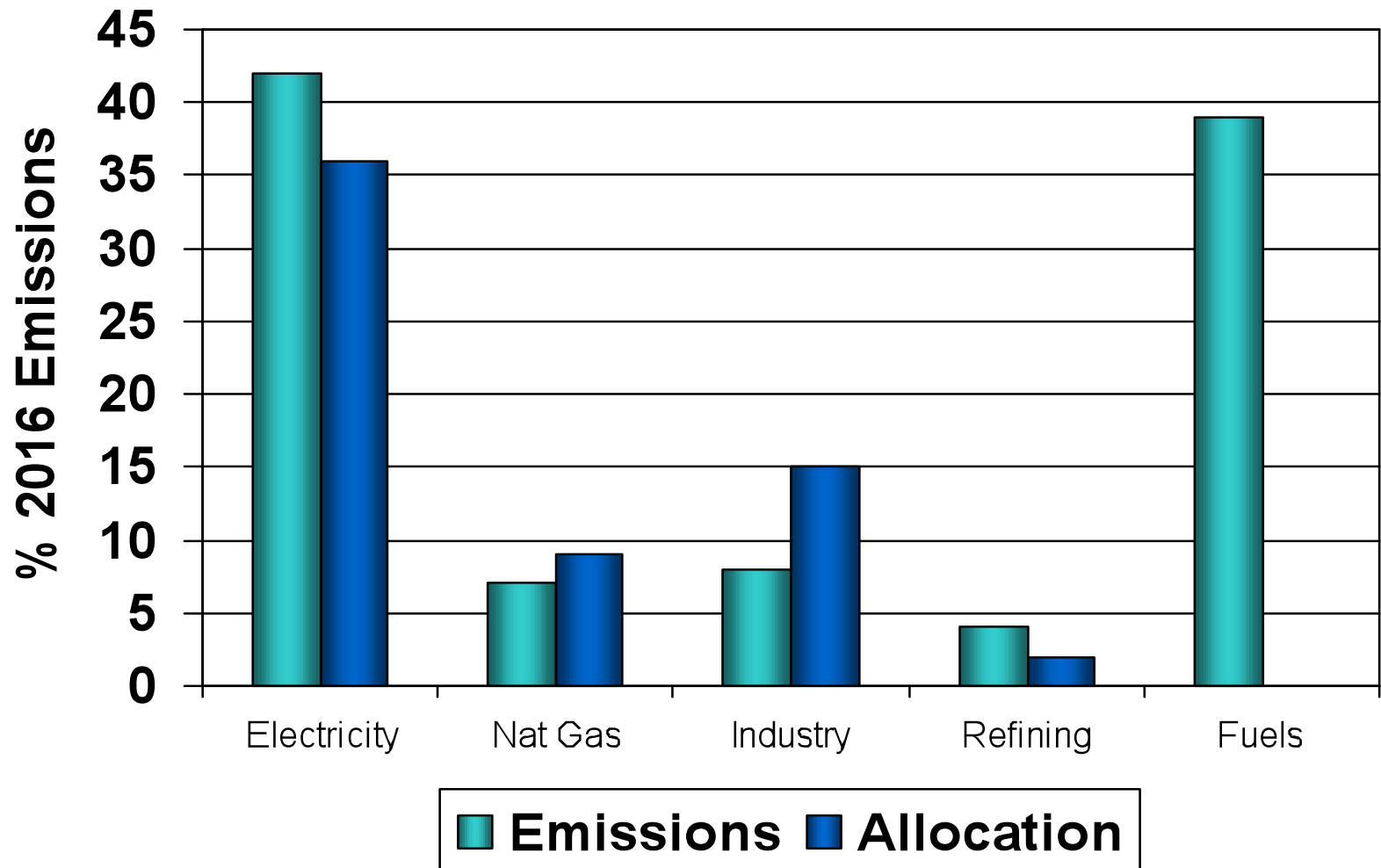
Cap & Trade Schematic



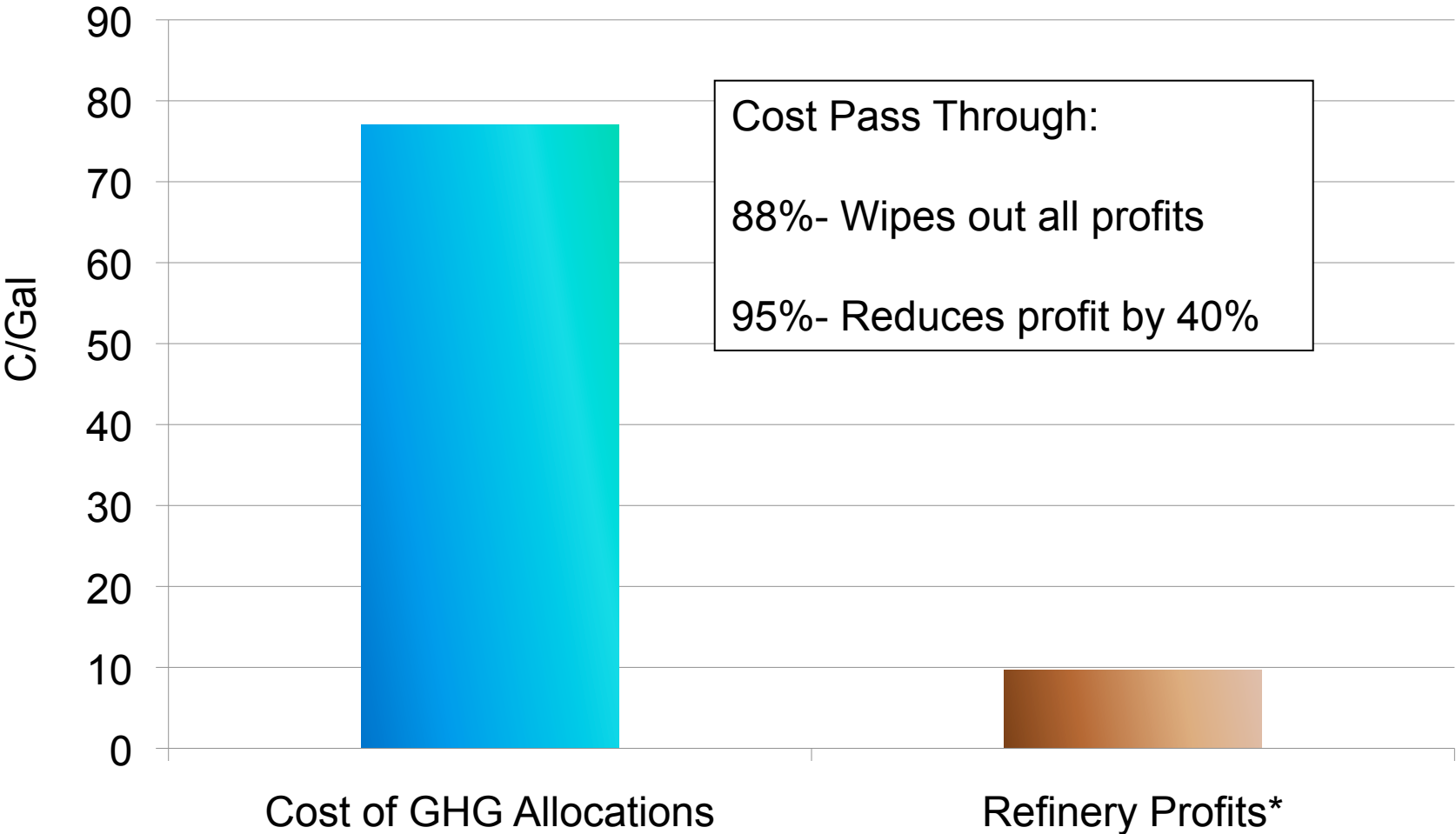
Issue #2: Selling or Giving Away Allocations

- Firms must already pay for the capital necessary to reduce emissions or for incremental allocations through cap & trade
- Buying base allocations is a stay in business tax and reduces the funds available for emission reduction
- Selling allocations amounts to a double tax.

Current Bill Emission Allowance Allocations



How much of the cost of GHG that can be passed through will determine the survival of the downstream sector



*TSO, VLO, Sun, HOC, FTO 6 yr Averages

Source: CBO, SEC Filings

Regulating Green House Gas Emissions

- Cap & Trade

- Carbon Tax

- Low Carbon Fuel Standard

Carbon Tax

- Tax based on carbon content or CO2 emissions
- Main Issue- Where is the tax applied
 - Apply at Retail Level
 - Apply at Wholesale Level

Carbon Tax- Main Issue- Where to Apply

Apply at retail:

- 100% passed through to consumer
- May or may not change demand- price depends on more than just taxes
- No incentive for industry to reduce emissions



Refinery



Rack



Retail

Carbon Tax- Main Issue- Where to Apply

Apply at Wholesale:

- Pass through dependent on competition
- May or may not change demand- price depends on more than just taxes
- Provides incentive for industry to reduce emissions



Refinery



Rack



Retail

The Choice- Simplicity vs Effectiveness

- Cap & Trade
 - Very Complicated
 - Requires Massive Bureaucracy
 - Sets Actual Emission Limits
- Carbon Tax
 - Simple
 - No New Bureaucracy Required
 - Raises the Cost of Emissions but Sets no Limits

Regulating Green House Gas Emissions

- Cap & Trade

- Carbon Tax

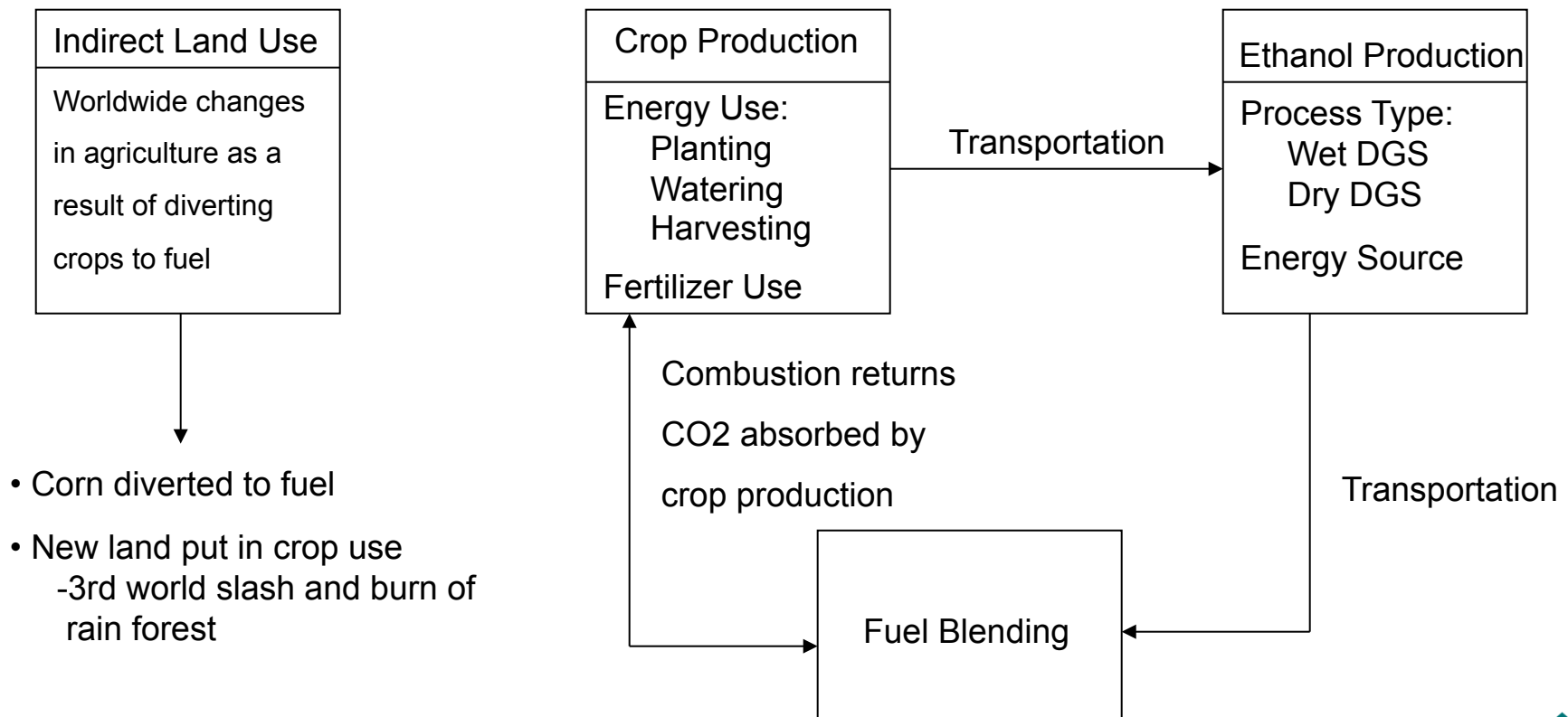
- Low Carbon Fuel Standard

Low Carbon Fuel Standard (LCFS)

- Definition: Reduce the carbon intensity of transportation fuels
- Carbon Intensity: CO₂ emissions per BTU of energy produced
- Requires a life cycle analysis of carbon emissions

Life Cycle Analysis

Example: Corn based ethanol



Life Cycle Analysis

- Life Cycle Also Applies to Crude Oil
 - Conventional Crude
different finding costs/energy use
 - Unconventional Crude- Tar Sands/Oil Shale
much more energy intensive
 - Most legislative approaches use only the above two categories which disfavor unconventional crudes

Climate Change Regulation: Effect on Refining

- **Cap & Trade System**

- Increased Capital Expense for Stationary Sources

 - Energy efficiency projects have a payback

 - Cost advantage to Foreign Refiners

- Increased Costs for Fuel Emission Allocations

 - Passed Through = higher fuel prices

 - Not Passed Through = elimination of Independent

Manufacturers

- **Carbon Tax at Retail**

- Higher Fuel Prices – slow demand decline

- **Low Carbon Fuel Standard**

- More dependence on Middle East Oil

- Higher Fuel Prices

- Accelerated Demand Decline