

Carbon Legislation and the Clean Air Act: What's Next?

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What's Happened So Far....

- USEPA is proposing and adopting rules to regulate Greenhouse Gases (GHG)
- The U. S. House of Representatives passed a comprehensive climate change bill:
 - American Clean Energy and Security Act of 2009 (1427 pages)
 - Commonly known as the “Waxman-Markey” Bill
- The U.S. Senate has passed two bills out of committee that mostly cover the areas included in the House bill:
 - American Clean Energy Leadership Act (clean energy, energy efficiency and energy independence) (531 pages)
 - Clean Energy Jobs and American Power Act (GHG reduction, worker transition and adaptation to climate change) (925 pages). This is the “Kerry-Boxer” Bill.

What's Happened So Far....at USEPA?

- In 2007, the U. S. Supreme Court found in Massachusetts v. EPA that GHG fit within the definition of “air pollutant” in the Clean Air Act
- On remand, USEPA has:
 - Proposed to find that GHG endanger human health and the environment (April 24, 2009)
 - Proposed GHG emission standards for new motor vehicles (September 28, 2009)
 - Proposed PSD thresholds for GHG and Title V operating permit thresholds (October 27, 2009)
 - Final action on all three is expected in Spring 2010
- USEPA also has:
 - Adopted a GHG Emission Reporting Rule (October 30, 2009)
 - Granted California a Waiver to Implement Vehicle Emission Standards for GHG (July 8, 2009)

What's Happened So Far....in the House?

- The Waxman-Markey Bill awaits a conference committee to reconcile it with the Senate Bill, when that is passed
- H.R. 2454, passed on June 26, 2009
- Waxman-Markey has five titles:
 - Clean Energy
 - Energy Efficiency
 - Reducing Global Warming Pollution
 - Transitioning to a Clean Energy Economy
 - Agriculture and Forestry Related Offsets

What's Happened So Far....in the Senate?

- The Kerry-Boxer bill has passed one committee, and has the following titles (S.F. 1733):
 - Greenhouse Gas Reduction Programs
 - Research
 - Transition and Adaptation
 - Reducing Global Warming Pollution
 - Program Allocations
- The American Clean Energy Leadership Act (S.F. 1462) has passed one committee, and has the following titles:
 - Clean Energy and Technology Development
 - Enhanced Energy Efficiency
 - Improved Energy Security
 - Energy Innovation and Workforce Development
 - Energy Markets
 - Policy Studies and Reports

What's Next?

- The Congress will finish work, most likely in 2010, on a comprehensive climate change act
- The U.S. legislative process will not be complete prior to the international negotiations in Copenhagen in December 2009 on a successor agreement to the Kyoto Protocol
- It is possible, but very unlikely, that the U.S. Senate will enact a bill before the Copenhagen negotiations
- It is unclear whether Congress will establish a stand-alone GHG reduction program, or layer it on top of one or more existing Clean Air Act programs

Main Areas of Difference: House and Senate

- Passed out of Senate Environment and Public Works Committee last week
- Must be heard by other Senate Committees
- Main Differences so far:
 - Does not preempt existing CAA programs; delays use of NSPS program until 2020
 - 20% GHG reduction by 2020
 - More policies to encourage nuclear power and domestic oil production
 - Less allowance for international offset projects
 - Stronger cost control mechanisms
- Very much a work in progress, but draws heavily from Waxman-Markey bill

Waxman-Markey Bill: Title II, Safe Climate Act

- Adds Two New Titles to the CAA:
 - Title VII: Reducing Global Warming Pollution (economy-wide cap and trade program)
 - Title VIII: Additional GHG Standards
- Standards of Performance for new and existing sources
 - Applies to industrial source categories that individually have GHG emissions over 10,000 tons CO₂e and that emit at least 20% of emissions *not covered* by the cap
 - EPA must take into account projected allowances costs under cap-and-trade program, and set standards so that cost of compliance does not exceed this cost
- Hydrofluorocarbons regulated under CAA Title VI, with phase-out schedule designed to reduce 85% of emissions by 2032

Waxman-Markey Bill: Title III, Safe Climate Act

- CAA Programs that do not apply to GHGs based on their impact on climate change:
 - National Ambient Air Quality Standards
 - New Source Review
 - Title V Operating Permits Program
 - Hazardous Air Pollutant Program
 - International Air Pollution Provision
- State authority under CAA to adopt and enforce air emission standards preserved, including for GHG
- Bars states from implementing or enforcing GHG emissions caps between 2012 and 2017
- States may regulate GHG by other means

Waxman-Markey Bill: Title II, Safe Climate Act

- Greenhouse gas cap and trade program with reductions from 2005 levels as follows:
 - 3% by 2012,
 - 17% by 2020,
 - 42% by 2030, and
 - 83% by 2050
- Emission allowances also include offset credits
 - Limited to 2 billion tons per year
 - Formula established to develop percentage of offset credits each source may use
 - Split evenly between domestic and international offsets
 - Starting in 2018, international offsets must be 5 tons for every 4 tons of emission allowances being offset
 - Allows “term offset credits” to be used, with conditions

Waxman-Markey Bill: Title II, Safe Climate Act

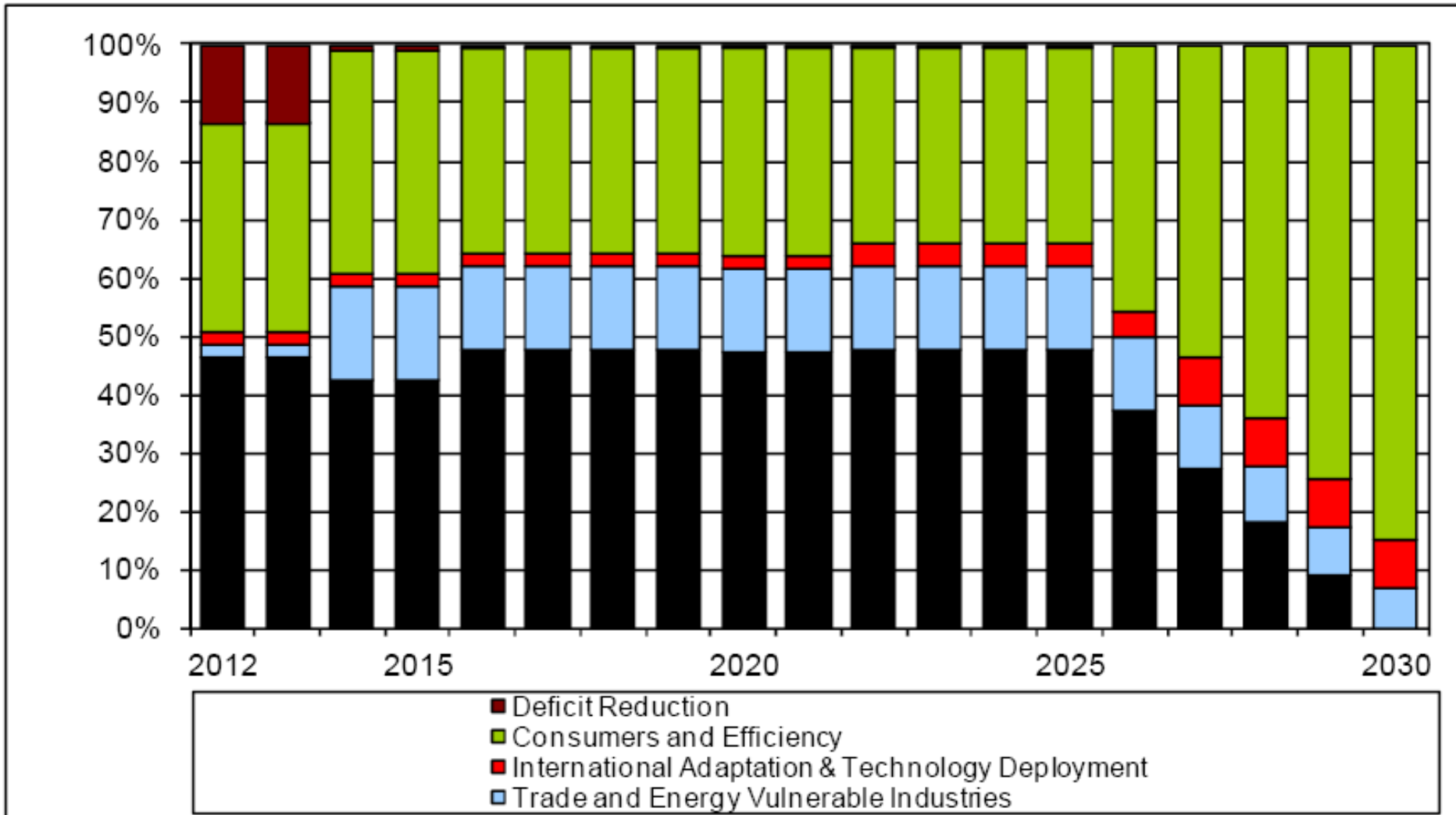
- Covered Entities would include:
 - Electricity sources (2012)
 - Chemical, petrochemical and other industrial sources that emit 25,000 tons CO₂e (2014)
 - Fuel producers: 25,000 ton CO₂e emissions measurement is based on what would be emitted from combustion of fuels produced (2012)
 - Natural gas local distribution companies, or groups of affiliated companies, that deliver over 460 million cubic feet of gas to non-covered customers (2016)
- Trading of Allowances
 - Trading and banking are unlimited
 - Borrowing unlimited from allowances one year in future, prohibited for allowances over five years into future, “interest” on use of allowances from 2-5 years in the future
- Noncompliance Penalties:
 - Pay double the cost for number of allowances short of emissions, and
 - Surrender that amount of allowances in next year

Waxman-Markey Bill: Title II, Safe Climate Act

- Allowance Allocations
 - Left blank in first draft of bill
 - Not blank now
 - Large percentage of allowances distributed without need to purchase at auction, including (through 2020):
 - 35% to electricity consumers (0.5% to small electric LDCs that deliver under 4 million MWH to retail customers per year)
 - 9% to natural gas consumers
 - 1.5% to home heating oil and propane consumers
 - 15% to low income consumers
 - 13.4% to trade-vulnerable industries
 - Small percentages to 16 other categories
 - Rest sold at auction

EIA Analysis

Figure 28. ACESA H.R. 2454 Allocation of Revenue by Major Category, 2012-2030



Source: H.R. 2454, American Clean Energy and Security Act of 2009.

Waxman-Markey Bill: Title II, Safe Climate Act

- Allowances are distributed to LDCs “exclusively for the benefit of the consumer”
 - Requirement that value of allowance benefit the utility consumer
 - State utility commissions decide how to assure this, either in rulemaking or a rate case, before allowances are distributed
 - LDCs submit reports on how this requirement will be met each five years (including prior approval by state commissions each five years)
 - EPA will audit programs to assure goal met
 - For small LDCs, some allowances are distributed for conservation, renewable energy and low income programs
 - Federally-administered Energy Refund Program for low-income families is established in Title IV of the bill

Waxman-Markey Bill: Title III, Safe Climate Act

- Offsets allow reductions outside of cap-and-trade system to be credited against the cap
- Standard requirements:
 - Reduce GHG emissions
 - Verifiable
 - Additional
 - Permanent
- Can be important in reducing cost of cap-and-trade
- Some estimates suggest that without offsets, the cost of a cap-and-trade program could nearly double

EIA Analysis of Waxman-Markey

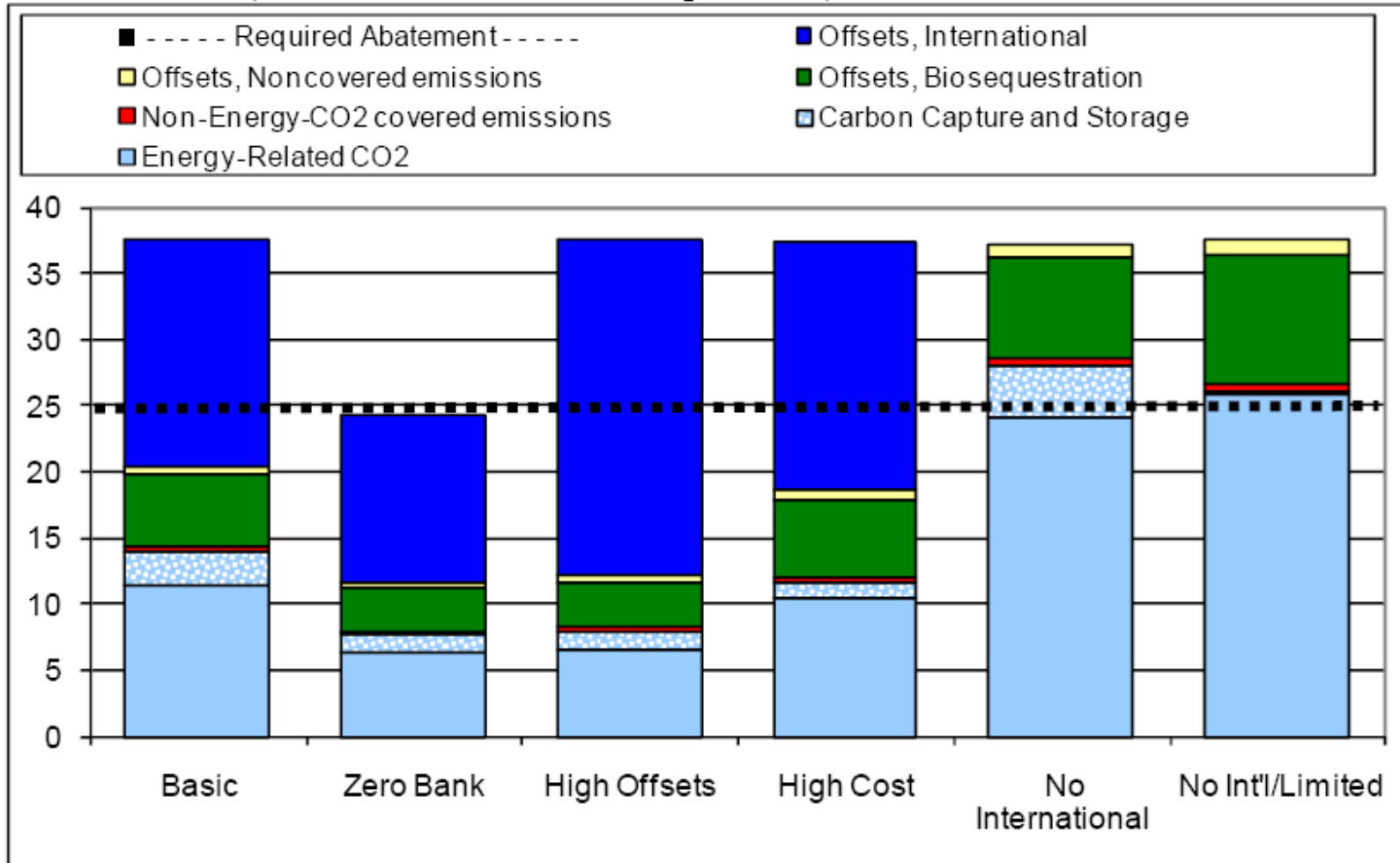
- EIA analyzes six scenarios through 2030:
 - Basic Case: assumes abundant offsets, large scale deployment of clean technologies
 - Zero Bank Case: assumes no banked allowances
 - High Offset Case: assumes immediate use of international offsets to aggregate ceiling
 - High Cost Case: assumes costs of nuclear, coal with CCS and biomass are 50% greater than in basic case
 - No International Case: assumes international offset credits are severely limited
 - No International/Limited Case: assumes “No International” case, and key technologies cannot expand beyond reference case levels

EIA Analysis

- Main conclusions:
 - Amount of reductions in covered emissions is generally exceeded by amount of offset credits used
 - Most reductions of energy-related emissions are expected to occur in the electric sector
 - Higher costs than Basic Case lead to more use of offsets and natural gas to generate electricity
 - Energy prices rise, but effects mitigated through 2025 by allowance allocations
 - Free allocations reduce impact on energy-intensive trade-vulnerable industries
 - GDP is impacted -0.2% to -0.9% over 2012-2030 time frame

EIA Analysis

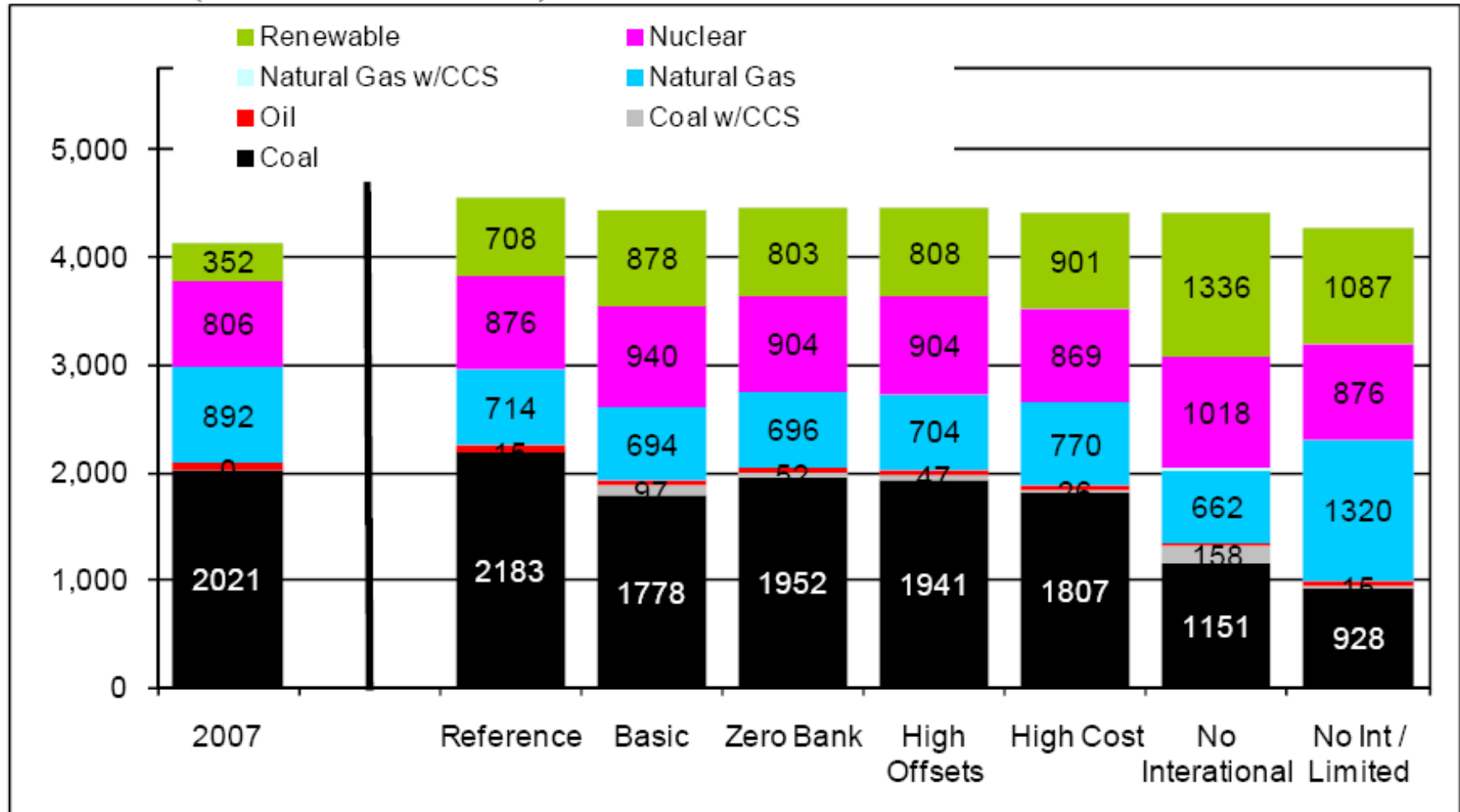
Figure ES-1. Components of Cumulative Compliance in ACESA Main Cases, 2012-2030
(billion metric tons CO₂-equivalent)



Source: National Energy Modeling System runs, STIMULUS.D041409A, HR2454CAP.D072909A, HR2454NOBNK.D072909A, HR2454HIOFF.D072909A, HR2454HC.D072909A, HR2454NOINT.D072909A, and HR2454NIBIV.D072909A.

EIA Analysis

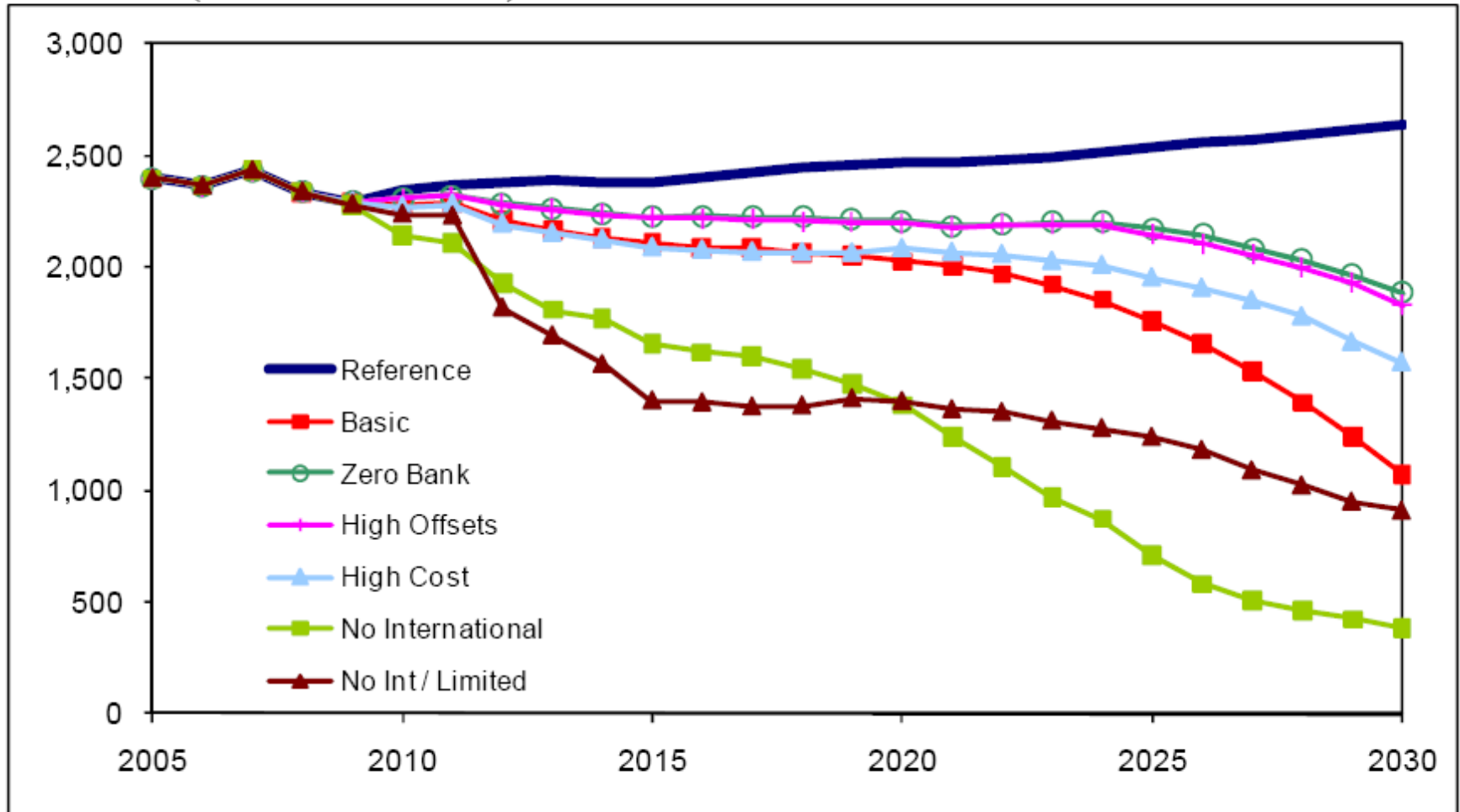
Figure 12. Generation by Fuel in ACESA Main Cases, 2020
(billion kilowatthours)



Source: National Energy Modeling System runs, STIMULUS.D041409A, HR2454CAP.D072909A, HR2454NOBNK.D072909A, HR2454HIOFF.D072909A, HR2454HC.D072909A, HR2454NOINT.D072909A, and HR2454NIBIV.D072909A.

EIA Analysis

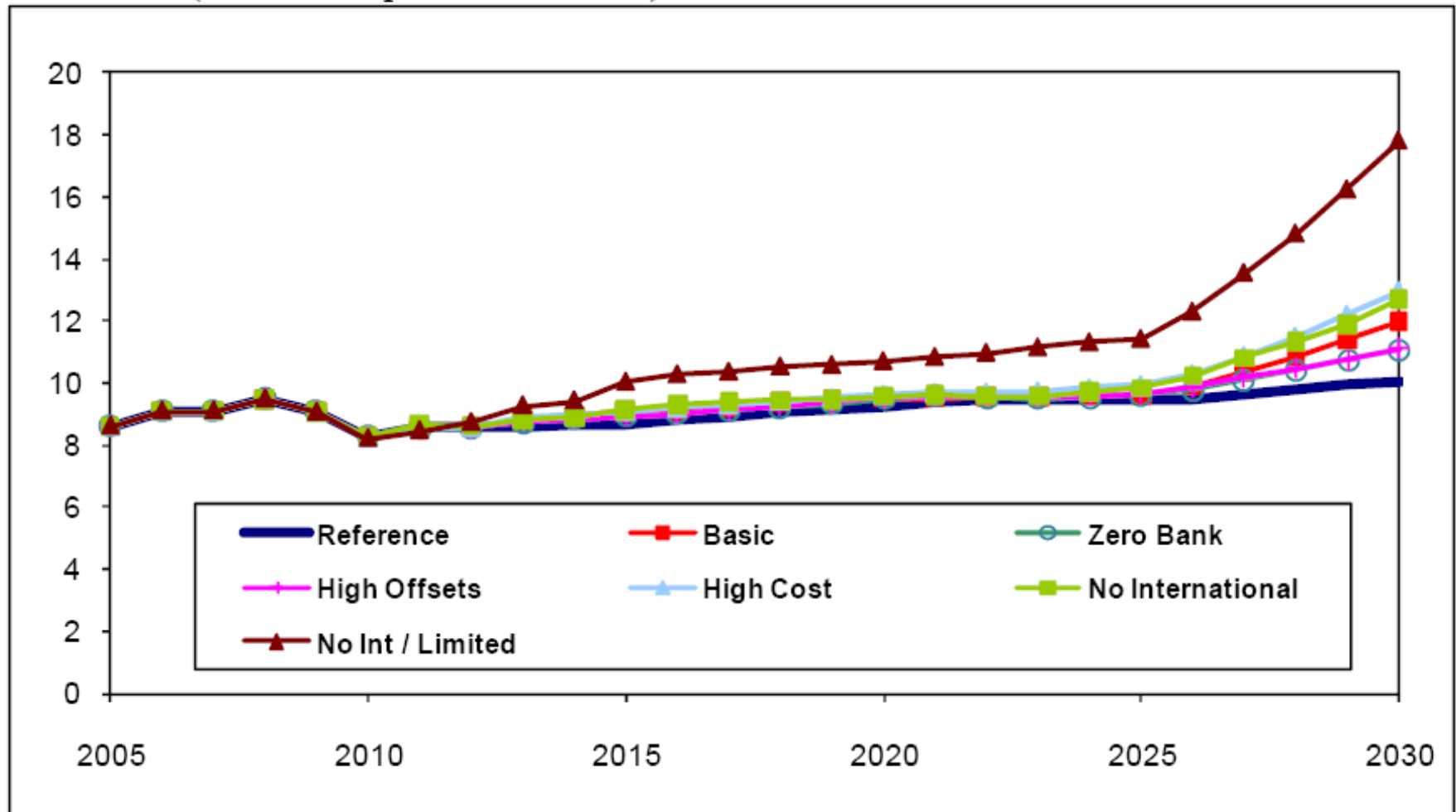
Figure 10. Electricity Sector CO₂ Emissions in ACESA Main Cases, 2005-2030
(million metric tons)



Source: National Energy Modeling System runs, STIMULUS.D041409A, HR2454CAP.D072909A, HR2454NOBNK.D072909A, HR2454HIOFF.D072909A, HR2454HC.D072909A, HR2454NOINT.D072909A, and HR2454NIBIV.D072909A.

EIA Analysis

Figure 15. Electricity Prices in Main ACESA Cases, 2005-2030
(2007 cents per kilowatthour)

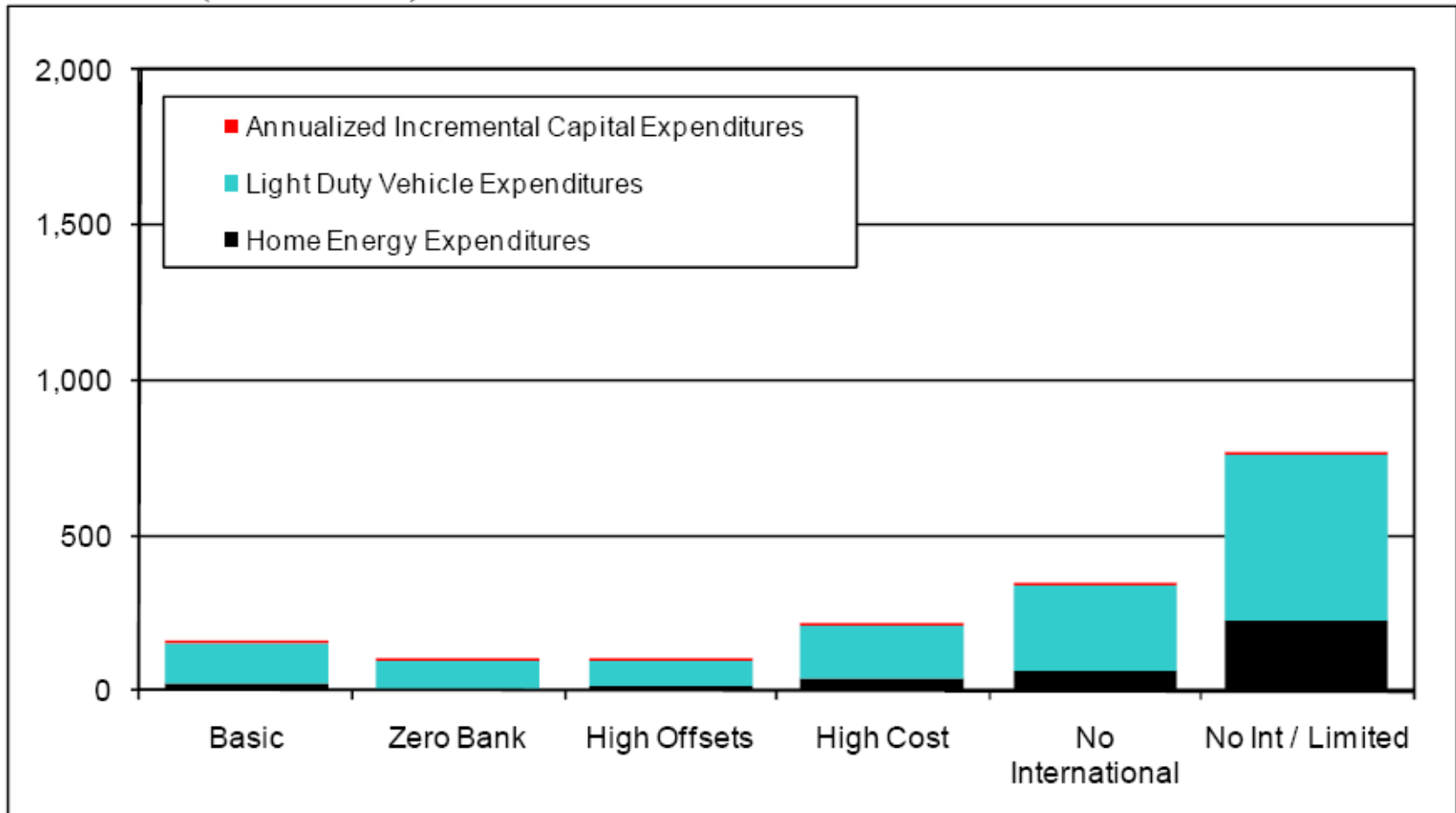


Source: National Energy Modeling System runs, STIMULUS.D041409A, HR2454CAP.D072909A, HR2454NOBNK.D072909A, HR2454HIOFF.D072909A, HR2454HC.D072909A, HR2454NOINT.D072909A, and HR2454NIBIV.D072909A.

EIA Analysis

Figure 24. Average Change in Household Energy Expenditures in Main ACESA Cases, 2020

(2007 dollars)



Source: National Energy Modeling System runs, STIMULUS.D041409A, HR2454CAP.D072909A, HR2454NOBNK.D072909A, HR2454HIOFF.D072909A, HR2454HC.D072909A, HR2454NOINT.D072909A, and HR2454NIBIV.D072909A.

Waxman-Markey Bill: Title I, Clean Energy

- Efficiency and Renewable Electricity Standard
 - Requirement for 20% by 2020 from the following:
 - Wind
 - Solar
 - Geothermal
 - Renewable biomass, biogas, biofuels
 - Qualified hydropower
 - Marine and hydrokinetic renewable energy
 - Landfill gas, wastewater treatment gas, coal-mine methane and qualified waste-to-energy
 - 5% to 8% can be met with efficiency savings
 - Applies to retail electric suppliers (over 4 million MWH)
 - Alternative compliance payment of \$25/credit

Waxman-Markey Bill: Title I, Clean Energy

- Program to develop carbon capture and sequestration (CCS) technology
 - Utilities can vote to form Carbon Storage Research Corporation, funded by assessments of \$1 billion/year on electricity sales
 - Incentive allowance program to encourage CCS
 - Performance standards for new coal plants after 2020 requires 65% reduction on CO₂e emissions
 - Retrofit requirements by 2025 for coal plants built between 2009 and 2020
- Programs to further deployment of Smart Grid technology and to develop infrastructure for plug-in electric vehicles

Waxman-Markey Bill: Title II, Energy Efficiency

- Programs and requirements for improving efficiency:
 - New and existing buildings and manufactured homes
 - New building codes to be 50% more energy efficient by 2015, and by 5% more each three years thereafter until 2030
 - More stringent lighting and appliance efficiency standards
 - Industrial energy efficiency standards and reward programs
- Require EPA to adopt greenhouse gas emission standards for mobile sources under the existing Clean Air Act (CAA), harmonized with CAFÉ and California standards
- National Energy Efficiency Goal (GDP/unit of energy): improve 2.5% per year through 2030

Waxman-Markey Bill: Title IV, Transitioning to a Clean Energy Economy

- Rebate programs designed to keep U.S. manufacturers from suffering competitive disadvantage due to the cost of additional emission controls
- Programs to promote training for “green jobs” and to assist displaced workers
- Energy tax credits and energy refunds for low-income consumers
- Program to encourage deployment of clean technologies to developing countries that have ratified international treaties or undertaken substantial reduction programs
- National climate change adaptation program

Waxman-Markey Bill: Title V, Agriculture and Forestry Offsets

- Secretary of Agriculture runs this program and adopts methodologies to be used
- Term offset credits involve offsets being credited for five years, with a re-enrollment requirement for additional terms
- USDA GHG Emission Reduction Advisory Committee to assist in implementation
- List of eligible projects includes multiple actions in the following categories:
 - Agricultural, grassland and rangeland sequestration
 - Land use changes and forestry activities
 - Manure management and disposal

Contact Information

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