

Output-Based Allowance Allocation

*“The Carbon Leakage Prevention Act”
HR 7146 (Inslee-Doyle)*

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Overview

The U.S. must address global climate change --
All domestic and foreign industries should contribute

- Background
- Fundamental Policy Questions
 1. Why allocate allowances to industry?
 2. Emissions vs. Output allocation
 3. Which industries should be eligible?
 4. How should compensation be phased out?
- Conclusions



Consensus Cap-and-Trade Policy Objectives

- Achieve environmental goals at minimum economic costs
- Maximize carbon market liquidity
 - want broad coverage under the cap because cost effective mitigation options are widespread
- A policy framework that garners broad *and lasting* political support

Carbon Leakage & Competitiveness

- Critical policy issue of *environmental*, economic and political significance
- June letter from 10 Senate Democrats opposing Lieberman-Warner
- Energy and Commerce Committee
 - White Paper and hearing
- Climate policy will not advance until this issue is addressed

Issue #1: Why Allowance Allocation?

Two distinct reasons - Two different policies

1) Protect shareholders from stock losses

- Studies find <15% of total allowance value

2) Prevent carbon leakage

- For trade-exposed emissions intensive industry
 - Iron and Steel, Aluminum, Cement, etc.
- Studies unclear on how much is needed for each
- Examples:
 - EU ETS phase III; phased out by 2020
 - Lieberman-Warner; phased out by 2031

Issue #2: Emissions vs. Output

- On what basis should allowances be allocated to industry?
 - *Past Emissions*
 - Rewards least efficient plants
 - Inconsistent with overall policy goals
 - *Output of Production*
 - Rewards most efficient plants
 - Updates with changing market conditions
 - Spurs investments in efficiency upgrades and innovation
 - Rewards domestic production

HR 7146 - Direct Costs

For onsite combustion or process emissions

$$\text{Facility Output (production)} \times \frac{\text{Sector average emissions}}{\text{Unit of Output}} = \text{Allowance Rebate}$$

- Includes an 85 percent multiplier to prevent over-allocation
- Accommodates new market entrants
- Creates incentive to:
 - Invest in efficiency improvements
 - Increase domestic production

HR 7146 - Indirect Costs

For upstream emissions/ electricity use

$$\text{Facility Output (production)} \times \text{Sector avg. energy intensity of production} \times \text{Emissions intensity of local utility} = \text{Allowance Rebate}$$

$$\left[\text{Facility output (production)} \times \frac{85\% \text{ sector avg. kWh electricity use}}{\text{Unit of output}} \times \frac{\text{Utility ton CO}_2}{\text{kWh elec. sold}} = \text{Allowance Rebate} \right]$$

- Includes an 85 percent multiplier to prevent over-allocation

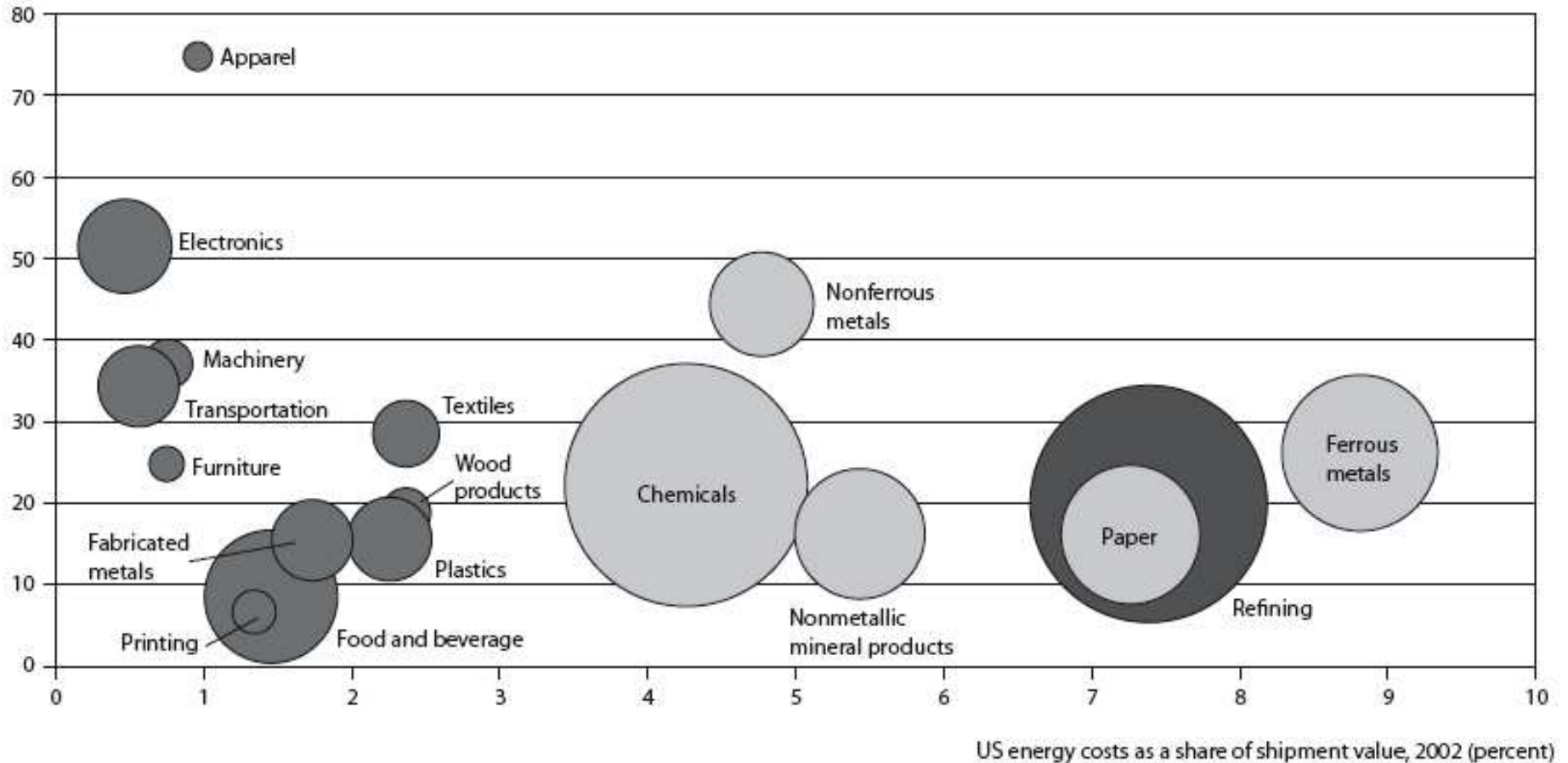
Issue #3: Eligibility

- Which industrial sectors should be eligible for compensation?
 - Lieberman-Warner (Boxer substitute):
 - *Specified* broad sectors:
 - “Iron, steel, pulp, paper, cement, rubber, chemicals, glass, ceramics, SF₆ and aluminum and other non-ferrous metals.”
 - Inslee-Doyle (HR 7146)
 - Prefer to “use a scalpel” to narrowly target recipients
 - minimize over allocation; preserve policy integrity
 - Subject to EPA administrative rule (based on potential for carbon leakage) after reviewing:
 1. Emissions intensity of production processes
 2. Ability to pass-on costs to customers (trade exposure)

Issue #3: Eligibility (cont.)

Figure 1.3 US Industry exposure to climate costs based on energy intensity and imports as a share of consumption

imports as a share of consumption, 2006 (percent)

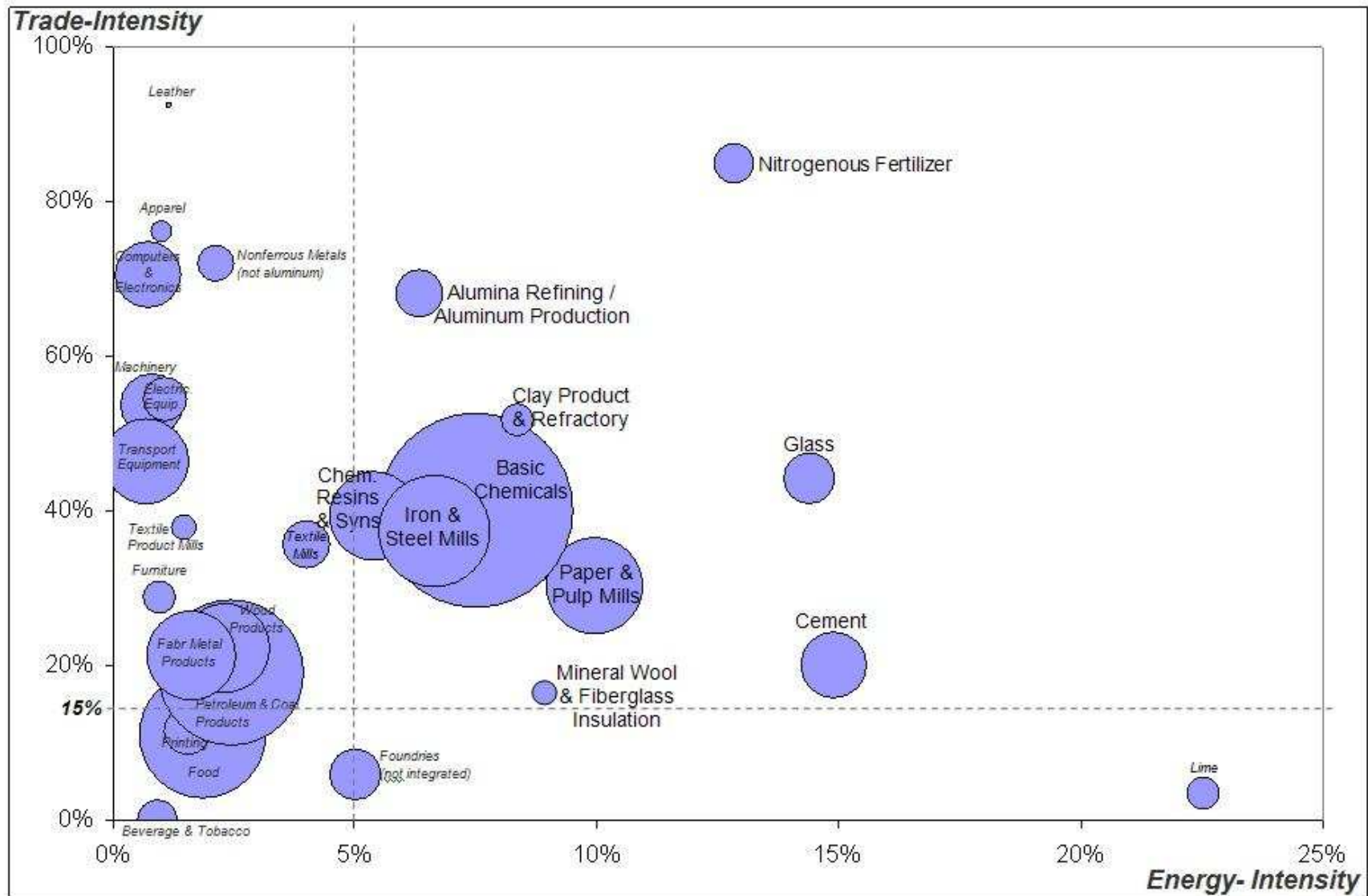


Note: The size of the bubbles indicates the total CO₂ emissions from the industry in 2002.

Sources: US Department of Commerce, Bureau of Economic Analysis, Industry Economic Accounts, 2007; US Department of Energy, Energy Information Administration, Manufacturing Energy Consumption Survey 2002.

Figure reproduced from Leveling the Carbon Playing Field by the Peterson Institute, 2008.

US Industry Leakage Exposure (2006): High-Level Industry View



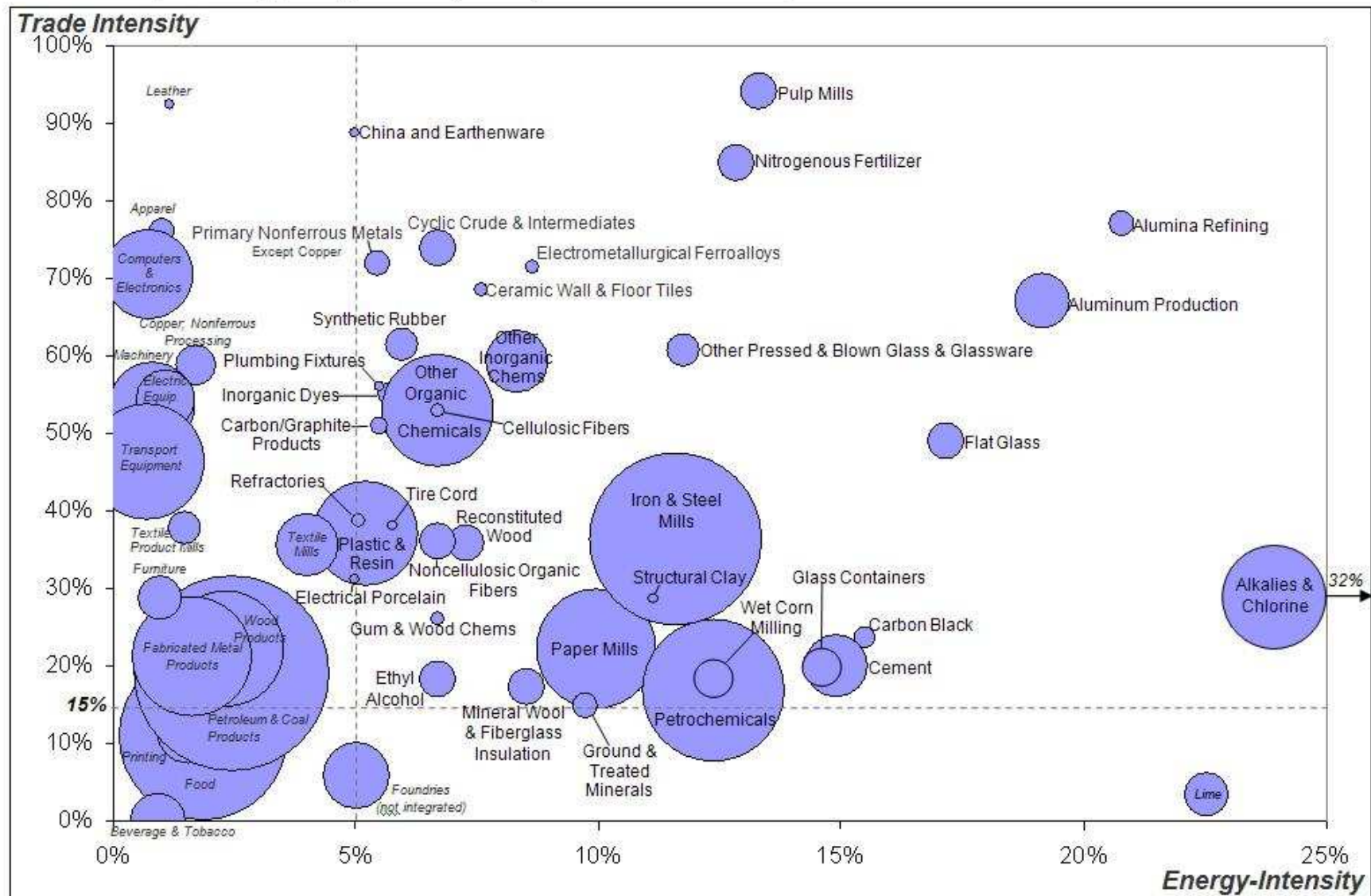
Trade-Intensity = (Imports+Exports) / (Value of Shipments+Imports)

Energy-Intensity = (Energy & Fuel Costs + Generation) / Value of Shipments

Size of Bubble = Amount of energy and fuel consumed as proxy for emissions

Sources: US Census Annual Survey of Manufacturers, US International Trade Commission Tariff & Trade DataWeb

US Industry Leakage Exposure (2006): Detailed Industry Level



Trade-Intensity = (Imports+Exports) / (Value of Shipments+Imports)

Energy-Intensity = (Energy & Fuel Costs + Generation) / Value of Shipments

Size of Bubble = Amount of energy and fuel consumed as proxy for emissions

Sources: US Census 2006 Annual Survey of Manufacturers, EIA 2002 MECS, US International Trade Commission Tariff & Trade DataWeb

Issue #4: Phase out

- At what point should allowance allocation be phased out or replaced with an alternative policy mechanism?
 - When the carbon price disparity is reduced or eliminated
 - Best addressed through international trade and climate agreements
 - Inslee-Doyle (HR 7146):
 - Conditional phase-out to reduce or eliminate allocation
 - Requires presidential determination (with EPA Rule)

The Balancing Act - Pros and Cons

- Output-based allowance allocation can provide a stable, secure first line of defense for industry
 - Preserves a dampened price signal
 - Preserves market share in *expanding* international markets (short-term)
 - Reduces incentive for firms to relocate capital or invest abroad (long-term)
- Allocation is an interim, partial solution
 - A full carbon price signal is still desired
 - Administrative rules (eligibility and phase-out) potentially create some uncertainty and long-term investment risk
 - Conditions driving leakage *must* still be addressed



Conclusions

- The U.S. must lead in reducing GHG emissions and preventing catastrophic climate change
- HR 7146 helps to remove a barrier to moving forward
 - This is an interim, partial solution
 - Complementary policies/ efforts are needed to
 - Eliminate the source of the carbon leakage problem
 - Compel action by other countries
- More objective analyses are needed to
 - Identify at-risk sectors and sub-sectors
 - Determine appropriate levels of compensation for each



Thank You!

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