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Climate Change Law Update


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Overview of Presentation

- Concepts/terminology
- Science
- International action
- U.S. action
 - Federal
 - Existing law: Clean Air Act (CAA)
 - Legislative Efforts
 - States
 - Regional initiatives


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Concepts/terminology

- CO₂e = carbon dioxide equivalent
 - Use of global warming potential (GWP) to develop comparable units
 - Carbon dioxide GWP = 1.0; methane GWP = 21
- Cap & Trade
 - Set declining cap on defined GHG sources and allow those sources to trade emissions allowances
 - Some in industry prefer this to command and control (e.g., individual smoke stack permits to emit), on belief it allows market to achieve lowest cost reductions



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Concepts/terminology

- Allowance
 - The right of a capped entity to emit 1 ton of CO₂e
 - At the end of each compliance period, capped entities must hold allowances (and/or offsets) sufficient to cover actual emissions
- Offsets
 - Validated emissions reductions by non-capped entities; key cost control mechanism
- Direct emissions (on-site combustion) vs. Indirect emissions (associated with energy purchased)
 - Double counting issues


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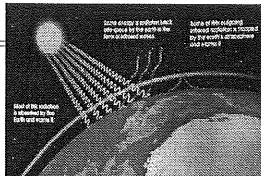
Science of Global Warming



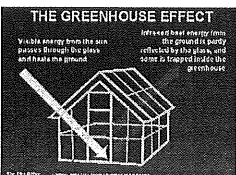

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Global Warming


- Rise in temperature
- Greenhouse Gases
- Greenhouse Effect



Some energy is reflected back to the Earth by greenhouse gases.
 Some of the outgoing infrared radiation is trapped by the Earth's atmosphere and re-emitted.



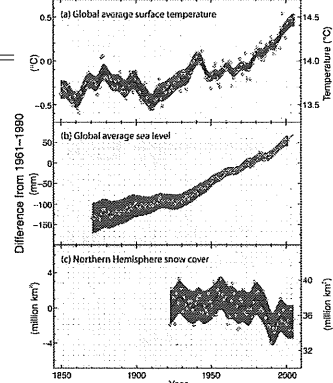
THE GREENHOUSE EFFECT
 Visible energy from the sun passes through the glass and heats the ground. Infrared heat energy from the ground is partly reflected by the glass and some is trapped inside the greenhouse.


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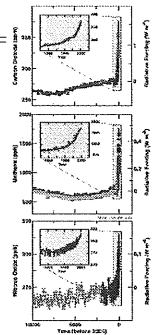
Proof Temps are Rising

- Intergovernmental Panel on Climate Change (IPCC), Fourth Assessment Report
- Increases in global average air and ocean temps, widespread melting of snow and ice and rising global average sea level

Changes in temperature, sea level and Northern Hemisphere snow cover



CHANGES IN GREENHOUSE GASES FROM ICE CORES AND MONITORING DATA



Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years

Skeptics

- Lead U.S. skeptic: Senator Inhofe of Oklahoma
- "Climategate" pushback
- Natural causes
 - Release of methane
 - Natural climate change cycle
 - Changes in Earth's orbit
 - Volcanic eruptions
 - Solar variability



International Efforts to Combat Climate Change



United Nations

- United Nations Framework Convention on Climate Change (UNFCCC)
 - Entered into force on March 21, 1994
 - 192 ratifying countries, including U.S.
 - Established goal of stabilizing GHG concentrations in the atmosphere at levels necessary to avoid climate change
 - No binding commitments

Kyoto Protocol

- Entered into force in February 2005
- 186 parties of convention have ratified it, U.S. being a notable exception
- Commitment: Emission reductions for the first budget period 2008-2012.
- Commitment applicable for Annex I Parties (37 industrialized countries): combined 5% reduction below 1990 levels during first budget period.



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Kyoto Protocol: Flexible Mechanisms

- **Emissions Trading among Annex I parties:**
 - Assigned Amount Units (AAUs) of GHGs can be traded between the Annex I Parties.
- **Joint Implementation (JI):**
 - Provides for Annex I Parties to implement projects that reduce emissions in other Annex I Parties, in return for Emission Reduction Units (ERUs).
- **Clean Development Mechanism (CDM):**
 - Provides for Parties to implement projects that reduce emissions in non-Annex I countries (developing countries) to produce Certified Emission Reductions (CERs) for use in Annex I countries.
 - Encourages emissions reductions in and investment/technological export to developing countries.



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European Union (EU) Emissions Trading Scheme (ETS)

- EU cap-and-trade program (CO₂ only)– helps EU meet Kyoto target; trade is in EU allowances (EUAs), but can also use CERs and ERUs to meet obligations (“linkage” to Kyoto Protocol)
- Phase I 2005-2007
 - *Trial* period, suffered from design flaws: over allocated, no banking of excess allowances into Phase II
- Phase II 2008-2012 (Kyoto first budget period):
 - Expanded coverage of facilities, banking allowed beyond 2012



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Copenhagen Accord

- UN Climate Change Conference Dec. 7-18, 2009 in Copenhagen
 - Goal to enact post-Kyoto agreement
- What came out of the conference?
 - The Copenhagen Accord
 - Non-binding commitment of Annex I parties to make reductions and fund mitigation and adaptation in developing countries
 - U.S. target of reducing emissions 14 to 17 % below 2005 levels by 2020
 - Largely seen as a failure to enact a binding continuation of Kyoto Protocol



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U.S. Efforts to Combat Climate Change



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Federal Action

- Existing authority under the Clean Air Act ²⁰⁰⁷
 - Massachusetts v. EPA
 - Endangerment Finding by EPA
 - Auto Rule
 - Tailoring Rule
 - EPA GHG reporting rule
- New proposed legislation
 - Waxman-Markey

CO₂ is a pollutant



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Massachusetts v. EPA (2007)

- Challenge by several states to EPA's refusal to regulate GHG emissions under Section 202(a) of CAA (applies to motor vehicle engines)
- Court ruled that GHG emissions are a "pollutant" under CAA
- Directed EPA to make "endangerment" determination under Section 108 of CAA
- Watershed moment for U.S. regulation of GHGs



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EPA Endangerment Finding

- Obama EPA issued final rule December 7, 2009
 - GHGs in the atmosphere = air pollution which endangers public health and welfare
 - GHGs from new motor vehicles "contribute" to this pollution
 - Opens door for command and control regulation of GHGs under CAA
 - Has been challenged in the D.C. Circuit Court of Appeals
 - US Chamber and many others filed petitions for review. Endangerment finding relies heavily on existing science, including report from Intergovernmental Panel on Climate Change (IPCC). Challengers attack includes use of "climategate" emails.



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Auto Rule: EPA and DOT

- Final rule issued April 1, 2010
- New fuel economy standards to be achieved by 2016:
 - 35.5 mpg fleetwide standard
- First ever GHG tailpipe standard (relies upon endangerment finding to issue this proposal):
 - 250 grams/mile CO₂ per vehicle by 2016
- Under EPA guidance, issuance of the Auto Rule automatically triggers regulation of GHGs, starting in January 2011, under PSD and Title V Programs
- Legal challenges are pending



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Tailoring Rule

- PSD and Title V thresholds (100 to 250 tpy)
 - Many small GHG sources would be regulated
- EPA "tailoring" rule (June 2010) increases *statutory* thresholds to 75,000 and 100,000 tons per year
 - Will impose Best Available Control Technology (BACT) on major sources of GHGs
 - Major sources will be subject to the rule starting January 2010, it is phased in thereafter
- EPA's reliance on "absurd consequences" doctrine leaves it vulnerable to legal challenge
 - Has been challenged by both industry and NGO's, as well as some states, such as Texas



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Other Administrative Actions

- SEC Guidance, January 2010
 - Provides guidance to public companies on disclosing the impact of climate legislation and regulation, as well as any physical impacts of climate change that could affect operations/results
- CEQ /NEPA Guidance, February 2010
 - Calls for federal agencies to analyze climate change issues for proposed federal actions that would cause emissions of 25,000 tons per year of GHGs
 - Does not apply at present to federal lands



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EPA GHG Reporting Rule

- Final Rule Issued Oct. 30, 2009
- GHGs covered:
 - carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs), perfluorocarbons (PFCs) and other defined fluorinated compounds



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EPA GHG Reporting Rule

- Who must report?
 - Certain *Facilities* that directly emit GHGs
 - Threshold for reporting - 25,000 metric tons CO₂e
 - Certain *Suppliers* of Fuel and Industrial GHGs
 - A producer, importer, exporter of a fossil fuel or an industrial greenhouse gas
- First reports due by 3/31/2011 for 2010 emissions



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Oil and Gas GHG Reporting

- Upstream *suppliers* will report emissions that would result from the downstream combustion of their products; covered *suppliers*:
 - Petroleum product refiners, importers and exporters
 - Natural Gas Liquids Fractionators
 - Local Distribution Companies



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Covered Petroleum and Gas Facilities (still a draft rule)

- *Facilities* that exceed 25,000 metric tons CO₂ equivalent per year will report *direct emissions* from combustion and fugitive/vented emissions from:
 - Offshore petroleum and natural gas production
 - Onshore petroleum and natural gas production
 - EPA recommends *basin* level reporting, also considering field or individual well pad approaches, took comment on this issue
 - Facility = all production wells in the *basin* under common ownership or control
 - Onshore natural gas processing plants
 - Onshore natural gas transmission compression
 - Underground natural gas storage
 - Liquefied natural gas (LNG) storage
 - LNG import and export operations
 - Natural gas distribution: pipelines and metering and regulation stations used in delivery to end users, not interstate or intrastate pipelines



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Waxman-Markey Bill

- The American Clean Energy and Security Act (ACES)
- Passed by the U.S. House on June 26, 2009
- Stalled in the Senate



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ACES Is Complex, with Multiple Programs

- Title I: Clean Energy
- Title II: Energy Efficiency
- Title III: Reducing Global Warming Pollution (cap-and-trade program)
- Title IV: Transitioning to a Clean Energy Economy
- Title V: Agricultural and Forestry Related Offsets



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Title I: Clean Energy

- RPS: requires electric utilities to meet 20% of their electricity demand through renewable energy sources and energy efficiency by 2020; sets federal floor, states can be more aggressive
- Investments in clean energy and energy efficiency: CCS, state renewable energy and efficiency programs, electric vehicles, R&D
- Enhanced transmission planning and smart grid technology
- Clean Energy Deployment Administration: will support private investment in clean energy, including nuclear



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Title III: Key Elements

- **Preemption**
 - Places five year hold on state/regional cap-and-trade programs (but federal program will allow exchange of regional system allowances)
- **Oversight**
 - FERC: cash market in allowances and offsets
 - CFTC: derivatives markets

Title III: Other Elements

- **Offsets and Linkage**
 - Up to 2 billion tons of offsets can be used annually, half of which can come from international sources (such as CDM offsets)

Title III: Estimated Costs

- Average household cost estimates (hotly contested by industry and business groups):
 - \$80 to \$111/year (EPA)
 - \$175/year (Congressional Budget Office)
- Opposing cost estimates
 - Average family's annual energy bill will increase by \$1,241 (Heritage Foundation)

U.S. Senate?

- Cap and Trade appears to be dead
- Recent action
 - Efforts to stop EPA through legislation that would
 - Delay EPA's regulations (Rockefeller's approach)
 - Veto Endangerment Finding (Murkowski's approach)
 - Exclude GHGs from the Clean Air Act
 - Bingaman continues to push for National Renewable Electricity Standard
 - 15 % renewable electricity by 2021
 - Approximately ¼ of the 15% could come from energy efficiency programs

Key Tort / Climate Cases

- *Connecticut v. American Electric Power*
 - Sept. 2009: 2nd Circuit holds that public nuisance claims by states, city and land trust to impose GHG emissions limitations on power plants could proceed
- *Village of Kivalina v. ExxonMobil Corp.*
 - Sept. 2009 California federal district court dismissed damages case by native village in Alaska on standing and political question grounds, on appeal to 9th Circuit

Key Tort / Climate Cases

- *Comer v. Murphy Oil, USA*
 - Oct. 2009: three judge panel of 5th Circuit held that nuisance claims for alleged increase in damage from Hurricane Katrina against energy, fossil fuel and chemical companies could proceed
 - But, full panel of court reversed itself on technicality

State Action

- Through a combination of legislative and executive action, the states continue to roll out strategies to reduce GHG emissions
- Wide-ranging policies are being advanced: efficiency, renewable portfolio standards, GHG cap-and-trade systems, tailpipe standards, green building, etc....

California: AB-32

- Global Warming Solutions Act of 2006
 - Requires California Air Resources Board (CARB) to implement several actions, including:
 - Establish GHG reporting requirements: first reports were due June 1, 2009
 - Scope GHG reduction strategies, including:
 - state-wide cap-and-trade, with a January 1, 2011 deadline for implementing regulations and January 1, 2012 to start cap-and-trade
 - Relying primarily upon participation in WCI cap-and-trade program

California: AB-32

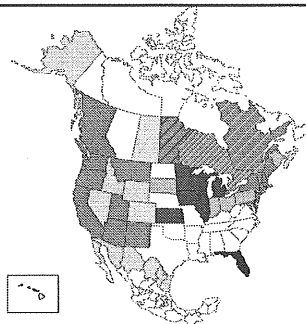
- Low Carbon Fuel Standard: impact upon suppliers into the California market
 - Fuel producers must reduce carbon intensity of fuels each year from 2011 to 2020 (goal 10% below 2010 intensity levels by 2020)
 - Developing rules for Lifecycle Emissions from “well to tank” and “tank to wheel” for various fuels, including: gasoline and diesel refined in California, Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG)
 - These rules reach back upstream to out of state suppliers and look at total GHG emissions (direct and indirect) associated with production, processing and transport to California

California: AB-32

- Referendum to delay implementation of AB-32
 - Proposition 23 aims to prohibit AB-32 implementation until California’s unemployment rate drops below 5.5 % for four consecutive quarters. That has occurred three times since 1976.
 - Statewide vote November 2, 2010
- California gubernatorial election implications
 - AB-32 permits the governor to suspend the act for a year if it threatens “significant economic harm.” Rep. candidate Meg Whitman has said she will suspend AB-32 if she is elected governor in November.

U.S. Regional Initiatives

- **The Western Climate Initiative (WCI)**
 - Western States and Canadian Provinces: multi-sector
 - Most ambitious, with international participation
- **The Regional Greenhouse Gas Initiative (RGGI)**
 - Mid-Atlantic States: power plants only at present
 - Most advanced regional initiative, allocation auctions have been ongoing, cap-and-trade started Jan. 1, 2009
- **The Midwestern Greenhouse Gas Reduction Accord (MGGRA)**
 - Midwestern States: multi-sector
 - April 2010: released model rule



■ Regional Greenhouse Gas Initiative (RGGI)
 ■ RGGI Observer
 ■ Midwestern Regional Greenhouse Gas Reduction Accord
 ■ MGGRA Observer
 ■ Western Climate Initiative
 ■ Western Climate Initiative Observer
 ■ Individual State Cap-and-Trade Programs

Western Climate Initiative (WCI)

- WCI Created February, 2007
- Now Includes seven Western States, four Canadian Provinces
 - Thirteen Observer Jurisdictions in the U.S., Canada and Mexico
- Goal – 15% reduction below 2005 levels by 2020



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WCI - Partners

- Arizona
- British Columbia
- California
- Manitoba
- Montana
- New Mexico
- Ontario
- Oregon
- Quebec
- Utah
- Washington



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WCI: Key Elements

- January 1, 2012 target to begin cap-and-trade
- Thresholds
 - to be capped: 25,000 metric tons CO₂e per year
 - to trigger reporting: 10,000 metric tons CO₂e per year
- Phase 1 (2012 to 2015) coverage
 - Electricity generation
 - Industrial/commercial combustion
 - Industrial process emissions (including oil and gas sector)



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WCI: Key Elements

- Phase 2 (2015-2018) coverage:
 - RCI combustion of below threshold facilities, regulated upstream such as at LDC
 - Transportation fuels, regulated upstream such as at refinery
- GHG Caps to be Set 2010
 - Annual caps/budgets for states/provinces
 - Caps based on "best estimates" of 2012 source emissions, updated every 3 years
 - 3-year compliance periods
 - Emissions allowances ratchet down on straight line



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WCI – Implementation by States/Provinces

- WCI is a Governors' agreement; each partner must have its own legislative authority to join the cap and trade system
- Only California, British Columbia, Ontario, and Quebec have existing regulations to move forward on 2012 deadline
 - California ballot initiative to stop AB-32, if successful, could jeopardize the entire WCI effort
 - New Mexico and Manitoba are working toward the 2012 deadline
 - Arizona has issued an executive order stating that it will not participate in the cap and trade program
 - Montana, Oregon, Utah, and Washington lack political support to implement by 2012



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The Problem of Leakage

- Any Non-Global System Risks Leakage of Emissions and Production to Non-Capped Areas
- WCI's Eastern Leakage Study
 - Confirmed that without a linked national system, emissions in eastern grid partners will leak to surrounding jurisdictions
 - Gives WCI, RGGI and Midwest Accord argument for linking their systems



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Price of Compliance Allowances

- European Union
 - EUAs: \$18.69 per metric ton of CO₂
- RGGI
 - September 10, 2010: \$1.86 per metric ton of CO₂; bids on 75% of the available credits
 - High—March 18, 2009: \$3.51 per metric ton of CO₂; number of bids equaled 2.5 times the amount of available credits



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Price of Voluntary Market Offsets

- For high volume transactions (>50,000 tonnes):
 - Gold Standard: \$12 - \$15
 - Climate Action Reserve: \$5 - \$9
 - Voluntary Carbon Standard: \$4 - \$7
 - American Carbon Registry or Canadian Standards Association Clean Projects: \$1.50 - \$5



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Price estimates for proposed programs

- Waxman-Markey Bill
 - January 2010 EPA estimate – in 2005 dollars
 - 2013: \$9-15 per metric ton of CO₂
 - 2020: \$ 14-23 per metric ton of CO₂
- WCI
 - 2020: target \$33 per metric ton of CO₂; economic modeling estimates actual price could be between \$13 and \$50 per ton



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Key Points for Petroleum Accountants

- New Costs are Being Added to Producers and Suppliers at Various Points in the Production/Supply Chain
- Environmental Departments Are Tracking Emissions, large sources must do so, many small sources are voluntarily doing so
- Cap and Trade was Getting The Attention, But Costs are Inherent in Reporting and Other Programs (such as California Low Carbon Fuel standard)



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