

Recent EPA Climate Change Initiatives

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Overview



- Talk focuses on selected regulatory initiatives and legislative analyses:
 - Endangerment Finding
 - GHG Reporting Rule
 - Economic Analysis of Waxman-Markey Bill
- Other Administration climate change activities (domestic and international) beyond scope of this talk

Endangerment: Background



- April 2, 2007– In *Massachusetts v. EPA*, the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act
- EPA was required determine whether:
 - GHG emissions from new motor vehicles cause or contribute to air pollution;
 - This air pollution may reasonably be anticipated to endanger public health or welfare; or
 - The science is too uncertain to make a reasoned decision

Endangerment Findings



- April 17, 2009 – Administrator signed a proposal with two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act
 - **Proposed Endangerment Finding:** Current and projected concentrations of the mix of six key greenhouse in the atmosphere threaten the public health and welfare
 - **Cause or Contribute Finding:** Combined emissions of CO₂, CH₄, N₂O, and HFCs from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key greenhouse gases and hence to the threat of climate change

Endangerment (*cont.*)



- This action, if finalized, does not impose any requirements on industry or other entities
 - Not accompanied by a proposed standard
 - Does not impose any timetable for issuing regulations
 - Does not indicate that EPA has made any final decisions about regulating GHGs under the Clean Air Act

Endangerment: Next Steps



- 60 day public comment period from date of publication in FR (April 24-June 23)
 - Over 400 pre-publication comments received
- Two public hearings scheduled
 - May 18, 2009—Arlington, VA
 - May 21—Seattle, WA
- General Information and FAQs available on website at:
<http://epa.gov/climatechange/endangerment.html>

GHG Mandatory Reporting Rule



- Required by FY08 Appropriations Act – Dec. 26, 2007
 - Proposal due Sept. 26, 2008
 - Final due June 26, 2009
- Preamble and rule draft submitted to OMB Oct. 24, 2008
- Package withdrawn Jan. 26, 2009 per regulatory review memos and re-submitted Feb. 11, 2009
- Proposal signed March 10, 2009; published in Federal Register April 10, 2009

MRR Requirements



- Rule applies to:
 - Suppliers of fossil fuels & industrial chemicals
 - Manufacturers of motor vehicles and engines
 - Direct emitters of greenhouse gases with emissions generally equal or greater to 25,000 metric tons/year (equivalent to 131 rail cars' worth of coal, or average annual energy use of 2,200 homes)
- Covers 85%-90% of total U.S. GHG emissions
- Excludes most small businesses and governments
- Reporting at the facility level

MRR: Next Steps



- 60-day public comment period (closes June 9, 2009)
 - Held 2 public hearings: Alexandria, VA & Sacramento, CA
 - Contact Katherine Sibold, 202-343-9280, for more information
 - General & source-specific information available on MRR website:
<http://epa.gov/climatechange/emissions/ghgrulemaking.html>
- EPA incorporates comments
- Final rule development and interagency review
- Publication of final rule in the Federal Register
- Rule implementation

EPA Analysis of Waxman-Markey Bill



- Discussion draft introduced March 31, 2009
- If enacted, the bill would:
 - Advance energy efficiency and reduce reliance on oil
 - Reduce GHG emissions through an economy-wide cap and trade program
 - Stimulate innovation in clean coal technology
 - Accelerate use of renewable energy sources
 - Create strong demand for clean energy technologies and assist economic recovery and job growth
- At request of bill sponsors, EPA's economic analysis of the bill was issued April 21st
 - Analysis focused on cap and trade provisions due to time limitations
 - Projections of emissions and energy demand based on AEO 2009 (December 2008) and do not include the stimulus law

Major Findings



- The Waxman-Markey Discussion Draft transforms the structure of energy production and consumption, moving the U.S. to a clean energy economy.
- Allowance prices are less than previous EPA analyses of Senate cap and trade bills, ranging from \$13 to \$17 per metric ton CO₂ equivalents (tCO₂e) in 2015 and from \$17 to \$22/tCO₂e in 2020 in the core scenario.
- Offsets have a strong impact on cost containment.
 - The capped sector uses all of international offsets allowed in all years of the policy (1.25 billion tCO₂e offsetting 1 billion tCO₂e of capped sector emissions annually).
 - The 1 billion tCO₂e annual limit on domestic offsets is never reached due to limited mitigation potential.

Major Findings

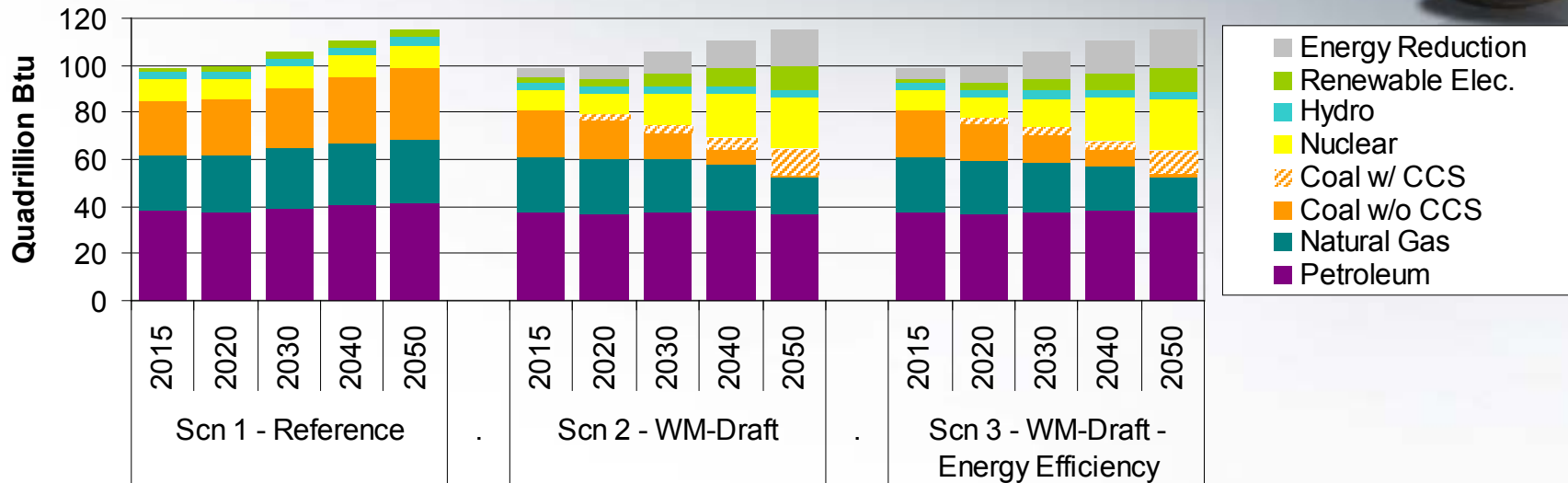


- The cap & trade policy has a relatively modest impact on U.S. consumers assuming the bulk of revenues from the program are returned to households.
- For the duration of the policy, average annual household consumption is estimated to decline in a range of \$98 to \$140 dollars per year* relative to reference scenario.
- While this analysis contains a set of scenarios that cover some of the important uncertainties when modeling the economic impacts of a comprehensive climate policy, there are still remaining uncertainties that could significantly affect the results.

*Annual net present value cost per household (discount rate = 5%) averaged over 2010-2050

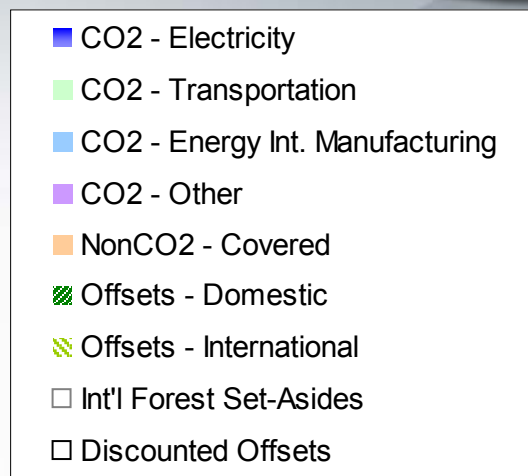
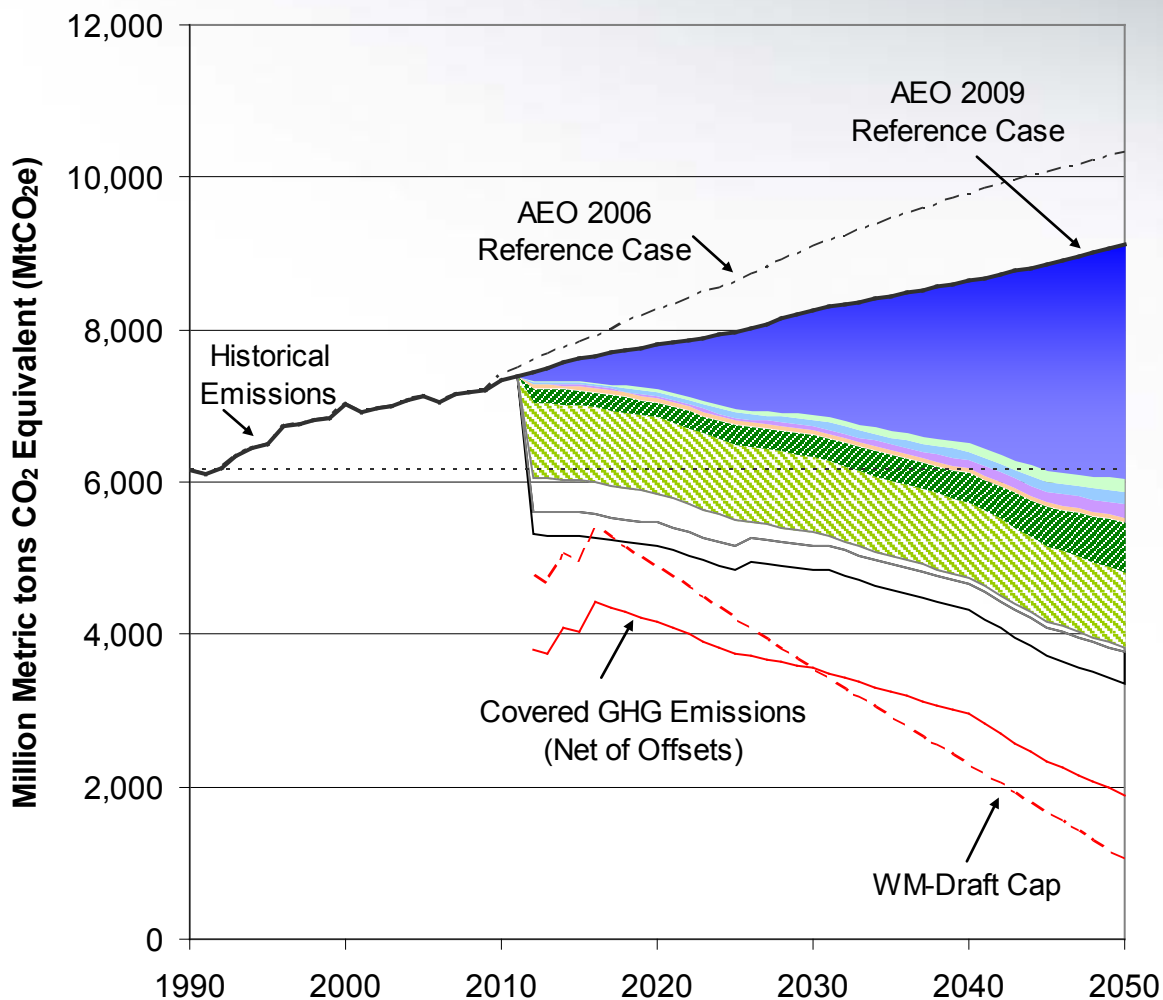
Primary Energy

WM-Draft Scenario Comparison (ADAGE)



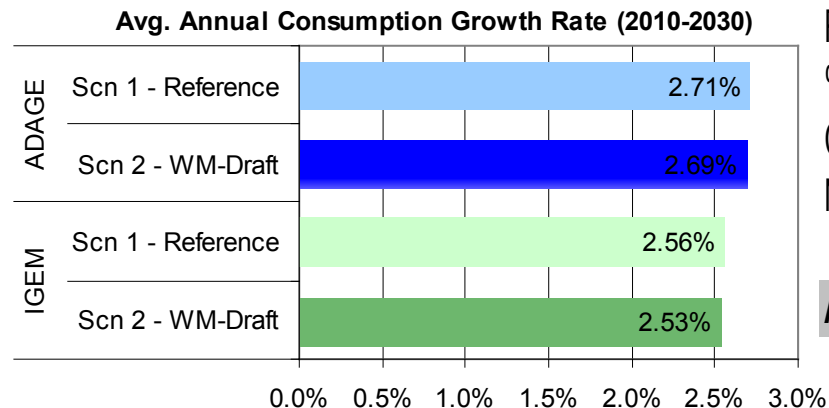
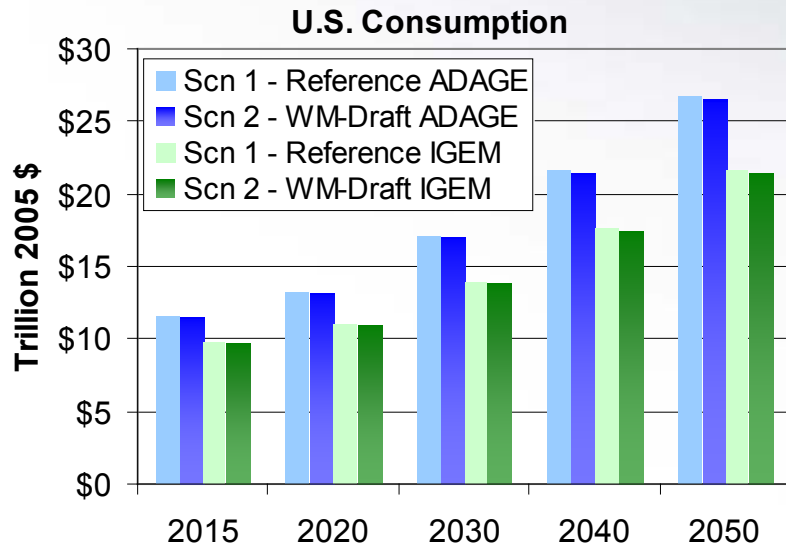
- In scenario with additional energy efficiency measures, primary energy use falls to 95 quadrillion Btu in 2015 and to 93 quadrillion Btu in 2020, and slowly rebounds to 2015 reference levels by 2050.
- In scenario with additional energy efficiency measures, low- or zero- carbon energy (including nuclear, renewables, and CCS plus increased energy efficiency and energy reductions) makes up 24% of primary energy by 2020, 34% by 2030, and 53% by 2050.

GHG Emissions & Sources of Abatement



- The updated reference case for this analysis is based on AEO 2009, and the old reference case from EPA's S. 2191 analysis was based on AEO 2006.
- Cumulative 2012-2050 GHG emissions are 14% (51 bmt) lower in the AEO 09 baseline compared to the AEO 06 baseline in ADAGE due to the inclusion of EISA, lower initial (2010) GDP (\$13.2 trillion in AEO 09 vs \$14.6 trillion in AEO 06), and a lower projected GDP growth rate (2.5% in AEO 09 vs 3.0% in AEO 06).
- WM-Draft allows a quantity of 2 billion metric tons CO₂e of offsets each year split evenly between domestic and international. The domestic limit is non-binding in this analysis.

U.S. Consumption



ADAGE

Ref. Consumption per Household
 % Change (Scn. 2)
 Consumption Loss per Household
 NPV Cost per HH (\$)

	2015	2020	2030	2040	2050
Ref. Consumption per Household	\$92,202	\$99,888	\$117,973	\$140,233	\$164,348
% Change (Scn. 2)	-0.11%	-0.19%	-0.37%	-0.67%	-0.78%
Consumption Loss per Household	-\$100	-\$192	-\$441	-\$936	-\$1,288
NPV Cost per HH (\$)	-\$75	-\$112	-\$158	-\$206	-\$174

Average Annual NPV cost per Household

-\$140

IGEM

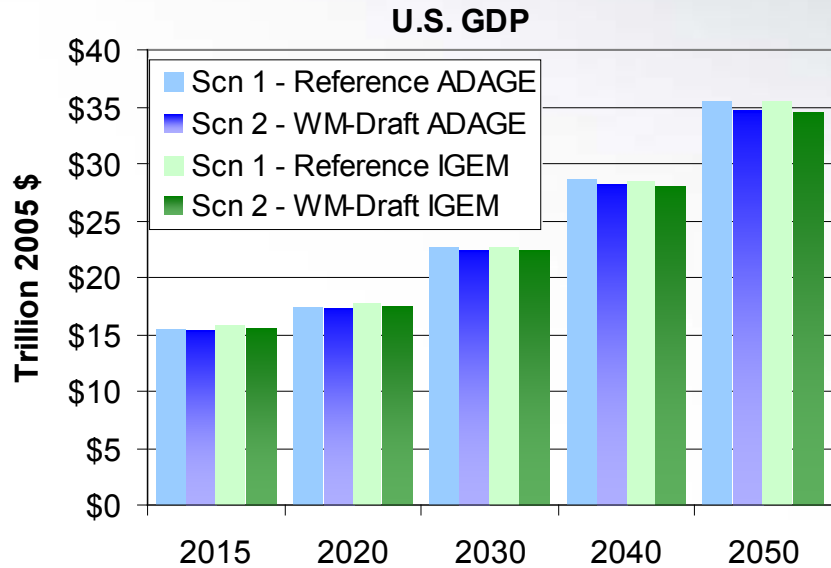
Ref. Consumption per Household
 % Change (Scn. 2)
 Consumption Loss per Household
 NPV Cost per HH

	2015	2020	2030	2040	2050
Ref. Consumption per Household	\$77,310	\$83,367	\$96,443	\$113,760	\$132,956
% Change (Scn. 2)	-0.02%	-0.17%	-0.39%	-0.62%	-0.85%
Consumption Loss per Household	-\$19	-\$137	-\$358	-\$647	-\$1,018
NPV Cost per HH	-\$14	-\$80	-\$128	-\$143	-\$138

Average Annual NPV cost per Household

-\$98

U.S. GDP



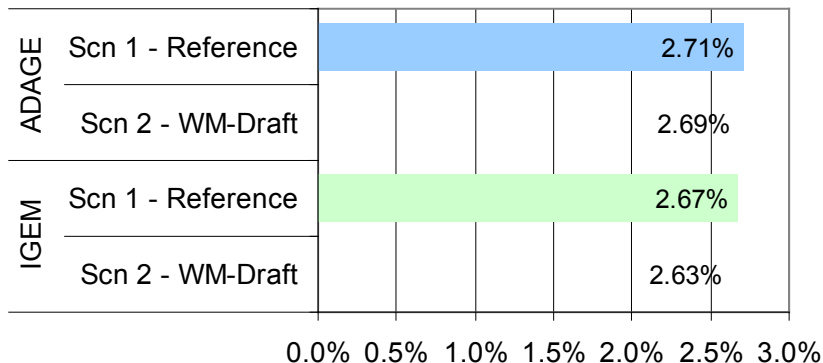
ADAGE

	2015	2020	2030	2040	2050
Reference	\$15.4	\$17.4	\$22.6	\$28.6	\$35.4
Scn 2 - WM-Draft	\$15.4	\$17.4	\$22.5	\$28.3	\$34.8
Absolute Change	-\$0.041	-\$0.045	-\$0.112	-\$0.268	-\$0.567
% Change	-0.27%	-0.26%	-0.50%	-0.94%	-1.60%

IGEM

	2015	2020	2030	2040	2050
Reference	\$15.7	\$17.7	\$22.7	\$28.5	\$35.4
Scn 2 - WM-Draft	\$15.6	\$17.5	\$22.4	\$28.0	\$34.6
Absolute Change	-\$0.095	-\$0.132	-\$0.268	-\$0.466	-\$0.790
% Change	-0.60%	-0.75%	-1.18%	-1.64%	-2.23%

Average Annual GDP Growth Rate (2010 - 2030)



- Other ways to frame these GDP reductions are as follows:
 - In the reference case, GDP in ADAGE is \$22.6 trillion in 2030. In “scenario 2 – WM-Draft” GDP reaches \$22.6 trillion approximately three months later than in the reference case.
 - In IGEM the reference case GDP is \$22.7 trillion in 2030. In “scenario 2 – WM-Draft” GDP reaches \$22.7 trillion six months later than in the reference case.
 - Under “scenario 2 - WM-Draft”, average annual GDP growth between 2010 and 2030 is approximately 2 basis points lower in ADAGE and 4 basis points lower in IGEM than in the reference scenario.

Contacts and Resources



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