



The U.S. Climate Change Debate: State of Play and Competitiveness Issues



**Trade and Climate Change in Emerging Economies:
Competitiveness, Technology and Intellectual Property Rights Dimension**

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Joel Yudken, Ph.D.

Principal, High Road Strategies, LLC

104 N. Columbus Street, Arlington, VA 22203

(703) 528-7896 • jyudken@highroadstrategies.com

www.highroadstrategies.com



Obama Administration Policy

- Climate change high on Obama administration agenda, reversing Bush's policy
 - American Recovery and Reinvestment Act of 2009—\$80 billion in clean energy investments
 - Raised fuel economy standards for vehicles
 - Worked with House of Representatives to pass comprehensive clean energy and climate change bill
- U.S. reengaged in UN climate negotiations
 - Obama announced pledge to reduce US emissions 17% below 2005 by 2020; 83 % by 2030
 - Supports binding agreement for developed and developing nations
 - Major Economies Forum, bilateral meetings (China, India) and declarations
 - Helps broker and supports Copenhagen Accord



Legislative State-of-Play

- American Clean Energy and Security Act (Waxman-Markey bill, HR 2454) passed by U.S. House June 2009
- Kerry-Boxer (S. 1733)
 - Similar to ACESA; BA, but no specifics
- Cantwell-Collins (S. 2877)
 - Regulates entry point (first seller) of fossil-based carbon; auction of allowances to first sellers; “price collar” \$7-\$21; output-based rebate to EITEs; BA starting 2013
- Kerry (D-MA), Lieberman (I-CT), Graham (R-SC) bill to be introduced in April 2010
 - Sector-specific emissions limits, power plants; manufacturing; revenue recycling to consumers; price collar
- Political exhaustion from health care battle, 2010 elections creates uncertainty about climate bill prospects



Trade & Carbon Leakage

- **Why EITE protection measures?**
 - Industrial retention and competitiveness (industry, labor, politicians)
 - Carbon leakage; encourage climate compliance (environmentalists)
- **Cost mitigation measures**
 - **Output-based rebates**
 - **Border adjustment fees**
 - EITE and compliance criteria; start year; fee calculation
 - **Legal and effectiveness issues**
 - Is it WTO compliant?
 - Will it encourage other nations' comparability?
 - Will it adequately mitigate costs?
 - Will it encourage low-carbon technology investments?

Climate-Manufacturing Challenge: A U.S. Perspective

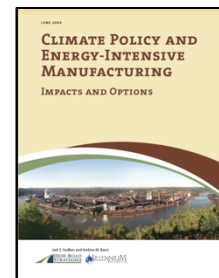
- **Crisis in U.S. manufacturing**
 - Loss of capacity, jobs
 - Foreign competition, offshoring
- **Energy-intensive industries especially affected**
 - Consolidation, restructuring, import penetration, offshoring
- **EI manufacturing and climate policy**
 - EI industries cornerstone of manufacturing—beginning of supply chains for all manufacturing
 - Sensitive to fossil-fuel energy prices, international competition
 - Concerned about offshoring, competitive disadvantage



Columbia Falls Aluminum Plant



Climate Policy and EI Manufacturing Study



- What are climate policy impacts on the competitiveness of energy-intensive manufacturing industries
 - Iron & steel, primary & secondary aluminum, paper & paperboard, petrochemicals, chlorine-alkalies manufacturing
- What policies are needed to maintain manufacturing competitiveness and retain jobs, while cutting emissions?
 - To mitigate cost impacts and level the playing field in international trade
 - Enable and encourage industry investments in new technology



Climate Policy Comparison

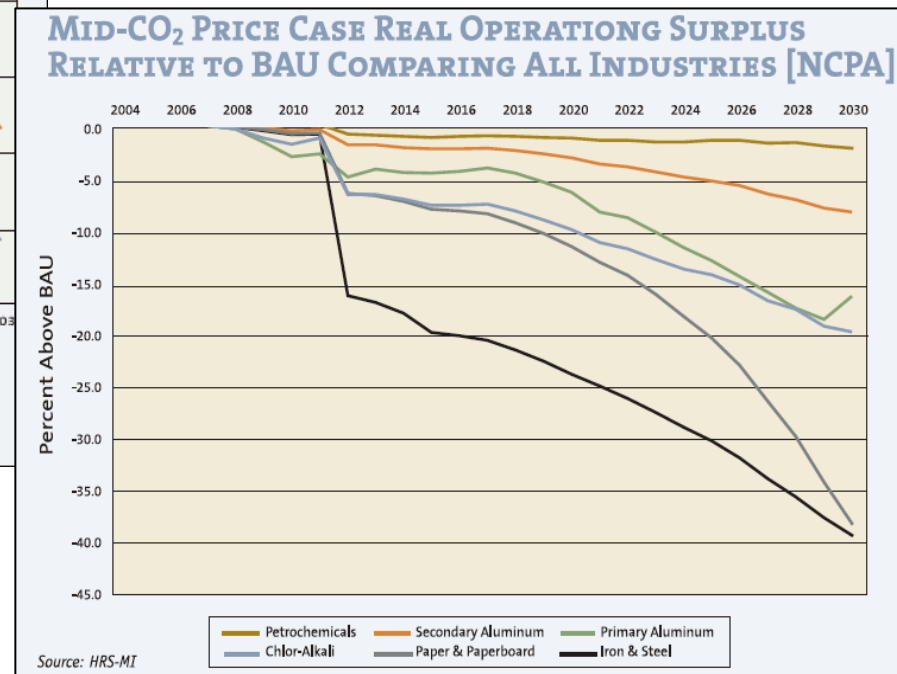
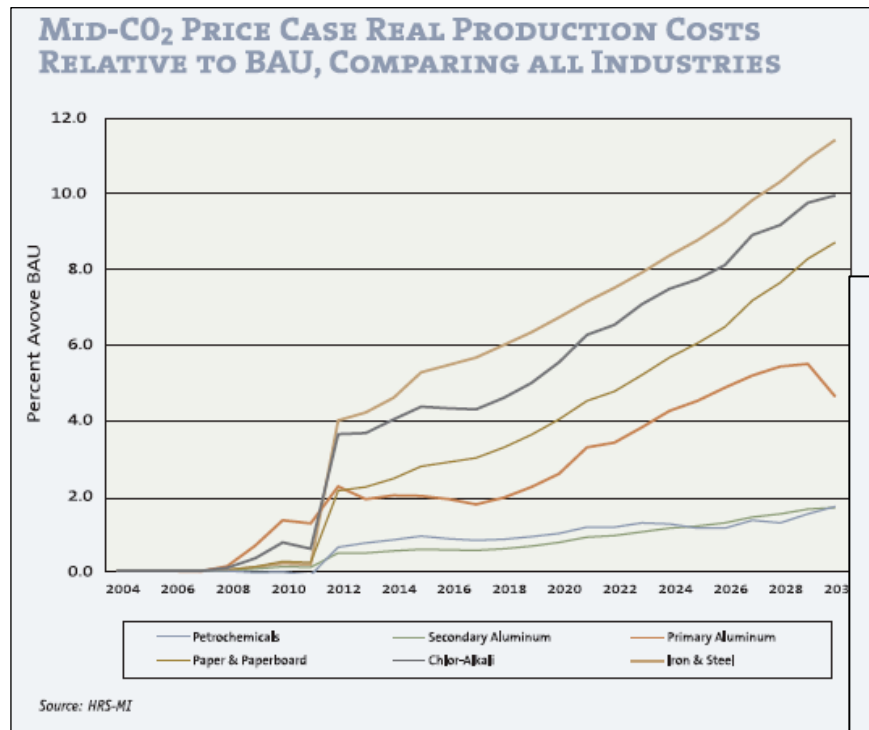
American Clean Energy & Security Act of 2009 (ACES; H.R. 2454)	Lieberman-Warner Climate Security Act of 2007 (S. 2191)
<p>GHG cap-and-trade program</p> <ul style="list-style-type: none"> • 17% reduction–2020; 58%–2030; 83%–2050 relative to 2005 • ACES Basic–allowance prices: \$31.7–2020; \$64.8–2030 (USD 2007) 	<p>GHG cap-and-trade program</p> <ul style="list-style-type: none"> • 39% reduction–2030; 72%–2050 relative to 2006 • Allowance prices: \$31.7–2020; \$64.8–2030 (USD 2007)
Allowances to electricity, NG distributors; low-income consumers; energy-intensive industries ; states; etc.	Auction allowances used for low-carbon technology programs; transition assistance; states; etc.
CCS demonstration, early deployment; building, appliance standards; other technology improvements	Low-emissions technologies—nuclear, coal, CCS; incentives for CCS, biogenic carbon sequestration; building, appliance standards
Domestic and international offsets; banking	Domestic and international offsets each capped at 15%;
<p>BAU:AEO2009</p> <ul style="list-style-type: none"> • 2.4% long-term growth; short-term growth <AEO2008; reflects ARRA, current leg. & regs. 	<p>BAU:AEO2008</p> <ul style="list-style-type: none"> • 2.5% long-term growth; includes 2007 energy bill; current legislation, regulations



Summary of Findings

- Modest to high impacts on production costs, operating surplus (profits), market shares from higher energy prices:
 - Contingent on energy mix, cost-pass along assumptions, market conditions
- Pressure on industries to take actions to reduce costs and prevent profits from decreasing to undesired levels
- Technology options available, but timing critical
- Allowance allocation policy would buy time for industry adjustment
- Other policies may be needed to encourage long-term investment in advanced energy-saving technologies

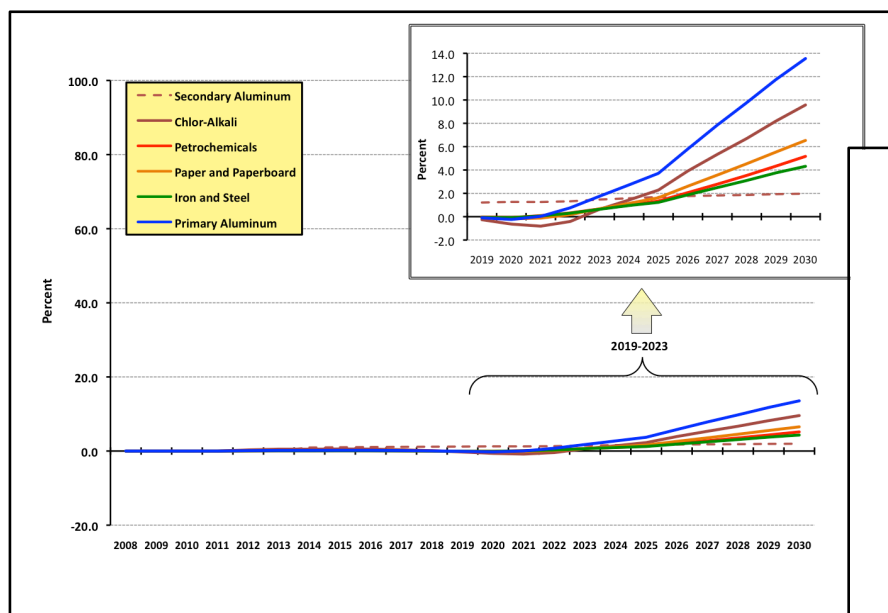
L-W Policy Economic Impacts



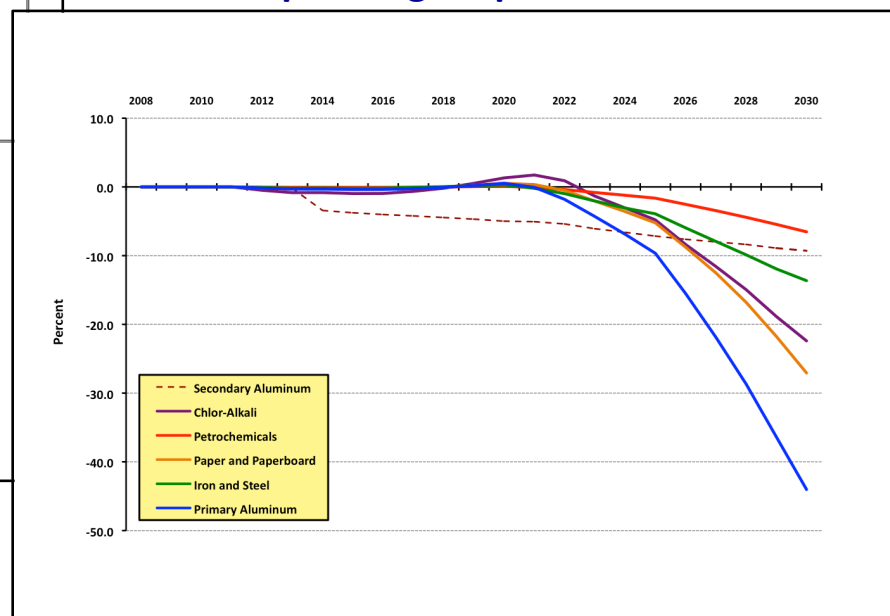
Allowance Rebate Study

- Environmental Defense Fund sponsored
- Evaluated effectiveness of output-based allowance rebates

ACESA—Production Costs With Rebates



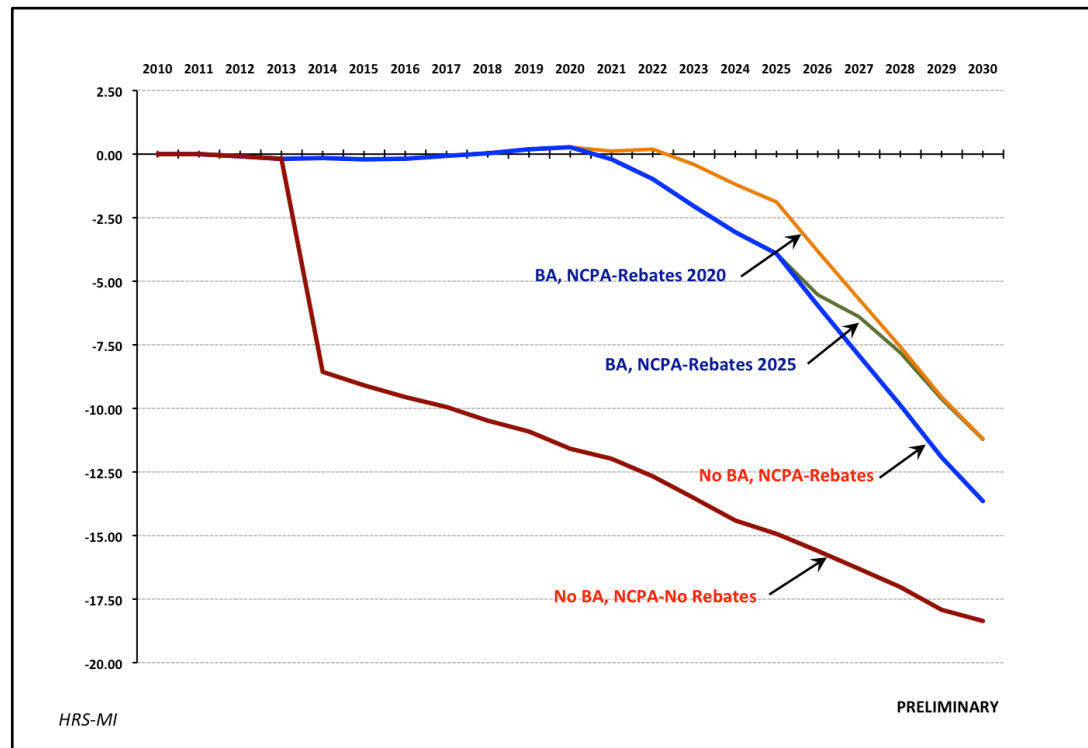
ACESA—Operating Surplus With Rebates



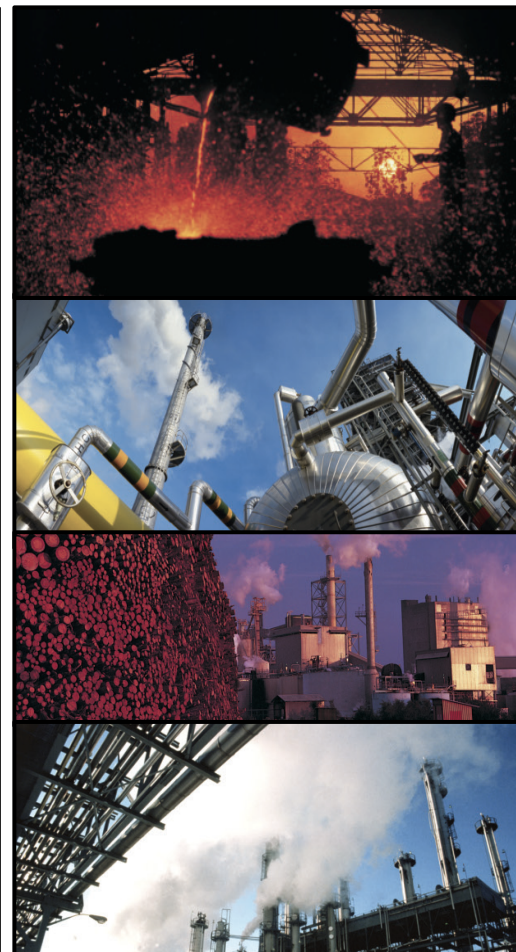
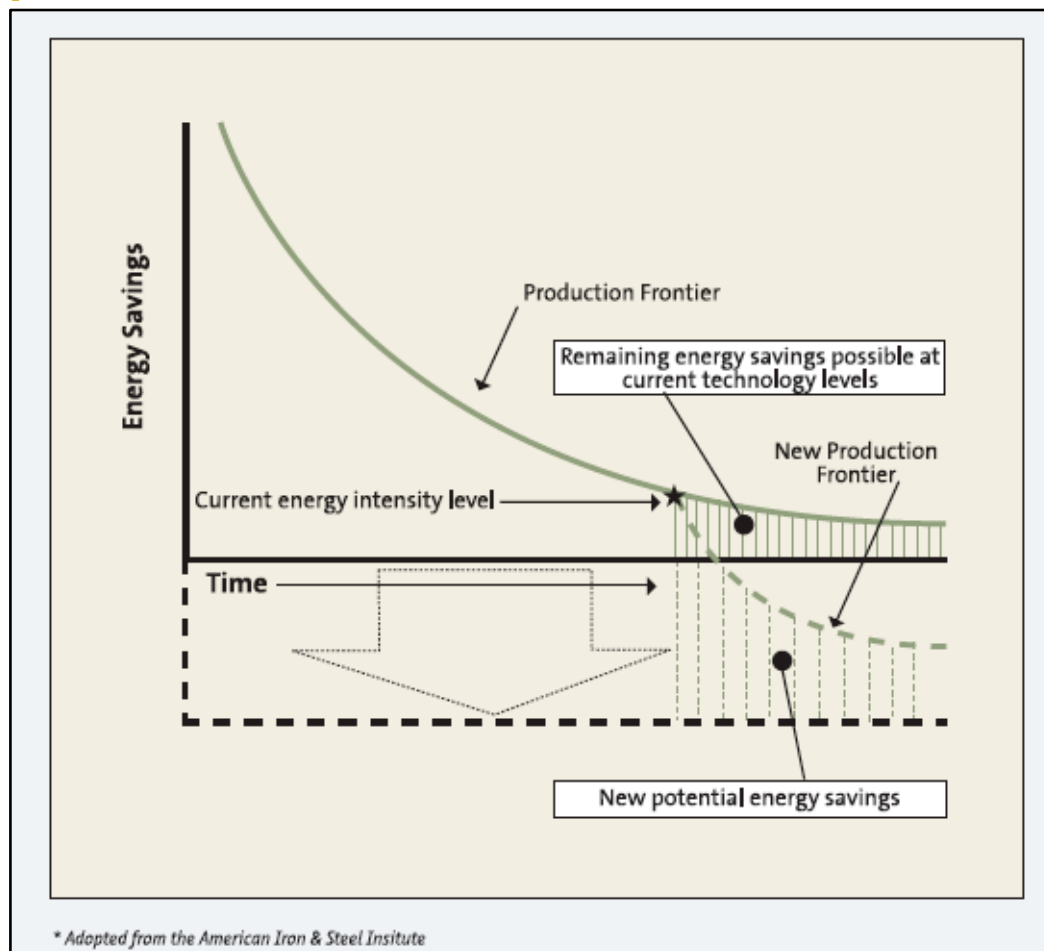
Border Adjustment Study

- EDF, NCEP, AFL-CIO Sponsored
- Evaluating border adjustment for ACESA Basic Case

ACESA–Operating Surplus BA Comparison



Energy Savings Potential



Technology Investment Options

- “Low-hanging fruit”
 - Heat recovery, CHP, sensors and process controls, more efficient pumping, motor, compressed air systems, etc.
- Improved recycling (steel, aluminum, paper)
- Advanced and alternative process technologies:
 - Low-carbon iron-making technology (iron & steel)
 - Wetted drained cathode/inert anodes (aluminum)
 - Black-liquor gasification; efficient drying technology; biorefineries (paper)
 - Shift to membrane technology (chlor-alkali)
 - Advanced furnaces, CHP, biomass-based systems (petrochemicals)
- Barriers to Adoption:
 - Costs; timing (technical feasibility, vintage); lack of capital



So who goes first?



Or can we all do it together?



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