



**What You Need To Know About Greenhouse
Gas Regulation
Climate Change Law: Mid-Year Review**

**Tuesday, June 16th, 2009
7:30 – 10:30 a.m.**

Venable's Washington, DC Office
575 7th Street, N.W.
Washington, DC



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- B. Report of the Trade and Environment Policy Advisory Committee Regarding GHG Issues

Endangerment Finding

- C. Overview of EPA's Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under the Clean Air Act
- D. Frequently Asked Questions on the Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases
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- G. EPA Fact Sheet: EPA Proposes First National Reporting on Greenhouse Gas Emissions
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Presentations

Climate Change Legislation The Good, the All-encompassing, and the Ugly

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Brief history

- Senate rejected Kyoto 96-0
- Senate tried first to pass a bill last year
- House is trying first to pass a bill this year



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Crystal Ball

- Possibility of passage
- Timing
 - House
 - Aiming for early summer
 - Senate
 - No Senate bill yet
 - Sen. Boxer wants to move "this fall"
 - Senate won't start with the House bill
 - Copenhagen (Dec. 8-17)
 - Next year – election year



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But

- The proposed legislative approaches in the last two years have been amazingly expansive
- If passed, the law would permeate most aspects of daily life and business
- The nature of the problem requires a cross-cutting solution
- No interest groups have yet been able to get out
- Pieces could be broken off as standalone laws
- Failure will set the stage for the next attempt

Bottom Line

- Stay involved
or
- Get involved
- Now

Major issues and the Waxman - Markey approach

Major issues

- Comprehensive regulatory approaches
 - Carbon tax
 - Cap & trade
 - Regulatory mandate (performance standards)
- Incremental regulatory approaches
 - Renewable electricity or fuels standards
 - Carbon capture and sequestration rules
 - Energy efficiency standards
 - Deforestation reduction efforts
 - Low-carbon fuels standard
 - Plug-in vehicle infrastructure
 - Vehicle efficiency standards
 - Tax credits
- Offsets
- Allowances
- Preemption
- Border measures
- EPA remaining authority
- Exporting clean technology
- Aid to developing countries

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Waxman-Markey Approach – Belt and Suspenders. And Another Belt

- Cap & trade
- New source performance standards
- Domestic rebates, not border penalties
- Largely free allowances
- Renewable electricity
- Carbon capture and sequestration
- Energy efficiency
- Deforestation reduction efforts
- Vehicle efficiency standards
- Plug-in vehicle infrastructure ; Smart Grid / Energy Star compatibility
- Green jobs
- Consumer energy tax credit
- Exporting clean technology

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A Sampling of Questions

- Cap & trade
 - Who participates, reduction targets, banking?
- Offsets
 - What, how many, where, who validates?
- Renewable energy
 - What, who, banking?
- Border measures
 - Yes or no, how? (Slippery slope)
- Allowances

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Allowances

- **Electricity consumers** – 43.75% for 2012-13, 38.89% for 2014-15, 35% for 2016-25, 28% for 2026, 21% for 2027, 14% for 2028; 7% for 2029, then phased out.
- **Natural gas consumers** – 9% for 2016-25, 7.2% for 2026, 5.4% for 2027, 3.6% for 2028 and 1.8% for 2029
- **Home heating oil and propane consumers** – 1.875% for 2012-13, 1.67% for 2014-15, 1.5% for 2016-25, 1.2% for 2026, 0.9% for 2027, 0.6% for 2028 and 0.3% for 2029.
- **Low income consumers** – 15% auctioned annually
- **Trade-vulnerable industries** – 2% for 2012-13, 15% for 2015 and declining thereafter.
- **Deployment of CCS technology** – 2% for 2014-17 and 5% for 2018-2050.
- **Investment in energy efficiency and renewable energy** – 0.5% for 2012-15 and declining thereafter to 3.55% for 2022-25; Also 0.5% for 2012-50 for building codes
- **Clean Energy Innovation Centers** – 1% for 2012-2050
- **Investment in clean vehicle technology** – 3% for 2012-17 and 1% for 2018-25
- **Domestic fuel production** – 2% to domestic refiners for 2014-26; Additionally, auction 0.5% for 2012-22 and 1% for 2022-50.
- **Domestic adaptation** – 0.9% for 2012-21, 1.9% for 2022-26 and then 3.9%. Auction 0.1% more annually.
- **Natural resource adaptation** – Auction 1% for 2012-21, 2% for 2022-26 and then 4%.
- **International adaptation** – 1% for 2012-21, 2% for 2022-26; then 4%
- **International clean technology deployment** – 1% for 2012-21; 2% for 2022-26; then 4%

The Details are Left to The Executive Agencies

- EPA - Carbon capture and sequestration, offset projects, emission allowance rebates, and more
- DOE - State Energy and Environment Development Accounts and updating building codes for energy efficiency
- DOE and EPA to assess the potential to develop Smart Grid / Energy Star technologies integration
- FERC - National grid planning and carbon market assurance
- Commodities Futures Trading Commission (CFTC) – Authority over energy derivative transactions
- NOAA - creation of a National Climate Service to develop adaptation information

For a full draft of the E&C markup of the draft bill, along with a committee summary, rationale, minority viewpoints and more, please see http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_reports&docid=f:hr137.111.pdf

Endangerment and Greenhouse Gases What Does it Mean?

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Proposed Endangerment Finding

- Narrowly: A "proposal" limited to emissions from new vehicles under Section 202(a) CAA
 - Passenger cars; Light-duty trucks; Motorcycles; Buses; Medium/heavy-duty trucks
 - Responds to specific issue raised in petition that lead to Massachusetts S. Ct. opinion
- Broadly: A statement of policy and expert position
 - Potential for use under other laws & standards
 - Bellwether of Administration position on greenhouse gases



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EPA's Endangerment Finding

- Timing
 - Comment period ends June 23, 2009
 - At least several months, maybe more, before any final endangerment decision
- Steps that follow finding of endangerment
 - EPA proposes standards for six pollutants as group or individually from vehicles
 - May take months or more to propose, then comment and months or more to final
 - Final standards include schedule for vehicle manufacturers to implement (no less than 3 model years out)
- Multi-year process before new vehicles meeting new standards



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Broader Implications

- Weight of factual conclusions re: greenhouse gases and public health
 - Technical Support Document
 - Summary of pre-existing science reports
- Other legal proceedings
 - NEPA
 - Power/energy related cases
 - Common law tort claims
 - Impacts on species/habitat change
 - Standing to bring claims under other laws



What Did EPA Say?

- Six greenhouse gases, in combination,
 - carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.
 - Note: only 4 of the 6 gases are emitted by 202(a) vehicles
 - EPA can later regulate the group or the individual gases within the group, in its discretion
- Are contributing to air pollution which **is endangering public health** and welfare under section 202(a) of the Clean Air Act.



Causation, Nexus: Reasonable Certainty of Climate Change

- "The effects of climate change observed to date and projected to occur in the future—including but not limited to the increased likelihood of more frequent and intense heat waves, more wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, harm to agriculture, and harm to wildlife and ecosystems—are effects on public health and welfare within the meaning of the Clean Air Act." 74 Fed. Reg. 18886 (April 24, 2009).



Linkage of Greenhouse Gases to Public Health impacts

- Issue: "public health" or "welfare" or both??
- EPA says both, and "weighing the evidence collectively and determining that as a whole it clearly indicates that the air pollution at issue endangers public health and welfare now and in the future." 74 Fed Reg. 18898
 - Little discussion of when public health impacted
 - Recitations concern future GG consequences
 - Technical Support Document
 - Compilation of evidence



EPA's Public Health Impacts

- Ambient (breathable) concentrations of GGs pose no risk to public health
- Climate change consequences + health risks to vulnerable populations
 - temperature rise, excess heat/dry forest fires; excess rain/flooding; extreme events; sea level rise
 - "The populations most sensitive to hot temperatures are older adults, the chronically sick, the very young, city-dwellers, those taking medications that disrupt thermoregulation, the mentally ill, those lacking access to air conditioning, those working or playing outdoors, and the socially isolated."
 - "There will likely be an increase in the spread of several food and water-borne pathogens (e.g., Salmonella, Vibrio) among susceptible populations"; changes in dispersion of allergens



Who can sue?

- Lower courts varied; most denied standing on one basis or another
- Massachusetts – S. Ct. 2007
 - Found injury in fact – potential sea level rise over next century; risk of harm is real but remote in time
 - Found causation – some small increment related to regulation of auto emissions under 202(a)
 - Found remedy nexus – need not fully solve problem but may reduce or slow/& help solve problem
 - **Special case for sovereign State??**

Since Supreme Court

- Center for Biological Diversity v. U.S. DOI (DC Cir 2009) – no standing
 - No injury in fact: "Petitioners can only aver that any significant adverse effects of climate change "may" occur at some point in the future. This does not amount to the actual, imminent, or "certainly impending" injury required to establish standing."
 - No particularized injury: "Second, climate change is a harm that is shared by humanity at large, and the redress that Petitioners seek—to prevent an increase in global temperature—is not focused any more on these petitioners than it is on the remainder of the world's population."
 - Also: injury "too attenuated", between government action and alleged climate change consequences
- May not be bellwether decision; highly factual

Areas of past/pending/future Litigation

- NEPA
 - Petition to CEQ pending; prior CEQ memo
 - Many agency challenges
- Power/energy related cases
 - State: PSC, permitting
 - Federal: FERC, permitting
- Common Law
 - *proximate cause standard*
 - Tort: Injunctive actions, damages
- Endangered Species

Does Endangerment Proposal Matter?

- No New Science – compilation only
 - But -- imprimatur of "expert agency" adds some weight
- Specific "public health" conclusions plus weight of expert agency constitute new news
- Similar petitions pending for other air pollution sources, largely indistinguishable
- Ancillary impacts likely most significant

Crystal Ball

- Absent Climate Change legislation
 - EPA will proceed with “next steps” on Endangerment Finding
 - Proposed standards
 - Similar findings will be compelled for other Clean Air Act sources
 - Endangerment Finding opens door to regulatory action under existing Clean Air Act
- Science behind Endangerment Finding may open door to regulatory action



Greenhouse Gas Mid-Year Update: GHG Reporting Rule

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Mandatory Greenhouse Gas Reporting – It's On The Way

- Greenhouse gas (“GHG”) reporting regulations mandated by FY08 Omnibus Appropriations Act
 - Provided funding to EPA to “require mandatory reporting requirements of greenhouse gas emissions above appropriate thresholds in all sectors of the economy.”
- Proposal issued on April 10, 2009 (68 Fed. Reg. 16448); comment period ended June 9. A final rule is expected in time to allow reporting for 2010 GHG emissions.





Mandatory Greenhouse Gas Reporting – It's On The Way

- Will be first mandatory federal rule for covered facilities to report the upstream production and downstream emissions of specific GHGs
 - carbon dioxide (CO₂)
 - methane (CH₄)
 - nitrous oxide (N₂O)
 - sulfur hexafluoride (SF₆)
 - hydrofluorocarbons (HFCs)
 - perfluorochemicals (PFCs)
 - other hydrofluorinated ethers (HFEs)

- Expressed in metric tons of carbon dioxide equivalent (CO₂e).

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Objectives of a GHG Reporting Rule

- Provide comprehensive and accurate data to better inform future climate change policies and support future federal action
 - research/economic initiatives
 - emission standards
 - carbon tax
 - cap-and-trade

- Voluntary GHG reporting/reduction programs (e.g., Climate Leaders) and mandatory state/regional GHG emission reporting/reduction programs (e.g., RGGI) were reviewed to avoid overlap and duplication

- *This is solely a reporting program; no regulation of GHG emissions or requirement for reductions*

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Applicability: Will I be covered?

- Changes possible in final rule, but coverage will be broad
 - 2008 Appropriations Act speaks to "all sectors of the economy"

- Reporting would generally be at the facility level
 - Limited exceptions (e.g., fuel importers, vehicle and engine manufacturers would report at the corporate level)

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Applicability: Will I be covered?

- The rule is intended to cover the range of industrial sectors responsible for approximately 90% of U.S. GHG emissions
 - Reporting threshold is generally 25,000 metric tons of CO₂e (carbon dioxide equivalent) per facility on an annual basis
- **Once in, always in**, even if emissions fall below the 25,000 metric ton threshold.



Specified Categories

From www.epa.gov

Table 1. If the facility contains any of the source categories listed in this table in any calendar year starting in 2010, the facility would be required to report emissions from all source categories at the facility for which calculation methodologies are provided in any subpart of the proposed rule.

<p>Adipic Acid Production</p> <p>Aluminum Production</p> <p>Ammonia Manufacturing</p> <p>Cement Production</p> <p>Electric Power Systems that include electrical equipment with a total nameplate capacity that exceeds 17,320 pounds (7,838 kilograms) of SF₆ or PFCs.</p> <p>Electricity - Generating Facilities subject to the Acid Rain Program, or that emit 25,000 metric tons of CO₂e or more per calendar year beginning in 2010.</p> <p>Electronics Manufacturing Facilities with an annual production capacity that exceeds:</p> <p>(A) Semiconductors: 1,080 square meters (m²) silicon.</p> <p>(B) Microelectromechanical system: 1,020 m².</p> <p>(C) Liquid crystal display (LCD): 235,700 m² LCD.</p> <p>HCFC-22 Production</p> <p>HCFC-23 Destruction Processes that are not located at HCFC-22 production facility and that destroy more than 2.15 metric tons of HCFC-23 per year.</p>	<p>Lime Manufacturing</p> <p>Manure Management Systems that emit, in aggregate, CH₄ and N₂O in amounts equivalent to 25,000 metric tons of CO₂e per year or more.</p> <p>Landfills that generate CH₄ in amounts equivalent to 25,000 metric tons of CO₂e per year or more.</p> <p>Nitric Acid Production</p> <p>Petrochemical Production</p> <p>Petroleum Refineries</p> <p>Phosphoric Acid Production</p> <p>Silicon Carbide Production</p> <p>Soda Ash Production</p> <p>Titanium Dioxide Production</p> <p>Underground Coal Mines that are subject to quarterly or more frequent sampling of ventilation systems by the Mine Safety & Health Administration (MSHA).</p>
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Categories with Threshold

From www.epa.gov

Table 2. If the facility does not contain any of the source categories listed in Table 1, then the facility would be required to determine whether it emits 25,000 metric tons of carbon dioxide equivalent (CO₂e) or more in combined emissions from stationary fuel combustion, miscellaneous carbonate use, and the source categories listed in this table in any calendar year starting in 2010. If so, the facility would be required to report emissions from all source categories at the facility for which calculation methodologies are provided in any subpart of the proposed rule.

<p>Electricity Generation</p> <p>Electronics - Photovoltaic Manufacturing</p> <p>Ethanol Production</p> <p>Ferroalloy Production</p> <p>Fluorinated Greenhouse Gas Production</p> <p>Food Processing</p> <p>Glass Production</p> <p>Hydrogen Production</p>	<p>Industrial Landfills</p> <p>Iron and Steel Production</p> <p>Lead Production</p> <p>Magnesium Production</p> <p>Oil and Natural Gas Systems</p> <p>Pulp and Paper Manufacturing</p> <p>Industrial Wastewater</p> <p>Zinc Production</p>
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Stationary Combustion Sources

From www.epa.gov

Table 3. If the facility does not contain any of the source categories in Tables 1 or 2, then the facility would be required to determine if the facility emits 25,000 metric tons of CO₂e from stationary combustion in any calendar year starting in 2010. If so, the facility would report emissions from stationary fuel combustion devices only.

<p>Boilers</p> <p>Stationary Engines</p> <p>Process Heaters</p> <p>Combustion Turbines</p> <p>Other Fuel Combustion Equipment</p>
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Note: If the maximum rated heat input capacity for all stationary fuel combustion equipment is less than 30 million British thermal units (Btu) per hour, then the facility is presumed to emit less than 25,000 metric tons of CO₂e and the facility does not have to calculate or report emissions.

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Suppliers of Fossil Fuels

From www.epa.gov

Table 4. If the facility is a supplier of fossil fuels listed in this table in any calendar year starting in 2010, the facility would report the volume of fuel that is placed into the economy each year and the emissions associated with the complete oxidation of the fuel. Suppliers include producers, importers, and exporters.

<p>Coal</p> <p>Coal-based Liquid Fuels</p> <p>Natural Gas</p> <p>Natural Gas Liquids</p> <p>Petroleum Products</p>

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Suppliers of Industrial GHGs

From www.epa.gov

Table 5. If the facility is a supplier of industrial GHGs listed in this table in any calendar year starting in 2010, the facility would report the annual volume of product that is placed into the economy and the emissions associated with the complete release of the product. Suppliers include all producers and importers or exporters supplying product that is equivalent to 25,000 metric tons of CO₂e or more when released.

<p>Fluorinated Gases</p> <p>Nitrous Oxide</p> <p>Carbon Dioxide</p>
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Manufacturers of Mobile Sources & Engines

- Would expand existing emission reporting requirements to include CO₂ (already covered under most vehicle/engine certification programs), CH₄, N₂O and HFCs for new vehicles and engines
- Annual reporting
- Mobile sources not covered (though seeking comment on applying to fleets)



Monitoring Methods to Calculate GHG Emissions/Production

- Combination of Direct Emission Measurements (CEMS) & facility-specific calculations
 - CEMS for facilities already doing this (e.g., CO₂ emissions from EGUs in ARP)
 - Facility-specific calculation methods – e.g., mass balance, measurement of fuel inputs
 - supplier source categories – Reporting of production, import, and export data



Frequency, Timing, and Content of Reports

- Reporting on annual basis
 - Note: electric utilities with ARP units that already report CO₂ emissions on a quarterly basis would continue to do so, in addition to providing the annual GHG report
- GHG monitoring for existing facilities is slated to begin on January 1, 2010. The first report would be provided to EPA on March 31, 2011 and would cover calendar year 2010.



Frequency, Timing, and Content of Reports

- Report would include annual GHG emissions in total tons CO₂e, and separately present annual mass emissions of each individual GHG for each source category at the facility
 - No de minimis levels for covered sources
- Remember – once in, always in



Verification & Implementation

- Requires self-certification that GHG reports are truthful, accurate and complete
- EPA would review and verify to ensure reports are complete, accurate and meeting reporting requirements
- No state delegation contemplated at this time; EPA would implement and enforce final GHG reporting rule



Enforcement

- Failure to report GHG emissions
- Failure to collect requisite data to report GHG emissions
- Failure to test as required under Rule
- Failure to estimate emissions per specified methods
- Failure to keep records/falsification of records
- EPA can compel compliance and assess administrative/civil penalties of up to \$32,500 per day



For more information and copies of the tables
presented here, go to:

www.epa.gov/climatechange/index.html



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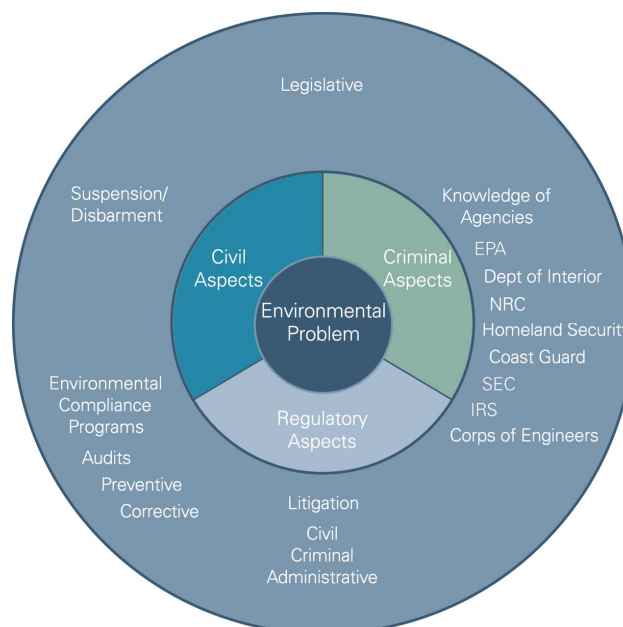
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Environmental problems take many forms.

- Your water discharge permit is up for renewal and is being challenged by an environmental group.
- One of your employees receives a visit at home from EPA's Criminal Investigation Division investigating falsification of discharge-monitoring reports.
- Your board of directors insists that the company reduce energy costs by at least 15 percent as part of a comprehensive sustainability policy.
- Your new plant must incorporate "environmental site design" in its storm-water management practices.
- A property you're acquiring is contaminated, and your lender insists that you enroll the property in a Voluntary Cleanup Program.
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Clean Air Act

Clean Water Act

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

Emergency Planning and Community Right-to-Know Act (EPCRA)

Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA)

National Environmental Policy Act (NEPA)

Resource Conservation and Recovery Act (RCRA)

Toxic Substances Control Act (TSCA)

PUBLICATIONS

The Environmental Crimes Deskbook with the Environmental Law Institute

Environmental Criminal Liability in the United States: A Handbook for the Marine Industry

The Wetlands Deskbook with the Environmental Law Institute

The Knock at the Door: Preparing for and Responding to a Criminal Investigation with the American Chemistry Council

LITIGATION

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We have represented corporations and individuals in proceedings before federal, state and administrative tribunals, including matters involving air, water, hazardous waste and natural resource claims. We have particular expertise in defending claims brought under the citizen suit provisions of federal environmental statutes. We have also acted as plaintiff's counsel in disputes over water supply and wastewater capacity.

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SUSTAINABILITY

The “Green” Wave.

Sustainable development practices are here to stay. Our lawyers are intimately familiar with:

- Climate Change
- Brownfields
- Voluntary Cleanup Programs
- Environmental Site Design
- Cap and Trade Programs
- Storm Water Management
- Erosion and Sediment Control Practices
- Forest Conservation Practices

Understanding these requirements—including the business values and marketing opportunities—is essential in today’s world. We work with emerging programs like carbon capture and trading, as well as traditional programs involving water and sewer capacity planning, to assist clients in navigating changing legal requirements.

As resources become more scarce, Venable’s knowledge of nutrient trading, water- and sewerage-capacity planning and moratoria will help clients successfully navigate the numerous environmental restraints that will arise in property development.

Environmental Issues in Real Estate and Commercial Transactions.

The sale or acquisition of property and other assets presents the potential for significant environmental liability. These problems can be avoided with careful and timely planning.

Developing and executing appropriate environmental due diligence is critical to managing and/or avoiding post-closing consequences. Properly drafted environmental representations and warranties are just the beginning. Selection of consultants, preparation of draft-access agreements, procurement of insurance to address remediation costs and structuring the transaction to avoid and/or minimize environmental liabilities are but a few of the tools our lawyers have utilized to manage and/or eliminate potential environmental consequences.

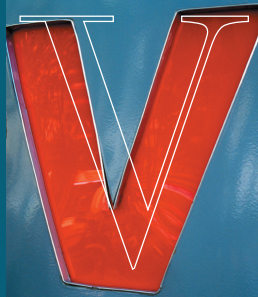
ENVIRONMENTAL LEGISLATIVE, RULEMAKING AND POLICY DEVELOPMENT

Venable’s environmental team also represents clients in all aspects of federal legislation, rulemakings and policy development under the nation’s major environmental statutes. Our attorneys are commonly involved in traditional notice and comment rulemaking initiatives, as well as the more nuanced practice of representing our clients before key federal agencies and congressional staff. We represent clients before such agencies as the Environmental Protection Agency (EPA), Department of the Interior (DOI), Department of Transportation (DOT), Department of Homeland Security (DHS) and Office of Management and Budget (OMB), as well as the congressional committees with jurisdiction over energy and environmental. When necessary, we engage in litigation involving challenges to federal regulations of importance to our clients.

For example, we represent one of the nation’s leading electric utility trade associations in virtually all matters involving the federal regulation of utility solid and hazardous wastes, hazardous materials and chemicals. We also represent a variety of clients in the wood products industry before federal and state agencies regarding the regulation of formaldehyde.

Through our extensive experience as former government enforcement officials and regulators—and decades of experience in private practice focused on environmental issues—we are well equipped to help you deal with compliance issues and civil litigation and to provide vigorous defense in criminal matters.

How can we help you? To find out, please contact us at 1.888.VENABLE or www.Venable.com.



VENABLE SNAPSHOT

Nearly 600 lawyers nationally

 Top 100 nationally
American Lawyer 2008

 Top 10 in Washington, DC
Washington Business Journal 2008

 Counsel to 40 of the Fortune 100

PRACTICE FOCUS

- Advertising and marketing claims
- Alternative energy
- Business transactions
- Carbon regulation
- Design and construction transactions
- Environmental trading markets
- Financing
- Government contracts
- Greenhouse gases
- Innovative technology
- Land development
- Land use and zoning
- Legislative advocacy
- Natural resources and habitat
- Pollution prevention and energy savings
- Real estate development and "green" building
- Regulatory programs
- Tax and finance
- Technology and outsourcing transactions

GREEN BUSINESSES

two problems, one solution

Policymakers seem to agree that two of the world's most-pressing problems—the economic meltdown and global warming—have a common solution. Over the next few years, billions of dollars of investment in green technologies will transform the energy industry and spawn millions of new jobs. At the same time, environmental laws and regulations will likely change dramatically to reflect policies promoting green technologies.

With an integrated practice group designed to address all of the related issues, Venable is helping clients sort out the answers and position their businesses for new opportunities.

CRITICAL SKILLS IN EVERY KEY AREA



Alternative Energy.

Venable represents and works with a diverse group of clients in the alternative energy field. We have experience in representing clients relating to all aspects of renewable and alternative energy matters including:

- Solar power
- Wind power
- Geothermals
- Ocean energy
- Hydroelectric power
- Fuel cells
- Transmission and siting
- Biofuels
- Biomass
- Waste-to-Energy
- Climate change
- Cap-and-Trade initiatives

Venable counsels a wide array of companies in the field from producers and generators, to transporters and transmission providers, to energy users and consumers. We counsel established companies with long track records of alternative energy development and startup companies that want to capitalize on new markets and opportunities. Our clients include developers, lenders, investors and municipalities.

ALTERNATIVE ENERGY CLIENTS

Electric vehicle technology
Solar power technology
Wind power technology
Solar power producers
Hybrid power

CARBON REGULATION CLIENTS

Utility industry
Energy transmission
Investors
Clean energy producers
Airline industry
Trucking industry
Transportation planning and infrastructure

ENVIRONMENTAL TRADING CLIENTS

Utility industry
Wetlands mitigation banking
Conservation banking
Water dischargers

TAX AND FINANCE CLIENTS

Energy production industry
Electric vehicle systems
Innovative clean up technologies
Investors in “green businesses”
Green building construction and renovation
Green industry trade Associations
State and local governments

POLLUTION PREVENTION AND ENERGY SAVINGS CLIENTS

Energy industry
Retail industry
Fleet (vehicle) management
Manufacturing industries

Carbon Regulation.

Venable attorneys represent energy clients in EPA's development of regulations addressing the sequestration of carbon in underground locations as part of the EPA's overall policy for carbon capture and storage for the nation's coal-fired power plants.

We are also advising clients planning a new clean-fuel utility that will be eligible for Kyoto greenhouse gas credits, and clients in a broad range of industries with interests in climate-change regimes.

Venable also represents clients undergoing environmental impact assessments, and advocates for other clients on climate-change legislation and regulatory rules.

Environmental Trading Markets.

Venable works with clients in a wide range of environmental credit trading markets including natural resource credit trading; wetlands and conservation banking; streams, species habitat and water quality credit trading; and cap and trade carbon markets. We help clients pull together deals using marketable environmental credits, navigate regulatory hurdles, structure appropriate funding and financing vehicles, and represent key industries in the development of regulations for environmental trading.

Tax and Finance Issues Surrounding Green Investments.

Every project with issues relating to energy efficiency or renewable resources provides financial opportunities. Venable is able to guide and assist clients in understanding and qualifying for the “energy” tax incentives and credits, including tax incentives for renewable energy production, energy efficient homes and buildings, and manufacturers. Venable offers creative approaches for monetizing these incentives and attracting investors if desired. Venable also helps state and local governments finance their green initiatives, and private-sector clients structure investment funds for investing in “green businesses.”

Pollution Prevention and Energy Savings.

Venable helps clients attain both legal compliance and savings by conducting environmental management and energy audits and advising on pollution-prevention practices. Our ability to draw on a variety of experience and maneuver within government agencies is ideally suited to navigating the issues involved in energy savings performance contracts (“ESPCs”). Such contracts bring together needs for counsel knowledgeable in numerous disciplines, including financing and grant funding, real property and lease issues, environmental law, construction, technology and government contracts law. Venable also represents energy savings companies in structuring ESPC deals with federal and state agencies, disputes over calculation of guaranteed savings, and the termination of ESPC projects.

Real Estate Development and Construction

Fueled by new regulatory requirements, financial and development incentives and market demand, the clamor for high performance and sustainable “green” buildings is fast becoming the rule rather than the exception. As federal and state governments increasingly require compliance with the United States Green Building Council's Leadership in Energy and Environmental Design (LEED®) Rating System and Low Impact Development requirements, Venable's team of land use, real estate and construction professionals—including attorneys accredited as LEED®-Accredited Professionals by USGBCI—advise clients on strategic compliance with these new standards, the particular risks associated with “green” building projects, and the unique considerations involved with the financing, design and construction of these projects.

REAL ESTATE DEVELOPMENT AND CONSTRUCTION CLIENTS

Owners and tenants
Investors
Development companies
Hotels
Contractors
Architects and engineers
“Zero impact” facilities

INNOVATIVE TECHNOLOGY CLIENTS

Clean up technology
Solar power
Wind power
Alternate fuels and components
Energy extraction
Nanotechnology
Smartgrid

ADVERTISING AND MARKETING CLIENTS

Foods
Dietary Supplementals
Drugs
Medical Devices
Consumer products

ENVIRONMENTAL LITIGATION AND INVESTIGATIONS CLIENTS

LEGISLATIVE ADVOCACY CLIENTS

Solar Power
Energy production
Alternate fuels
Transportation sector
Forestry and wetlands

[Innovative Technology.](#)

Thriving in the efficient and renewable energy sectors requires the development of innovative technology and leveraging that technology to optimize opportunities. Venable provides strategic counsel to companies in all stages of development, ranging from entrepreneurs to Fortune 500 institutions and to businesses focused on the wide-ranging technologies implicated in these sectors, ranging from nano and smartgrid technologies to energy extraction, alternative fuel, remediation and cleanup technologies. Frequently, we partner with attorneys in related firm practices to protect and enforce intellectual property rights; provide counsel on all manner of agreements (including license, supply, finance and distribution agreements); and advise on partnering arrangements, whether structured as an outsourcing arrangement, joint venture, merger or other acquisition.

[Advertising and Marketing Claims.](#)

Producers of “green,” “natural” or otherwise “sustainable” products are under scrutiny to properly label and advertise what they sell. Venable assists many clients with product registrations from the Environmental Protection Agency (EPA) and approvals by other agencies such as the Food and Drug Administration. Venable also helps companies determine whether their claims are appropriately supported, and helps them avoid exposure to “greenwashing” claims before the Federal Trade Commission and the National Advertising Division of the Better Business Bureau.

[Environmental Litigation and Investigations.](#)

With the government’s sharpened focus on environmental regulations comes increased scrutiny and liability for companies whose operations are affected by these initiatives. Venable provides comprehensive representation to these organizations on environmental-related litigation and investigations. Our team—led by former high-ranking environmental officials at the Department of Justice—represents businesses facing investigations from government agencies, civil matters stemming from a private right of action, or criminal charges. We represent corporations and individuals in proceedings before federal, state and administrative tribunals, including matters involving air, water, hazardous waste and natural resource claims. Venable attorneys also represent and counsel government contractors facing suspension or debarment by every major agency.

[Legislative Advocacy.](#)

Venable’s legislative attorneys and advisors are involved in energy, climate change and environmental legislation, including energy and energy-tax policy. With the experience and the abilities of Venable’s legislative attorneys and advisors, we offer clients the opportunity to shape current and new directions in energy policy, climate change and environmental matters by monitoring legislation, providing Congressional testimony and advocating for legislative and regulatory solutions.

[Venable began advising “green businesses” long before “green” became fashionable. And we’ve been counseling clients on taking green ideas to market, investing in green technologies, and navigating the regulatory maze of the alternative energy and environmental sectors for even longer.](#)

[You need a legal team with skills that work together and who understand these “shades of green.” That’s what you’ll find at Venable.](#)

[How can we help you? To find out, please contact us at 1.888.VENABLE or \[www.Venable.com\]\(http://www.Venable.com\).](#)



VENABLE SNAPSHOT

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Top 100 nationally
American Lawyer 2008

Top 10 in Washington, DC
Washington Business Journal 2008

Counsel to 40 of the Fortune 100

ENERGY QUICK FACTS

Attorneys dedicated to energy development and financing, federal and state regulatory proceedings and legislative matters involving all forms of energy, such as

- oil
- natural gas
- petroleum products
- electricity
- renewable energy, such as
 - solar
 - wind
 - hydro
 - geothermal
 - biofuels

PRACTICE FOCUS

- Transactions
- Regulatory proceedings
- Litigation
- Legislative and regulatory strategy
- Renewable/green energy

Energy

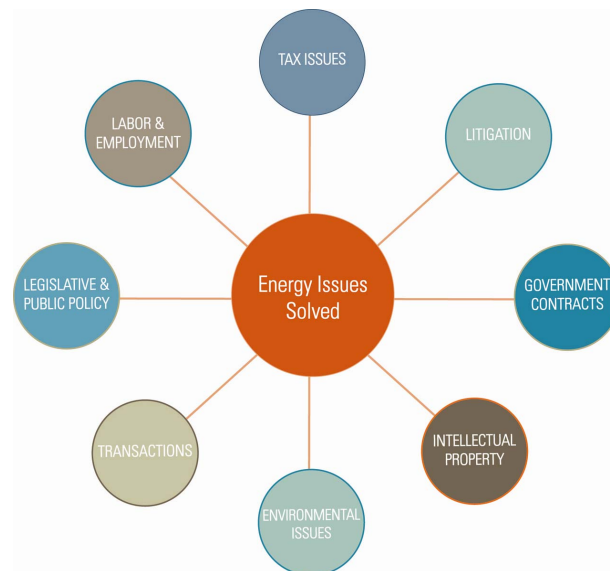
advocates for innovation across the industry

Venable is experienced in all facets of the energy industry. We've worked across the spectrum—from the ground to the consumer. We represent producers, refiners, renewable energy companies, shippers, marketers, consumers, importers and exporters, which gives Venable a global perspective on the requirements needed to address energy issues and meet your business needs.

For traditional producers and innovative energy developers—who are dealing with the need to replace aging and inadequate infrastructure, as well as the worldwide energy deficit and the threat of global warming—Venable provides a voice in Washington and an array of practical business solutions.

For major users, producers, refiners and other marketers of energy, Venable offers help in reducing and/or minimizing costs by providing fresh ideas and alternative solutions for the production/generation, transportation, transmission and distribution of energy to meet your needs.

ENERGY SOLUTIONS FROM A WEALTH OF VENABLE RESOURCES



An opportunity to change the way energy is produced, marketed and delivered.

Venable's energy attorneys handle all aspects of transactions, regulatory proceedings, litigation and legislative matters. We represent a broad range of clients in matters concerning the import and export of crude oil and petroleum products and the production and transportation of crude oil, petroleum products, propane, natural gas, natural gas liquids, LNG and the transmission and the generation of electricity from traditional and renewable energy sources.

With that experience and the abilities of Venable's legislative attorneys and advisors, we offer clients the opportunity to shape current and new directions in energy policy.

INDUSTRY EXPERIENCE

Aviation and transportation
Consumers and producers of
 crude oil
 electricity
 natural gas
 petroleum products
Crude oil and refined products
pipelines
Distribution and generation of
electricity
Municipal governments
Natural gas pipelines
Power generation
Renewable energy—biomass,
geothermal, hydro, solar, wind
Shippers, including refiners and
marketing companies
Transportation and storage of crude
oil, natural gas and petroleum
products
Utility companies

REGULATORY KNOW-HOW

Commodity Futures Trading
Commission
Department of Energy
Department of Interior
Environmental Protection Agency
Federal Energy Regulatory
Commission
Federal Trade Commission
Securities and Exchange
Commission
State and Federal Courts
State Public Utility Commissions
U.S. Army Corps of Engineers
U.S. Congress

REPRESENTATIVE EXPERIENCE

Making major solar production a reality.

Venable represented Acciona Solar Power and Solargenix Energy in state and federal regulatory and legislative initiatives that made possible the 64-MW Solar Thermal Electric Generating Plant in Boulder City, Nevada. Venable represents various interests in developing and funding solar and other renewable projects.

Powering a natural-gas-plus-solar plant.

Venable represents the City of Victorville, California, with regard to a planned 500-MW natural gas-fired power plant combined with a 50-MW solar plant. This plant will be the first hybrid power plant of its kind.

Understanding the details of the energy industry.

For more than 20 years, Venable attorneys have represented a consortium of electric utilities and trade associations, on all facets of solid waste, chemical and Department of Transportation (DOT) hazardous waste compliance and enforcement issues arising under the full array of federal and state environmental laws.

Blocking or minimizing pipeline rate increases.

Venable represents various airlines, refiners, marketers, producers, end-users and related trade associations in successfully blocking or minimizing pipeline rate increase filings, including litigation against a major rate increase (98%) for NGL shippers—the first NGL pipeline rate proceeding ever to be litigated.

Venable also represents refining and other interests before the U.S. Court of Appeals for the District of Columbia and other circuits in matters focused on Federal Energy Regulatory Commission (FERC) decisions, including those regarding the justness and reasonableness of pipeline rates.

Driving to favorable decisions on pipeline tariff issues.

Venable represents various entities, including a transportation association, in complex FERC rulemaking proceedings that impact pipeline tariff and compliance matters.

Venable also represents independent shippers, producers and marketers in blocking unreasonable prorationing proposals by major pipelines involving the transportation of oil and refined products, and in improving pipeline access.

Helping airlines hold down operating costs.

Venable represents four major airlines in complaints against the Kinder Morgan SFPP, L.P. pipeline and the Calneve pipeline regarding the reasonableness of its rates for transportation of jet fuel and for seeking refunds and/or reparations for past shipments.

Protecting shippers when a private equity fund bought a major pipeline.

Venable represented a petroleum product marketer and shipper before FERC and state public utility commissions when the largest common-carrier pipeline changed hands in a private-equity acquisition. Shippers successfully obtained conditions to the transfer, including the requirement for a \$100 million letter of credit to guarantee potential rate refunds.

Dealing with international energy issues.

Venable has extensive experience on international oil and gas projects, including writing energy laws for an African nation and handling arbitrations over oil- and gas-related disputes. We have worked on energy projects with private institutions, as well as institutions such as the World Bank Group and International Finance Corporation. Projects have been in Colombia, Ecuador, Ethiopia, Egypt, Iraq, Mexico, the Democratic Republic of the Congo and Russia.

We've been part of the energy industry for over three decades. We understand the issues you face. Our reputation and relationships in Washington give you a seat at the table and a powerful network of contacts on Capitol Hill and across the spectrum of federal agencies.

How can we help you? To find out, please contact us at 1.888.VENABLE or www.Venable.com.



Speaker Biographies



Lowell M. Rothschild

Partner, *Washington, DC Office*

lmrothschild@Venable.com

t 202.344.4065 f 202.344.8300

Lowell Rothschild has an extensive environmental practice spanning the range of environmental laws. He represents corporate, institutional, governmental, and quasi-governmental clients on issues regarding compliance with federal, state and local environmental laws, including:

- Clean Air Act (mobile sources, climate change, biofuels, fuel registration, and stationary sources);
- National Environmental Policy Act (NEPA);
- Wetlands;
- Endangered species;
- Clean Water Act (point source and non-point source);
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA);
- Resource Conservation and Recovery Act (RCRA);
- Toxic Substances Control Act (TSCA);
- Brownfields redevelopment;
- Real estate and corporate due diligence; and
- Environmental Management Systems.

Mr. Rothschild's practice involves civil, administrative and criminal litigation, as well as permitting, counseling and compliance work. He has been involved in litigation matters in state and federal courts and before administrative tribunals.

He has

- significant policy experience with both the legislative and administrative processes;
- wide-ranging administrative law experience, including comment and advice on rulemakings, FOIA, and administrative hearings; and
- experience with international environmental matters including trade and environmental policy issues and European Union chemical registration regulations.

He is admitted to practice in the states of California and Minnesota, their federal district and circuit courts, and the District of Columbia.

AREAS OF PRACTICE

Environmental Law

INDUSTRIES

Transportation and
Transportation Infrastructure

BAR ADMISSIONS

District of Columbia

California (inactive)

Minnesota

COURT ADMISSIONS

U.S. District Court for the
Northern District of California

U.S. Court of Appeals for the Ninth
Circuit

U.S. District Court for the District
of Minnesota

U.S. Court of Appeals for the
Eighth Circuit

U.S. District Court for the District
of Columbia

EDUCATION

J.D., *magna cum laude*, University of Minnesota, 1993

B.A., with distinction, University of Virginia, 1990

JUDICIAL CLERKSHIPS

San Francisco Superior Court Law and Motion Judge, 1993-94

MEMBERSHIPS

Transportation Research Board
Committee on Transit and
Intermodal Transportation Law

Liaison to Chairman of Trade and
Environmental Policy Advisory
Committee of the U.S. Trade
Representative

American Association of Airport
Executives Environmental
Services Committee

SIGNIFICANT MATTERS

- Successfully assisted client with registration of an alternative energy biofuel under EPA's Clean Air Act rules. This alternative was one of the first registered by EPA.
- Successful representation of Metropolitan Planning Organizations in their defense of planning for roadways.
- Successful representation of State transportation agencies in their defense of NEPA approvals and permits issued for the construction of major road projects.
- Continuing representation of a client in a major EPA and DOJ civil and criminal multimedia enforcement action, involving hundreds of alleged violations (air, water, hazardous waste and more) at more than twenty facilities nationally.
- Representation of a major real estate developer in the investigation, defense, and settlement of a nationally significant wetland enforcement action involving allegations of multiple violations over a period of years. The resolution allowed the client to continue with the development without undue delay.

ACTIVITIES

Past member, Board of Directors and Executive Committee Minneapolis Volunteer Lawyers' Network, and the Law and Health Policy Committee, Powderhorn/Phillips Cultural Wellness Center.

PUBLICATIONS

Mr. Rothschild's articles include:

- "Mobile Source Air Toxics: What's Known, Not Known, and What To Do About It," *Natural Resources & Environment*;
- "Wetlands: Avoiding the Swamp monster," *Environmental Aspects of Real Estate and Commercial Transactions*; and
- "Wetland Basics in the Twenty-First Century," *Land Use Law and Zoning Digest*.
- "Wetland Basics for Land Development," National Groundwater Association Annual Groundwater and Environmental Law Conference;
- "Coming Soon To A Grand Jury Near You: The Broader Implications Of The New Civil Rules Relating To Electronically Stored Information For Environmental Enforcement," ABA NRE Winter Meeting;
- "The Other Shoe Drops: Using Sarbanes-Oxley Criminal Provision, DOJ Indicts Attorney for Destroying Evidence in Advance of a Proceeding," *BNA White Collar Crime Report*;
- "Natural Lawyer," *TRB Environmental Issues in Transportation Newsletter*;
- "Supreme Court in the Crystal Ball," *National Wetlands Newsletter*;

SPEAKING ENGAGEMENTS

Mr. Rothschild's speaking engagements include:

- The Clean Water Act: Will Legislation Clarify Muddy Waters?, Association of Airport Executives National Aviation Environmental

Management Conference;

- “Wetland Jurisdiction and Mitigation Update,” Association of Airport Executives National Aviation Environmental Management Conference;
- “Going Green: The Airport and Aviation System of the Future” American Association of Airport Executives Aviation issues Conference;
- “Wetland Basics for Land Development,” National Groundwater Association Annual Groundwater and Environmental Law Conference;
- "Supreme Court Wetland Update," The Legal Perspective, WGMS radio;
- Clean Water Act Update, Transportation Research Board's 42nd Annual Workshop on Transportation Law;
- "Using Technology to Manage the Administrative Record for Complex Projects," Transportation Research Board's 81st Annual Meeting;
- "Practical Implications of Wetland Regulation," Minnesota Wetland Conference;
- "Key Developments in Wetlands Regulation," Oppenheimer Breakfast Series;
- "Brownfields, Redevelopment and Transit Facilities: Specific Case Studies," Transportation Research Board's 36th Annual Workshop on Transportation Law; and
- "Transportation Conformity v. General Conformity," Air and Waste Management Association's 93rd Annual General Conference and Exhibition.



Margaret N. Strand

Partner, *Washington, DC Office*

mnstrand@Venable.com

t 202.344.4699 f 202.344.8300

Peggy Strand concentrates on counseling, government relations and litigation in environmental programs Ms. Strand has substantial experience advising on the regulatory requirements of federal and state law, including natural resources, endangered species, climate change and pollution control.

Ms. Strand was Chief of the Environmental Defense Section in the U.S. Justice Department, Environmental and Natural Resources Division, from 1984 to 1991, having served as a Justice Department attorney since 1976. There, she supervised attorneys conducting litigation involving the regulatory programs of the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers.

She worked on federal environmental policy issues involving Congress and the Executive branch, including the White House, the Office of Management and Budget, and the Council on Environmental Quality. She works regularly with federal agencies and Congressional offices on matters of environmental policy.

AREAS OF PRACTICE

Environmental Law

Appellate Litigation

Homeland Security

INDUSTRIES

Green Businesses

Transportation and Transportation Infrastructure

Nanotechnology

GOVERNMENT EXPERIENCE

Chief, Environmental Defense Section, Environmental and Natural Resources Division, Department of Justice, 1984-1991

Trial Attorney and Assistant Section Chief, Department of Justice, 1976-1984

BAR ADMISSIONS

District of Columbia

Virginia

United States Supreme Court

Multiple federal district and appellate courts

REPRESENTATIVE CLIENTS

Ms. Strand represents a wide range of public and private entities, including several private land development companies. She has represented auto and engine manufacturers, resource development companies (oil and gas, timber, hard mineral extraction) and transportation planning authorities.

She has worked with credit trading in wetlands, water quality, species habitat and other natural resources; this includes carbon credits, a key element of greenhouse gas management and regulation For more than 10 years, she has represented the National Mitigation Banking Association, composed of private wetland and conservation bankers engaged in natural resource credit trading markets..

SIGNIFICANT MATTERS

She counseled a client presenting Congressional testimony on carbon sequestration and wetland mitigation banking in House hearings on the use of natural resources to address greenhouse gases and climate change.

Ms. Strand represented the State of Utah Department of Transportation to obtain permits and defend litigation concerning the Legacy Parkway, which faced claims of multiple violations of wetlands, environmental planning and clean air laws. Her work lead to a comprehensive resolution, and the new road opened in 2008.

She successfully represented the Washington Metropolitan Counsel of Governments in litigation challenging a new road under the Clean Air Act.

EDUCATION

J.D., College of William and Mary,
1976

M.A., University of Rhode Island,
1971

B.A. University of Rochester, 1968

MEMBERSHIPS

American Bar Association, Section
on Environment, Energy and
Resources

Environmental Law Institute

NAIOP, Northern Virginia Chapter

Transportation Research Board,
National Academy of Sciences

Ms. Strand assisted a private land developer with a range of permitting and compliance issues concerning endangered species associated with what became a highly successful multiple-use land development. The matter involved potential litigation, permits and ongoing compliance issues.

HONORS

- Recognized in *Chambers USA*, (2008, Band 3), (2007, 2006, 2005, Band 4) Environment, DC
- Named a leading Washington environmental lawyer in 2008, 2007, 2006 and 2005 by *Washingtonian* magazine.
- Listed in *The Best Lawyers in America* for Environmental Law (Woodward/White, Inc.)
- Named as a foremost legal practitioner in *Who's Who Legal*, 2008, 2007, 2006 and 2005

ACTIVITIES

Ms. Strand chairs the Environmental Law Committee of the Transportation Research Board of the National Academy of Sciences, and has served on the Academy's Board on Environmental Studies and Toxicology. She has also participated in various Academy study committees evaluating environmental topics.

She is past chair of the American Bar Association's Water Quality and Wetlands Committee, Section on Environment, Energy and Resources Law (SEER) and serves on the ALI-ABA Advisory Committee on Environmental Law.

She has also served on the board of directors of the Environmental Law Institute, the Editorial Board of the Environmental Law Reporter and the Advisory Board for the National Wetlands News.

PUBLICATIONS

Ms. Strand's many published works include:

- *Wetlands Deskbook*, Environmental Law Institute, 2009 (3rd Edition pending), 1997 (2nd edition) and 1993 (1st Edition.)
- *Environmental Aspects of Real Estate Transactions*, ABA, 2009 (pending), 1999 and 1996 (contributing author)
- *Assessing and Managing the Ecological Impacts of Paved Roads*, National Academy of Sciences, 2005 (contributing author)
- "Can the Mitigation Regulations Deliver Better Mitigation? Use Private Sector Models", *National Wetlands Newsletter*, March-April 2009
- "CWA Scorecard: Wetlands Won, Wetlands Lost," Environmental Forum, August 22, 2007
- "Mobile Source Air Toxics: What's Known, Not Known and What To Do About It," *Natural Resources & Environment*, Fall 2006 (with Lowell Rothschild)

SPEAKING ENGAGEMENTS

From 1993 to 2002, Ms. Strand was a professorial lecturer on the Law of Solid and Hazardous Waste at George Washington University Law School. She serves as program co-chair for the Advanced ALI-ABA Course of Study on Wetlands Law and Regulation.

Ms. Strand annually presents the lecture, "Recent Developments in Federal Wetlands Law," at the ALI-ABA Course of Study on Environmental Law, and is a

regular faculty member on the ALI-ABA conferences on Species Protection Law. She moderated "Climate Change Law 101," a featured panel at the 2009 Transportation Research Board Annual meeting, and presented a panel on "What Wetlands Lawyers Should Know about Climate Change" at the 2008 ALI-ABA Wetlands Conference.

Ms. Strand has been invited to speak at the Environmental Law Committee of the Alabama Bar Association, the National Conference on Mitigation and Conservation Banking, and the Natural Resources Committee of the Sacramento Chamber of Commerce, among other organizations.



Douglas H. Green

Partner, *Washington, DC Office*

dhgreen@Venable.com

t 202.344.4483 f 202.344.8300

AREAS OF PRACTICE

Environmental Law

BAR ADMISSIONS

District of Columbia

EDUCATION

J.D., *with honors*, George Washington University, 1983

B.A., *cum laude*, Connecticut College, 1979

Douglas Green has practiced law for more than 25 years, with a focus on complex administrative and appellate litigation, enforcement defense, and compliance counseling under the nation's environmental statutes, including the Resource Conservation and Recovery Act (RCRA), the Toxic Substances Control Act (TSCA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Clean Air Act (CAA).

Mr. Green is lead counsel for the Utility Solid Waste Activities Group (USWAG), an association consisting of more than 100 energy industry operating companies and associations, including the Edison Electric Institute, the National Rural Electric Cooperative Association, and the American Gas Association. Together with Venable partner Bill Weissman, Mr. Green has represented USWAG for more than 25 years on solid and hazardous waste and chemical compliance, reporting and enforcement issues arising under the full spectrum of federal and many state environmental laws.

Mr. Green's clients benefit from his decades of experience resolving complex environmental and administrative law issues. Because many of the areas in which Mr. Green represents clients, such as developing compliance and enforcement defense strategies, lack definitive regulatory guidelines, he often works directly with state and federal regulators to craft the regulatory and compliance framework that best protect the interests of his clients. This unique experience has given Mr. Green the knowledge and built professional relationships that are essential to the successful navigation of otherwise complex and often times adversarial regulatory situations.

SIGNIFICANT MATTERS

As part of his work for USWAG, Mr. Green has successfully petitioned the U.S. Environmental Protection Agency on a number of occasions to amend the federal hazardous waste rules to provide more cost-effective and environmentally protective regulations applicable to the utility industry. He also has represented utilities and other trade association clients in federal court in both defending and challenging final agency rules.

On behalf of a major chemical manufacturer, Mr. Green recently negotiated a "first-of-a-kind" consent decree with EPA regarding the implementation of a comprehensive TSCA audit.

HONORS

Listed as one of the leading Environmental lawyers in the United States in the 2008 edition of *Chambers USA: America's Leading Lawyers for Business*.

Named as a "Highly Recommended Individual" in the "Environment" section of the 2008 edition of *Which Lawyer? Yearbook*.

AV® Peer-Review Rated by Martindale-Hubbell

SPEAKING ENGAGEMENTS

Mr. Green frequently lectures on environmental issues, including environmental auditing, the regulatory aspects of hazardous waste and chemical management, as well as on the emerging array of greenhouse gas regulations.

VENABLE[®]_{LLP}

Additional Materials

SECTION-BY-SECTION

TITLE I—CLEAN ENERGY

SUBTITLE A—COMBINED EFFICIENCY AND RENEWABLE ELECTRICITY
STANDARD

Section 101, Combined Efficiency and Renewable Electricity Standard: Amends the Public Utility Regulatory Policies Act to require retail electric suppliers—defined as utilities that sell more than 4 million megawatt hours (MWh) of electricity to consumers for purposes other than resale—to meet a certain percentage of their load with electricity generated from renewable resources and electricity savings. The combined renewable electricity and electricity savings requirement begins at 6 percent in 2012 and gradually rises to 20 percent in 2020. Up to one quarter of the 20 percent requirement automatically may be met with electricity savings. Upon petition of the governor of any state, the Federal Energy Regulatory Commission is authorized to increase the proportion of the requirement that can be met with electricity savings to up to two fifths for electric suppliers located within that state. This would reduce the renewable requirement for such suppliers to a minimum of 12 percent renewables by 2020, with the remaining 8 percent of the combined target satisfied through electricity savings.

Defines renewable energy resources to include wind, biomass, solar, geothermal, certain hydropower projects, marine and hydrokinetic renewable energy, and biogas and biofuels derived exclusively from eligible biomass. Other qualifying energy resources include landfill gas, wastewater treatment gas, coal mine methane, and qualified waste-to-energy. An electric supplier's requirement is reduced in proportion to any portion of its electricity sales that is generated from certain existing hydroelectric facilities, new nuclear generating units, and fossil-fueled units that capture and geologically sequester greenhouse gas emissions.

Requires retail electric suppliers to submit Federal renewable electricity credits and electricity savings each year equal to the combined target for that year times the supplier's retail sales. One renewable electricity credit is given for each MWh of electricity produced from a renewable or other qualifying energy resource. To encourage greater deployment of distributed generation, like small wind and rooftop solar, these projects meeting certain criteria are eligible for three credits for each MWh produced. Retail electric suppliers may submit, in lieu of a renewable electricity credits and demonstrated electricity savings, an alternative compliance payment equal to \$25 per MWh (2.5 cents per kilowatt hour).

Electric suppliers choosing to use efficiency for a portion of their compliance are required to demonstrate achievement of electricity savings relative to business-as-usual projections through efficiency measures, including savings achieved through reductions in end-use electricity consumption attributable to measures or technologies such as equipment or facility upgrades, combined heat and power, energy recycling (waste heat recovery), and fuel cells. Electric suppliers may meet the efficiency standards either by achieving electricity savings directly or by using bilateral contracts to acquire savings achieved within the same state by other suppliers or distribution companies, states, or third-party efficiency providers.

Section 102, Clarifying State Authority to Adopt Renewable Energy Incentives: Provides that, notwithstanding any provision to the contrary in the Public Utility and Regulatory Policies Act of 1978 (PURPA), any State may establish rates to be paid by state-regulated utilities intended to provide incentives for development of renewable energy. In the past, some have interpreted PURPA to bar such incentive rates to the extent they exceed the “avoided cost” of power a utility could generate or procure from any other source, denying States the ability to account for the additional benefits of renewable energy.

SUBTITLE B—CARBON CAPTURE AND SEQUESTRATION

Section 111, National Strategy: Requires the EPA Administrator, in consultation with the heads of other relevant federal agencies, to submit to Congress a report setting forth a unified and comprehensive strategy to address the key legal and regulatory barriers to the commercial-scale deployment of carbon capture and sequestration.

Section 112, Regulations for Geologic Sequestration Sites: Amends the Clean Air Act to require the Administrator to establish a coordinated approach to the certification and permitting of sites where geologic sequestration of carbon dioxide will occur. Requires the Administrator to promulgate regulations to minimize the risk of escape to the atmosphere of carbon dioxide injected for geologic sequestration and details the requirements of such regulations. Such regulations will apply in tandem with regulations promulgated under the Safe Drinking Water Act. Together, these regulations will provide a comprehensive, multi-media regulatory framework for geologic sequestration activities.

Section 112 also amends the Safe Drinking Water Act to establish a deadline for promulgation of regulations for carbon dioxide geologic sequestration wells and to clarify financial responsibility requirements to be established under such regulations.

Injection of carbon dioxide for geologic sequestration can take place either solely for the purpose of storing carbon dioxide, or for the dual purposes of storing carbon dioxide and conducting enhanced hydrocarbon recovery activities. For example, carbon dioxide can be injected for permanent storage in a saline aquifer, or it can be injected as part of enhanced oil recovery operations and then be permanently stored in a depleted oil field. Regulations promulgated under Section 112, and under the Safe Drinking Water Act as amended, should apply to all instances where carbon dioxide is injected for geologic sequestration, regardless of whether or not

the injection also serves the purposes of enhancing hydrocarbon recovery activities.

Section 113, Studies and Reports: Section 113(a) requires the Administrator to establish a multi-stakeholder task force to conduct a study of the legal framework for geologic sequestration sites. Section 113(b) directs the Administrator to conduct a study that examines how the multiple environmental statutes that EPA administers, including but not limited to the Comprehensive Environmental Response, Compensation, and Liability Act and the Resource Conservation and Recovery Act, would apply to geologic sequestration activities.

Section 114, Carbon Capture and Sequestration Demonstration and Early Deployment Program: Establishes a program for the demonstration and early deployment of carbon capture and sequestration (CCS) technologies. Authorizes fossil-based electricity distribution utilities to hold a referendum on the establishment of a Carbon Storage Research Corporation. If approved by entities representing two-thirds of the nation's fossil fuel-based delivered electricity, the Corporation would be established and would be authorized to collect assessments on distribution utilities for all fossil fuel-based electricity delivered directly to retail consumers. The Corporation would be operated as a division or affiliate of the Electric Power Research Institute and would assess fees totaling approximately \$1 billion annually for ten years, to be used by the Corporation to fund the large-scale demonstration of CCS technologies in order to accelerate the commercial availability of the technologies.

Section 115, Commercial Deployment of Carbon Capture and Sequestration Technologies: Amends the Clean Air Act to direct the EPA Administrator to establish an incentive program to distribute allowances to support the commercial deployment of CCS technologies in both electric power generation and industrial applications. Establishes eligibility requirements for facilities to receive allowances based on the number of tons of carbon dioxide sequestered. The allowance disbursement program is structured to provide greater incentives for facilities to deploy CCS technologies early in the program and for facilities to capture and sequester larger amounts of carbon dioxide.

Section 116, Performance Standards for Coal-Fueled Power Plants: Amends the Clean Air Act to establish performance standards for new coal-fired power plants permitted in 2009 or thereafter. Describes eligibility criteria, applicable emission standards, and the schedule upon which such standards must be met. Plants permitted in 2020 or thereafter are required to meet specified standards upon commencement of operations. Plants permitted from 2009–2020 are required to meet the specified standard within four years after certain technology deployment criteria are met but no later than 2025.

SUBTITLE C—CLEAN TRANSPORTATION

Section 121, Electric Vehicle Infrastructure: Amends the Public Utility Regulatory Policies Act to require utilities to consider developing plans to support electric vehicle infrastructure and to consider establishing protocols for integration with smart grid systems.

Section 122, Large-Scale Vehicle Electrification Program: Authorizes the Secretary of Energy to provide financial assistance for regional deployment and integration of grid-connected vehicles. Funds may be used for offsetting the incremental cost of purchasing new plug-in electric drive vehicles, deployment of electric charging stations or battery exchange locations, or facilitating the integration of smart grid equipment with plug-in electric drive vehicles. Makes data and results from the regional deployments publicly available.

Section 123, Plug-In Electric Drive Vehicle Manufacturing: Authorizes the Secretary of Energy to provide financial assistance for retooling existing factories for the manufacture of electric vehicles. Authorizes the Secretary of Energy to provide financial assistance to help auto manufacturers purchase batteries for first production vehicles.

Section 124, Investment in Clean Vehicles: Provides for distribution of allowances for plug-in electric drive vehicle manufacturing and deployment and advanced technology vehicles.

Section 125, Advanced Technology Vehicle Manufacturing Incentive Loans: Increases the authorization for loan guarantees under section 136 of the Energy Independence and Security Act of 2007 to \$50,000,000,000. Loan guarantees are for reequipping, expanding or establishing manufacturing facilities for advanced technology vehicles or their components, as well as the engineering integration work for such vehicles.

Section 126, Amendment to Renewable Fuels Standard: Amends the definition of “renewable biomass” in section 211 of the Clean Air Act to increase the types of biomass from Federal and non-Federal lands that may be used to make renewable fuel that qualifies for the Renewable Fuels Standard.

Section 127, Open Fuel Standard: Provides the Secretary of Transportation with the authority to require light-duty automobile manufacturers to make vehicles capable of operating on ethanol and methanol-based fuels if the Secretary determines that such requirements are a cost-effective way to achieve the nation’s energy independence and environmental objectives.

Section 128, Temporary Vehicle Trade-In Program: Establishes a “Cash for Clunkers” program. Under this program, consumers may trade in their old, gas-guzzling vehicles and receive vouchers worth up to \$4,500 to help pay for new, more fuel efficient cars and trucks. The program is authorized for \$4 billion for one year, and providing for approximately one million new car or truck purchases.

New passenger cars which achieve at least 22 mpg are eligible for a \$3,500 voucher if the performance of the new car is at least 4 mpg higher than the old vehicle and a \$4,500 voucher if the performance of the new car is at least 10 mpg higher than the old vehicle. Light duty trucks which achieve at least 18 mpg are eligible for a \$3,500 voucher if the performance of the new truck is at least 2 mpg higher than the old vehicle and a \$4,500 voucher if the performance of the new truck is at least 5 mpg higher than the old vehicle. Large light duty trucks which achieve at least 15 mpg are eligible for a \$3,500 voucher if the performance of the new truck is at least 1 mpg higher than the old vehicle and a \$4,500 voucher if the performance of the new truck is at least 2 mpg higher than

the old vehicle. Consumers can also trade in a pre-2002 work truck (defined as a pick-up truck or cargo van weighing from 8,500–10,000 pounds) and receive a voucher worth \$3,500 for a new work truck in the same or smaller weight class. Consumers can also “trade down,” receiving a \$3,500 voucher for trading in an older work truck and purchasing a smaller light-duty truck weighing from 6,000 8,500 pounds. Work truck purchases are capped such that the total funds used to purchase work trucks cannot exceed 7.5 percent of all program funds. The section also includes important consumer protections and protections against program fraud.

Section 129, Diesel Emissions Reduction: Amends the diesel emission reduction grant program established by Subtitle G of title VII of the Energy Policy Act of 2005 (42 U.S.C. 16131 et seq.) by adding American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, Puerto Rico, and the Virgin Islands to the list of States eligible to receive grants, and by adjusting the grant distribution formula accordingly.

Section 130, Loan Guarantees for Projects to Construct Renewable Fuel Pipelines: Amends title XXII of the Energy Policy Act of 2005 to add renewable fuel pipelines to the list of projects and technologies available for loan guarantees under the title.

SUBTITLE D—STATE ENERGY AND ENVIRONMENT DEVELOPMENT
ACCOUNTS

Section 131, Establishment of SEED Accounts: Creates a program for each state to establish a State Energy and Environment Development (SEED) Account, to serve as a state-level repository for managing and accounting for all emission allowances designated primarily for renewable energy and energy efficiency purposes.

Section 132, Support of State Renewable Energy and Energy Efficiency Programs: Distributes emission allowances among states for energy efficiency programs and renewable energy deployment and manufacturing support. At least 12.5 percent of the allowances are distributed to local governments for these purposes.

SUBTITLE E—SMART GRID ADVANCEMENT

Section 141, Definitions: Provides relevant definitions.

Section 142, Assessment of Smart Grid Cost Effectiveness in Products: Instructs the Department of Energy and the Environmental Protection Agency to assess products evaluated for Energy Star ratings for benefits of Smart Grid capability.

Section 143, Inclusions of Smart Grid Capability on Appliance ENERGY GUIDE Labels: Instructs Federal Trade Commission to include relevant information on the ENERGY GUIDE labels for those products that include cost-effective Smart Grid capability.

Section 144, Smart Grid Peak Demand Reduction Goals: Requires the Federal Energy Regulatory Commission to coordinate and support a national program to reduce peak electric demand for load-serving electric utilities with peak loads in excess of 250 megawatts.

Section 145, Reauthorization of Energy Efficiency Public Information Program to Include Smart Grid Information: Amends the Energy Policy Act of 2005 to reauthorize the joint Department of Energy and Environmental Protection Agency energy efficiency public

information initiative and expands the initiative to include information on smart grid technologies, practices, and benefits.

Section 146, Inclusion of Smart Grid Features in Appliance Rebate Program: Amends the Energy Policy Act of 2005 to expand energy efficient appliance rebate program to include rebates for efficient appliances with smart grid features and capability. Clarifies program cost-sharing requirements from states.

SUBTITLE F—TRANSMISSION PLANNING

Section 151, Transmission Planning: Amends the Federal Power Act to establish a federal policy on electric grid planning that recognizes the need for new transmission capacity to deploy renewable energy as well as the potential for more efficient operation of the current grid through new technology, demand-side management, and storage capacity. Enhances existing regional transmission planning processes by incorporating this federal policy. Charges the Federal Energy Regulatory Commission with supporting, coordinating, and integrating regional planning efforts.

Section 152, Net Metering for Federal Agencies: Adopts a standard requiring utilities (that sell in excess of 4,000,000 megawatt hours of electricity) to interconnect with and to provide net metering of power deliveries to and receipts from Federal agencies that own, operate or site facilities generating renewable energy. The net metering service is to be offered to such Federal agencies on the basis of non-discriminatory time-sensitive rates.

Section 153, Support for Qualified Advanced Electric Transmission Manufacturing Plants, Qualified High Efficiency Transmission Property, and Qualified Advanced Electric Transmission Property: Amends Title XVII of the Energy Policy Act of 2005 to extend the loan guarantee authority in that Title to cover the development, construction, or integration of high-efficiency or superconductive high-voltage electricity transmission technologies. It also provides such loan guarantees for manufacturing plants producing such technologies. It separately authorizes the Secretary of Energy to make grants for up to 50 percent of the cost of the first project incorporating such technologies, up to a maximum of \$100,000,000.

SUBTITLE G—TECHNICAL CORRECTIONS TO ENERGY LAWS

Sections 161–162, Technical Corrections to Energy Independence and Security Act of 2007 and Energy Policy Act of 2005: Makes technical corrections to the Energy Independence and Security Act of 2007 and the Energy Policy Act of 2005.

SUBTITLE H—CLEAN ENERGY INNOVATION CENTERS

Section 171, Clean Energy Innovation Centers: Establishes a program to support development and commercialization of clean energy technologies through eight regional Clean Energy Innovation Centers selected competitively by the Secretary of Energy. Emission allowances to support the establishment of Centers may be awarded to consortiums consisting of research universities, private research entities, industry, and relevant state institutions. Each Center has a unique technology focus to which at least 40 percent of support would be directed.

Section 172, Building Assessment Centers: Requires the Secretary of Energy to create building assessment centers at institutions of higher education to identify opportunities to optimize the energy and environmental performance of buildings. The centers would also promote emerging technologies and research and development to improve buildings' energy and environmental performance. Additionally, the centers would train engineers, architects, and building technicians in energy efficient building design and operation.

Section 173, Centers for Energy and Environmental Knowledge and Outreach: Provides for the establishment of not more than 10 regional centers for energy and environmental knowledge and outreach (CEEKO) to coordinate various energy-related research centers. Operating in coordination with each CEEKO would be one or more industrial research and assessment center, building assessment center, and clean energy application center located in that CEEKO's region. Institutions of higher education would compete to house such centers and would operate internship programs to train students in energy efficiency with Federal funding supporting up to 50 percent of the costs.

SUBTITLE I—NUCLEAR AND ADVANCED TECHNOLOGIES

Section 181–189: Establishes a self-sustaining Clean Energy Deployment Administration (CEDA) within the Department of Energy to promote the domestic development and deployment of clean energy technologies. The Clean Energy Deployment Administration would partner with and support private capital markets to promote access to affordable financing for a range of clean energy technologies that might otherwise be unable to secure financing. CEDA ensures support for a variety of next generation technologies by limiting to 30 percent the amount of financial assistance provided to any one technology. This subtitle also reforms the loan guarantee program established by Title 17 of the Energy Policy Act of 2005.

SUBTITLE J—MISCELLANEOUS

Section 191, Study of Ocean Renewable Energy and Transmission Planning and Siting: Requires the Federal Energy Regulatory Commission, the Department of the Interior, and the National Oceanic and Atmospheric Administration to jointly recommend an approach for the development of regional marine spatial plans for the siting of offshore renewable energy facilities. The Council on Environmental Quality determines whether the recommended approach should be implemented and coordinates the implementation. The Committee intends that the relevant agencies will continue to implement their existing leasing, licensing, and permitting programs while the study is underway and while marine spatial plans are being developed.

Section 192, Clean Technology Business Competition Grant Program: Provides for grants by the Secretary of Energy to nonprofit organizations that conduct competitive programs to identify and support start-up businesses proposing products or services in areas of energy efficiency, renewable energy, air quality, water quality and conservation, transportation, smart grid, green building, and waste management.

Section 193, National Bioenergy Partnership: Requires the Secretary of Energy to establish a National Bioenergy Partnership to support the institutional and physical infrastructure necessary to promote the deployment of sustainable biomass fuels and bioenergy technologies.

Section 194, Office of Consumer Advocacy: Establishes an Office of Consumer Advocacy at the Federal Energy Regulatory Commission to identify and defend the consumer interest in proceedings before the Commission. The office would be headed by a Presidentially-appointed Director, and would represent energy customers through investigations of rates, in complaints, and on appeal of Commission decisions concerning such matters.

TITLE II—ENERGY EFFICIENCY

SUBTITLE A—BUILDING ENERGY EFFICIENCY PROGRAMS

Section 201, Greater Energy Efficiency in Building Codes: Amends the Energy Conservation and Production Act to establish upon enactment and in 2014 (or 2015 for new commercial buildings), respectively, targets for improved energy efficiency building codes to achieve 30 percent and 50 percent reductions in energy use in new buildings. The Secretary of Energy is required to support consensus code-setting organizations in developing and publishing codes meeting those targets; to adopt such codes directly if such organizations fail to do so; to include cool roofs standards; to support state and local adoption of such advanced codes by supporting training and funding for energy efficiency code enforcement; and to provide direct federal enforcement of such codes if states and local governments decline to do so.

Section 202, Building Retrofit Program: Establishes a program under which the Administrator of EPA, in consultation with the Secretary of Energy, supports development of standards and processes for retrofitting existing residential and nonresidential buildings. Authorizes the Secretary of Energy to provide funding to states to conduct cost-effective building retrofits, using local governments, other agencies or entities to carry out the work, through flexible forms of financial assistance up to 50 percent of the costs of retrofits, with funding increasing in proportion to efficiency achievement. Also supports retrofits of historic buildings.

Section 203, Energy Efficient Manufactured Homes: Establishes a program to provide federal rebates of up to \$7,500 toward purchases of new Energy Star-rated manufactured homes for low-income families residing in pre-1976 manufactured homes.

Section 204, Building Energy Performance Labeling Program: Establishes an EPA program to develop procedures to label buildings for their energy performance characteristics, using building type and consumption data to be developed by the Energy Information Administration. The program would be implemented by states in a manner suited to increasing public knowledge of building energy performance without hindering real estate transactions.

Section 205, Tree Planting Programs: Authorizes a grant program through the Department of Energy to provide technical and financial assistance to retail power providers that carry out targeted tree planting programs, which reduce energy use and demand peaks in residential and small office settings.

Section 206, Energy Efficiency for Data Center Buildings: Establishes a deadline for the designation by the Secretary of Energy and the Administrator of the Environmental Protection Agency of an information technology organization to consult and coordinate with them on data center energy efficiency, as called for—but without a deadline—in Section 453(c)(1) of the Energy Independence and Security Act of 2007. The deadline would effectively be set at December 19, 2009.

SUBTITLE B—LIGHTING AND APPLIANCE ENERGY EFFICIENCY PROGRAMS

Section 211, Lighting Efficiency Standards: Amends the Energy Policy and Conservation Act to adopt negotiated agreements on technical standards for lighting, including outdoor lighting—street lights, parking lot lights, and parking structure lights—and portable light fixtures such as typical household and commercial plug-in lamps.

Section 212, Other Appliance Efficiency Standards: Amends the Energy Policy and Conservation Act to adopt consensus agreements on technical standards for hot food holding cabinets, bottle-type drinking water dispensers, portable spas (hot tubs), and commercial-grade natural gas furnaces.

Section 213, Appliance Efficiency Determinations and Procedures: Amends the Energy Policy and Conservation Act to improve the Department of Energy process for setting energy-efficiency standards by enabling adoption of consensus testing procedures; requiring the adoption of a new television standard; improving standard-setting cost-effectiveness formula; authorizing the Secretary to obtain product-specific information as needed; authorizing state injunctive enforcement of standards violations; changing the role of appliance efficiency in building codes; and including greenhouse gas emissions, smart grid capability, and availability of more-efficient models among factors affecting efficiency standard ratings.

Section 214, Best-in-Class Appliances Deployment Program: Creates a Department of Energy program to provide rewards to retailers for successful marketing of high-efficiency appliances, designating top performers as “best-in-class,” and providing bonuses based on efficiency improvement compared to average product. Provides additional rewards to retailers when best-in-class sale includes return and recycling of inefficient appliances. Creates program to reward manufacturers of new high-efficiency best-in-class models representing significant incremental energy efficiency gain.

The rewards programs for products in this section should not in any way interfere with, discourage, or prevent DOE from adopting minimum standards under the Energy Policy and Conservation Act (42 U.S.C. 6291–6317) that require all products to achieve the same or better efficiency levels as products eligible for awards under this section, where such standards are technologically feasible and economically justified.

Section 215, Water Sense: Authorizes the EPA’s WaterSense program, a voluntary labeling program that labels water-efficient high-performance products and services. This will provide the same type of labeling for water efficient products and services as is already done for energy efficient products under the existing Energy Star program.

Section 216, Federal Procurement of Water Efficient Products: Directs federal agencies to make cost-effective water-efficient procurement decisions by purchasing WaterSense or Federal Energy Management Program certified products whenever possible.

Section 217, Water Efficient Product Rebate Programs: Authorizes grants to state governments that establish programs that offer financial incentives to consumers who purchase and install water-efficient products and services such as those labeled by WaterSense.

Section 218, Certified Stoves: This section directs the Environmental Protection Agency (EPA) to establish a program to assist in the replacement of old polluting inefficient wood stoves or pellet stoves with cleaner burning units. It would build on the successes of the EPA's voluntary partnership program, known as the Great American Wood Stove Changeout Program, by providing grants, incentives and loans for people who rely on wood as a source of heat. It would improve air quality in many communities and save money for those who heat their homes with wood. Climate change benefits would occur from reductions in methane and carbon dioxide from improved combustion efficiency.

The Committee intends that, under section 218(a)(3), all "certified stoves" under the program will have been tested by an EPA-accredited laboratory specified by the methods required under the standards of performance for new residential wood heaters under subpart AAA of part 60 of subchapter C of chapter I of title 40, Code of Federal Regulations (or successor regulations).

Section 218(b)(1) is meant to apply to sales of new wood stoves or pellet stoves. Although the standards of performance for new residential wood heaters under subpart AAA of part 60 of subchapter C of chapter I of title 40, Code of Federal Regulations (or successor regulations) already apply to new wood stoves, section 218(b)(1) additionally addresses pellet stoves.

The requirement in section 218(b)(2) that "no wood stove or pellet stove replaced under this program is sold or returned to active service, but that it is instead destroyed and recycled to the maximum extent feasible" should be implemented as part of the Certified Stoves Program. This provision does not require the promulgation of regulations.

Section 219, Energy Star Standards: Adds new requirements to the administration by the Department of Energy and the Environmental Protection Agency of the Energy Star program, including consideration of prototype products, consideration of ways of providing more detailed comparative information among Energy Star products, review of product qualifications on a regular basis, updating qualifications as necessary, and providing proof of performance through testing of products purchased in the market.

SUBTITLE C—TRANSPORTATION EFFICIENCY

Section 221, Emissions Standards: Amends Title VIII of the Clean Air Act to require EPA to establish greenhouse gas emissions standards for new heavy-duty vehicles and engines, for nonroad vehicles and engines, and for aircraft and aircraft engines.

Section 222, Greenhouse Gas Emissions Reductions through Transportation Efficiency: Amends Title VIII of the Clean Air Act to require states to establish goals for greenhouse gas reductions from the transportation sector and requires the submission of

transportation plans to meet those goals by Metropolitan Planning Organizations for areas with populations exceeding 200,000 people. Imposes sanctions on states that fail to submit goals or plans. Authorizes a competitive grant program for development and implementation of plans.

Section 223, SmartWay Transportation Efficiency Program: Amends Title VIII of the Clean Air Act to expand an existing EPA loan and fuel saving technology deployment program, the SmartWay Transport Partnership, to help American truckers upgrade to more fuel efficient and less polluting vehicles.

Section 224, State Vehicle Fleets: Requires the Secretary of Energy to update state fleet rules to be consistent with current law.

SUBTITLE D—INDUSTRIAL ENERGY EFFICIENCY PROGRAMS

Section 241, Industrial Plant Energy Efficiency Standards: Requires the Secretary of Energy to establish standards for industrial energy efficiency and to seek recognition of result by American National Standards Institute.

Section 242, Electric and Thermal Waste Energy Recovery Award Programs: Creates an award program for innovation in increasing the efficiency of thermal electric generation processes, including encouragement for utilities to capture and separately market excess thermal energy.

Section 243, Clarifying Election of Waste Heat Recovery Financial Incentives: Clarifies Section 451 of the Energy Independence and Security Act of 2007 to ensure that those who recover waste energy can elect to receive the incentive grants provided in that section, or tax credits provided for combined heat and power, but not both.

Section 244, Motor Market Assessment and Commercial Awareness Program: Provides for the Secretary of Energy to conduct an assessment of the stock and usage of electric motors and motor-driven equipment from an energy efficiency perspective, and to identify opportunities for upgrading such motors to improve energy efficiency. The Secretary is then instructed to establish a national program targeted at motor end-users to make them aware of the potential energy efficiency gains that could be realized by using more efficient motors and motor control equipment.

Section 245, Motor Efficiency Rebate Program: Establishes a rebate program for replacement of low efficiency industrial-scale electric motors with high-efficiency motors. The rebate amount is \$25 per unit of nameplate horsepower of the new motor to the purchaser of that motor, and \$5 to the distributor of that motor.

SUBTITLE E—IMPROVEMENTS IN ENERGY SAVINGS PERFORMANCE CONTRACTING

Section 251, Energy Savings Performance Contracts: Amends the National Energy Conservation Policy Act to establish competition requirements for specific energy savings performance contract task orders.

SUBTITLE F—PUBLIC INSTITUTIONS

Section 261, Public Institutions: Amends the Energy Independence and Security Act to include non-profit hospitals and public

health facilities among public institutions eligible for grants and loans and clarifies loan and cost-share conditions.

Section 262, Community Energy Efficiency Flexibility: Amends the Energy Independence and Security Act to remove limits on funds received by communities through the Energy Efficiency and Conservation Block Grant program that can be used to fund revolving loan accounts or through sub-grants for purposes of the program.

Section 263, Small Community Joint Participation: Amends the Energy Independence and Security Act to allow small communities to join with other neighboring small communities in a joint program of sufficient size to be defined as an eligible local government recipient under the Energy Efficiency and Conservation Block Grant program.

Section 264, Low-Income Community Energy Efficiency Program: Authorizes grants to community development organizations to provide financing to improve energy efficiency, develop alternative, renewable, and distributed energy supplies, promote opportunities for low-income residents, and increase energy conservation in low income rural and urban communities.

SUBTITLE G—MISCELLANEOUS

Section 271, Energy Efficient Information and Communications Technologies: Requires the Director of the Office of Management and Budget to collaborate with each Federal agency to create an implementation strategy for the purchase and use of energy efficiency information and communication technologies and practices, establishing performance goals for each agency within 6 months of enactment. Such technologies and practices include advanced metering, efficient data center strategies, updated applications, building systems, and telework.

Section 272, National Energy Efficiency Goals: Declares a national energy efficiency goal of improving overall energy productivity of the United States by 2.5 percent per year beginning in 2012 and continuing through 2030. Instructs the Secretary of Energy, the Administrator of the Environmental Protection Agency, and other relevant federal agencies, with public input, to collaborate on a strategic plan to achieve such a national goal, detailing the regulatory, funding, and policy priorities required to do so, and to update that plan biennially.

Section 273, Affiliated Island Energy Independence Team: Requires the Secretary of Energy to establish a team of technical, policy, and financial experts to address the energy needs of the islands that make up U.S. territories or otherwise affiliated with the U.S. The team will assess the means of reducing these islands' reliance on imported fossil energy, increasing the use of indigenous energy, and increasing the efficiency of energy use on the islands. The team will also develop an energy action plan for each island based on that assessment.

Section 274, Product Carbon Disclosure Program: Creates a new product carbon disclosure program at EPA. Not later than 18 months after the date of enactment, EPA would be required to issue a report to Congress regarding whether a national product carbon disclosure program and labeling program would be effective in reducing greenhouse gas emissions and other related matters.

No later than 36 months after the date of enactment, EPA would be required to establish a national product carbon disclosure program, participation in which shall be voluntary. The national product carbon disclosure program may include a product carbon labeling program.

TITLE III—REDUCING GLOBAL WARMING

Section 301, Short Title: Title III and sections 112, 115, 116, 221, 222, 223, and 401 of the American Clean Energy and Security Act shall be known as the Safe Climate Act.

SUBTITLE A—REDUCING GLOBAL WARMING POLLUTION

Section 311, Section 312, and Section 321, Reducing Global Warming Pollution: Establishes Title VII of the Clean Air Act to provide a declining limit on global warming pollution and to hold industries accountable for reducing global warming pollution pursuant to this limit.

TITLE VII—GLOBAL WARMING POLLUTION REDUCTION PROGRAM

PART A—GLOBAL WARMING POLLUTION REDUCTION GOALS AND TARGETS

Section 701, Findings and Purposes.

Section 702, Economy-wide Reduction Goals: States that the goals of Title VII and Title VIII are to reduce economy-wide global warming pollution to 97 percent of 2005 levels by 2012, 80 percent by 2020, 58 percent by 2030, and 17 percent by 2050.

Section 703, Reduction Targets for Specified Sources: Requires that the regulations issued under section 721 reduce emissions of covered sources to 97 percent of 2005 levels by 2012, 83 percent by 2020, 58 percent by 2030, and 17 percent by 2050.

Section 704, Supplemental Pollution Reductions: Directs the Administrator to achieve additional low-cost reductions in global warming pollution by using a small portion of the emissions allowances to provide incentives to reduce emissions from international deforestation.

Section 705, Review and Program Recommendations: Directs the Administrator to submit a report to Congress every four years. These reports will include: an analysis of the latest science relevant to climate change, an analysis of capacity to monitor and verify greenhouse gas reductions, and an analysis of worldwide and domestic progress in reducing global warming pollution. The reports will identify steps that could be taken to better improve our understanding of climate impacts, improve monitoring and verification, and any additional reductions in emissions that may be needed to avoid dangerous climate change.

Section 706, National Academy Review: Directs the Administrator to commission reports from the National Academy of Sciences every four years. These reports will include: an update on the progress of various clean technologies, and an evaluation of the most recent EPA report submitted under Section 705. The reports will identify steps that could be taken to better improve our understanding of climate impacts, improve monitoring and verification, speed the deployment of clean technology, and any additional re-

ductions in emissions that may be needed to avoid dangerous climate change.

Section 707, Presidential Response and Recommendations: Directs the President to use existing authority to respond to recommendations in the reports. If the National Academy review confirms that further emissions reductions are needed, either domestically or globally, the President must submit a report to Congress recommending steps (including legislation) to achieve those reductions.

PART B—DESIGNATION AND REGISTRATION OF GREENHOUSE GASES

Section 711, Designation of Greenhouse Gases: Establishes a list of greenhouse gases regulated under this title: carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons (HFCs) emitted as a byproduct, perfluorocarbons, and nitrogen trifluoride. Section 711(a)(5) is intended to address hydrofluorocarbons (HFCs) that are emitted from a chemical manufacturing process at an industrial stationary source. HFCs that are sold for an industrial or commercial purpose after their initial production or importation are covered under Title VI. This section includes provisions for listing other anthropogenic gases as greenhouse gases if 1 metric ton of the gas contributes as much as or more to global warming over 100 years than does one metric ton of carbon dioxide. Water vapor cannot be listed as a greenhouse gas under this title because one metric ton of water vapor in the troposphere does not contribute as much as or more to global warming over 100 years than does one metric ton of carbon dioxide.

Section 712, Carbon Dioxide Equivalent Value of Greenhouse Gases: Lists carbon dioxide equivalents for each gas. Requires periodic review of equivalence values by the Administrator.

Section 713, Greenhouse Gas Registry: Directs EPA to establish a federal greenhouse gas registry and comprehensive reporting system for greenhouse gas emissions.

PART C—PROGRAM RULES

Section 721, Emission Allowances: Establishes an annual tonnage limit on greenhouse gas emissions from specified activities. Directs the Administrator to establish allowances equal to the tonnage limit for each year (with one allowance representing the permission to emit one ton of greenhouse gases, measured in tons of carbon dioxide equivalent).

Protecting the environmental integrity and economic value of emission allowances and offsets are fundamental to achieving the American Clean Energy and Security Act's broad economic, energy, national security, environmental, and health objectives and requirements. Consistent with this broad set of objectives and requirements, "the zone of interests to be protected or regulated" by the Act is broad and inclusive. *See, e.g., Ass'n of Data Processing Serv. Orgs., Inc. v. Camp*, 397 U.S. 150, 153–56 (1970). For the Act to serve its purposes, the "zone of interests" under this Act includes, among others, persons with economic interests or competitive injury, such as holders of allowances, holders of offsets, and entities engaged in renewable energy, energy efficiency, or other advanced energy or pollution control technologies.

Section 722, Prohibition of Excess Emissions: Prohibits covered entities from emitting or having attributable greenhouse gases in excess of their allowable emissions level, which is determined by the number of emission allowances and offset credits they hold on the specified date. Electricity generators, refiners and importers of petroleum-based and other specified liquid fuels, fluorinated gas manufacturers, and emitters of nitrogen trifluoride are covered entities starting with emissions in 2012. Specified industrial sources are covered starting with emissions in 2014. Local distribution companies that deliver natural gas are covered starting with emissions in 2016.

Section 722(a) prohibits a covered entity from emitting greenhouse gases, or having attributable greenhouse gas emissions, in excess of its allowable emissions level in a given year. The allowable emissions level is determined by the number of allowances and offset credits a covered entity holds on April 1 (or such other date as set by the Administrator). Section 722(b) sets forth the number of emission allowances that each type of covered entity must hold to demonstrate compliance with title VII of the Clean Air Act.

Section 722(b)(9) provides that where carbon dioxide is used as an input in the production of algae-based fuels, the Administrator shall ensure that emission allowances are held either for the carbon dioxide used to grow the algae or for the carbon dioxide emitted from combustion of the fuel used to produce the algae, but not for both. For example, a power plant could capture its carbon dioxide and transfer it to an entity that uses the carbon dioxide in the production of algae-based transportation fuel. The carbon captured at the power plant would not be emitted at the plant's stack, but would ultimately be emitted to the atmosphere when the fuel is combusted. Under this scenario, and pursuant to section 722(b)(9), EPA could designate either the power plant or the fuel producer as the entity with compliance obligations under Section 722 (to require both would be double-counting).

Section 722(d) allows covered entities to use offset credits in lieu of allowances to demonstrate compliance for a portion of their emissions. Under this section, offset credits may be used to demonstrate compliance for a maximum of two billion tons of emissions from all covered entities combined. A large number of offset credits are projected to be less expensive than allowances for compliance in any given year. To meet the twin goals of ensuring that offset credits are used to demonstrate compliance for no more than two billion tons of emissions and that all covered entities have an equal opportunity to use this cheaper method of compliance, the bill distributes the ability to use offset credits on a pro rata basis among all covered entities. It does so by allowing each covered entity to use offset credits to meet a specified percentage of the allowances it must hold to demonstrate compliance. For each year, the percentage is calculated by dividing two billion by the sum of two billion plus the annual tonnage limit for that year. For example, in 2012, when the annual tonnage limit is 4.627 billion tons, the percentage would be 30.20 percent (2 divided by 6.627 times 100 percent). In that year, a source that emitted 100,000 tons of carbon dioxide equivalent could use offset credits to demonstrate compliance for 30,200 tons of emissions. In 2030, when the annual tonnage limit is 3.533 billion tons, the percentage would be 36.15 percent; and a source that

emitted 100,000 tons of carbon dioxide equivalent could use offset credits to demonstrate compliance for 36,150 tons of emissions. (Although these examples use percentages rounded to the second decimal point, the Administrator has discretion to round to a different decimal point.)

Section 722(d) also sets separate limits on the ability to use domestic and international offsets. System-wide, compliance can be demonstrated for up to one billion tons of emissions using domestic offsets and up to one billion tons of emissions using international offsets. This is accomplished by splitting each covered entity's ability to use offsets equally between international and domestic offsets. Using the example from above, the source in 2030 could offset up to 18,075 tons of its emissions with domestic offsets and up to the same amount with international offsets. However, to address the concern that there may be an insufficient supply of domestic offset credits in any given year to offset 1 billion tons of emissions, section 722(d)(1)(C) allows up to 1.5 billion tons of emissions to be offset with international credits under certain circumstances. This is accomplished by directing the Administrator to change the balance between the percentages of international and domestic offsets that may be used to demonstrate compliance in certain circumstances. If, for example, the Administrator determines that only 0.5 billion tons of domestic offset credits will be available in any given year, the Administrator shall allow a maximum of 1.5 billion tons of emissions to be offset through international projects. Using the 2030 example from above, this would mean that a covered entity with 100,000 tons of emissions could use international offsets to demonstrate compliance for $\frac{3}{4}$ of 36,150 tons of emissions (or 27,112 tons) and domestic offsets for $\frac{1}{4}$ (or 9,038 tons). In assessing the availability of domestic offset credits for purposes of determining whether to increase the percentage that can be met using international offsets, the Administrator shall only consider domestic offset credits that are projected to cost no more than the projected allowance price.

Section 722(d) requires that, starting with the 2018 compliance obligation, for every 4 tons of emissions that are offset with international reductions, 5 international offset credits must be used. This 5:4 turn-in ratio provides greenhouse gas reductions and environmental benefits in addition to those provided by the annual tonnage limits. Thus, using the 2030 example from above in the situation where the ability to offset emissions is split evenly between domestic and international offsets, to demonstrate compliance for 36,150 tons of its emissions, the covered entity could rely on 18,075 domestic offset credits and 22,594 international offset credits. (The Administrator has discretion to set appropriate rounding conventions for fractions of allowances.)

Section 722(l) explains that the year of a compliance obligation, as used in Title VII, refers to the year in which compliance is determined. Thus, for emissions in 2013, the year of the compliance obligation would be 2014.

Section 723, Penalty for Noncompliance: Establishes penalties for parties that fail to comply with the requirements of Title VII.

Section 724, Trading: Clarifies that the legislation does not restrict who can hold an allowance, nor does it restrict the purchase, sale, or other transaction involving allowances.

Section 725, Banking and Borrowing: Section 725 explains the extent to which allowances may be banked or borrowed from the future. Under section 725(a) and (b), allowances can be banked for use at any time in the future, subject to limitations set by the Administrator in a rulemaking pursuant to section 725(b). Offset credits, once issued by the Administrator pursuant to Part D of Title VII, may be banked for future use. Neither allowances nor offset credits expire unless retired, except pursuant to rules issued by the Administrator necessary to ensure the authenticity and integrity of allowances, credits, or the allowance tracking system. Under section 725(c)(1), a covered entity can “borrow” an allowance from one year in the future (i.e., an allowance with a vintage year one year greater than the calendar year in which the emissions occurred), providing that it is an allowance that the entity holds. Under section 725(c)(2), a covered entity can “borrow” an allowance that it holds from two to six years in the future (i.e., an allowance with a vintage year two to six years greater than the calendar year in which the emissions occurred, or a vintage year one to five years greater than the calendar year of the compliance obligation), provided that it is an allowance the entity holds and that the covered entity prepays a specified amount of interest. A covered entity can only demonstrate compliance for up to 15 percent of its emissions by using allowances borrowed pursuant to section 725(c)(2). This section addresses borrowing from the future, it does not address borrowing current or earlier year vintage allowances from a private entity (which is allowed).

As an example, under section 725, compliance for emissions in 2016 could be demonstrated by holding on April 1 of 2017 (or such later date as set by the Administrator), a sufficient number of:

- allowances with vintage years 2012 through 2016 (pursuant to section 725(a)); or
- 2017 vintage year allowances (under section 725(c)(1)).

In addition, compliance for up to 15 percent of emissions in 2016 could be demonstrated by holding allowances with vintage years 2018 through 2022 (pursuant to section 725(c)(2)).

Section 726, Strategic Reserve: Directs the Administrator to create a “strategic reserve” of emission allowances that will be available to help contain the costs of meeting the annual tonnage limits.

At the start of the program, the Administrator is required to fill the reserve with allowances that are taken from each year of the program in amounts specified in section 726(b)(1).

Every quarter, the Administrator shall auction a specified number of allowances from the reserve with a minimum reserve price specified in the bill. Proceeds from such auctions, if any, shall be used to refill the reserve. The Administrator shall accomplish this by using any such proceeds to purchase international offset credits for reduced deforestation. The Administrator shall then retire those offset credits and establish four new allowances (in addition to those established under section 721) for every five tons of offset credits retired. The Administrator shall then refill the strategic reserve to its original level by placing the newly-established allowances into the strategic reserve to the extent necessary to return the reserve to its original size. Once the reserve reaches its original size, if there are remaining newly-established allowances, the Administrator shall use such allowances to replace the allowances

that were originally taken (pursuant to section 726(b)(1)) from current or future vintage years. Newly-established allowances shall be retired if they are not needed to refill the reserve or to replace the allowances taken from current or future years. For example, if the Administrator sells 1,000,000 allowances in the strategic reserve auction in 2018, and prices are such that the Administrator uses the proceeds to buy 1,600,000 offset credits, the Administrator would then be required to retire those 1,600,000 offset credits and establish 1,280,000 newly-established allowances. The Administrator would be required to place 1,000,000 of the newly-established allowances into the strategic reserve. The Administrator would then take the remaining 600,000 newly-established allowances and use them to replace allowances that had been used to fill the strategic reserve initially. For example, the Administrator could designate all of the 280,000 allowances as vintage year 2018 and add them to auctions of 2018 (or later) allowances. If the Administrator had already returned to 2018 the same number of allowances that was taken from 2018 to fill the reserve, the Administrator could designate the allowances as 2019 vintage and auction them with the 2019 allowances. The Administrator has discretion to determine the best way to replace the allowances that were taken to fill the reserve, except that the Administrator cannot replace allowances that were taken from years that have already ended (e.g., in 2018, the Administrator could not replace allowances that were taken from 2017 or earlier).

At the request of an international deforestation offset credit holder, the Administrator can auction such credits in a strategic reserve auction if specified criteria are met.

Section 727, Permits: Clarifies the obligations of stationary sources under the Clean Air Act's Title V operating permit program under the newly-established Title VII program.

Section 728, International Emission Allowances: Establishes criteria that must be met before allowances from foreign programs can be used for compliance by covered entities.

PART D—OFFSETS

Section 731, Offsets Integrity Advisory Board: Establishes an independent Offsets Integrity Advisory Board composed of scientists and others with relevant expertise. The Advisory Board is charged with providing recommendations to the Administrator on: the types of offset project types that should be listed by EPA as eligible; potential levels of scientific uncertainty associated with certain offset types; appropriate quantification or other methodologies; and other areas of the offsets and deforestation provisions in the draft. The Board is also charged with conducting a regular review of all relevant areas.

Section 732, Establishment of Offsets Program: Directs the EPA Administrator to establish an offsets program and requires that regulations ensure offsets are verifiable, additional, and permanent.

Section 733, Eligible Project Types: Requires the Administrator to establish a list of offset project types that are eligible under the program, taking into account the recommendations of the Offsets Integrity Advisory Board. Provides guidelines for establishing and updating the list.

In implementing this provision, the Committee expects the Administrator to fully evaluate each of the following categories of activities for potential inclusion as eligible offset project types:

(1) agricultural, grassland, and rangeland sequestration and management practices, including—

(A) altered tillage practices;

(B) winter cover cropping, diversified rotations and other means to increase biomass returned to soil in lieu of planting followed by fallowing;

(C) conversion of cropland to rangeland or grassland, on the condition that the land has been in nonforest use for at least 10 years before the date of initiation of the project;

(D) reduction of nitrogen use or increase in nitrogen use efficiency;

(E) reduction in the frequency and duration of flooding of rice paddies;

(F) reduction in carbon emissions from organic soils;

(G) reduction in greenhouse gas emissions from manure and effluent; and

(H) reduction in greenhouse gas emissions due to changes in animal management practices, including dietary modifications;

(2) changes in carbon stocks attributed to land use change and forestry activities, including—

(A) afforestation or reforestation of acreage not forested as of January 1, 2007;

(B) forest management resulting in an increase in forest carbon stores including but not limited to harvested wood products;

(C) management of peatland or wetland;

(D) conservation of grassland and forested land;

(E) improved forest management, including accounting for carbon stored in wood products;

(F) reduced deforestation or avoided forest conversion;

(G) urban tree-planting and maintenance;

(H) agroforestry; and

(I) adaptation of plant traits or new technologies that increase sequestration by forests;

(3) manure management and disposal, including—

(A) waste aeration; and

(B) biogas capture and combustion; and

(4) non-agriculture and forestry project types, including—

(A) recycling, reuse, and waste minimization;

(B) methane collection and combustion projects at mines;

(C) methane collection and combustion projects at landfills;

(D) methane collection and combustion projects at natural gas systems;

(E) projects to reduce emissions from municipal or industrial wastewater treatment systems;

(F) projects that capture and geologically sequester uncapped greenhouse gas emissions with or without enhanced oil or methane recovery in active or depleted oil, carbon dioxide, or natural gas reservoirs; and

(G) projects to capture and destroy or avoid emissions of greenhouse gases from industrial sources for which entities do

not have compliance obligations under section 722 or other provisions of Title III.

In considering these potential project types, the Administrator must take into account recommendations of the Offsets Integrity Advisory Board.

The Committee expects the Administrator to issue an initial list of offset project types and their associated methodologies under section 734 as expeditiously as practicable, but in no case later than one year from the date of enactment. The Administrator should add additional project types, along with their associated methodologies, to the list as expeditiously as practicable, but in no case later than two years from the date of enactment. In developing baselines, measurement, and monitoring methodologies for a broad range of offset project types as quickly as possible, EPA should build on its experience in programs such as Natural Gas STAR, Climate Leaders, and the Landfill Methane Outreach Program. The Committee understands that EPA is already working with USDA and DOE on the AgSTAR program to encourage the use of methane recovery from manure digesters and is working on afforestation, reforestation, and forest management protocols under the Climate Leaders program.

The Committee strongly encourages the Administrator to consult closely with the Secretary of Agriculture on all elements of the offsets program related to agricultural and forestry practices.

Section 734, Requirements for Offset Projects: Section 734(a) requires that for each offset project type, the Administrator establish standardized methodologies for determining additionality; establishing activity baselines; measuring performance; accounting for and mitigating potential leakage. It is the Committee's intent that the Administrator, in establishing standardized methodologies for determining additionality, may adopt an approach based on performance standards. Section 734(b) requires that for each offsets project type the Administrator establish requirements to account for and address reversals from offset projects.

Sections 735, Approval of Offset Projects: Establishes procedures to approve offset projects. It is the expectation of the Committee that the requirements for standardized methodologies under section 734 will result in a simple and efficient approval process.

Section 736, Verification of Offset Projects: Directs the Administrator to establish requirements for the verification of offset project performance, and requires that verification reports be prepared by accredited third-party verifiers.

Section 737, Issuance of Offset Credits: Establishes procedures for the issuance of offset credits and directs the Administrator to issue offset credits only if the emissions reduction or sequestration has already occurred and other specified conditions are met.

Section 738, Audits: Requires the Administrator to conduct, on an on-going basis, random audits of offset projects, offset credits, and practices of third-party verifiers.

Section 739, Program Review and Revision: Requires the periodic evaluation and updating of specified areas and components of the offsets program.

Section 740, Early Offset Supply: To ensure a supply of offset credits in the early years of the program, allows for the issuance of offset credits for offsets from programs that meet specified cri-

teria. Such credits may only be issued for a limited timeframe and only for reductions achieved for a specified time period.

Section 741, Environmental Considerations: Provides requirements for additional environmental considerations for forestry and other land management-related projects.

Section 742, Trading: Provides that the trading provisions applicable to allowances are also applicable to offset credits.

Section 743, International Offset Credits: Allows the Administrator to issue international offset credits for activities that take place in developing countries. Requires that all international offset credits meet the criteria established for all offsets under sections 732–742, as well as the requirements specific to international offsets established under section 743. In addition, requires that the United States be a party to a bilateral or multilateral agreement or arrangement with the country where an offset activity would take place before any international offset credits can be issued.

Subsections 743(c), (d) and (e) provide additional specifications for three potential categories of international offset credits that are distinct from the issuance of international offset credits for international offset project types listed under section 733. Subsection 743(c) requires the Administrator, in consultation with the Secretary of State, to identify sectors in specific countries for which the issuance of international offset credits on a sector-wide, rather than project-specific, basis is appropriate.

Subsection 743(d) Establishes the terms under which the Administrator may issue international offset credits in exchange for other international instruments. These include a requirement that the Administrator has determined that the issuing international body has implemented substantive and procedural requirements for the relevant project type that provide equal or greater assurance of environmental integrity as the requirements established under Part D.

Subsection 743(e) establishes procedures and requirements regarding the issuance of international offset credits for activities that reduce deforestation. For major emitting nations, international offset credits may only be issued for national-scale activities, or for state or province-level activities in states or provinces that would themselves be considered major emitters. Smaller-scale offset projects are only allowed in countries that generate less than 1 percent of global greenhouse gas emissions as well as less than 3 percent of global forest sector and land use change emissions. After an initial period, all countries must transition to national baselines to continue generating credits.

PART E—SUPPLEMENTAL EMISSIONS REDUCTIONS FROM REDUCED DEFORESTATION

Section 751–752, Definitions and Findings: Defines forest carbon activities and finds that land use change, primarily deforestation, accounts for roughly 20 percent of global greenhouse gas emissions.

Section 753, Supplemental Emissions Reductions through Reduced Deforestation: Directs the Administrator of EPA, in consultation with the Administrator of the U.S. Agency for International Development (USAID), to establish a program to build capacity in developing countries to reduce emissions from deforestation (including preparation to participate in international markets for de-

forestation reduction offset credits), to achieve emissions reductions in addition to those achieved under the domestic emissions limit, and to protect intact forest from any shifts in land use as a result of reduced deforestation in other areas. By building capacity and providing powerful incentives to develop national efforts to reduce deforestation, the Committee intends that this program will both achieve significant reductions in emissions from deforestation (more than 6 billion metric tons of emissions) and allow many forest nations to participate in carbon markets, which will expand the supply of available offset credits.

Section 754, Requirements for International Deforestation Reduction Program: Directs the Administrators of EPA and USAID to support a broad range of activities to reduce deforestation, build capacity to measure, monitor and enforce reductions in deforestation generate for sale deforestation reduction offset credits for sale, and reduce the leakage of emissions. Activities supported through this program must be environmentally sound and should protect the rights of indigenous peoples and local communities. Support for emissions reductions must ensure that countries are transitioning to nationwide accounting of reduced deforestation.

Section 755, Reports and Reviews: Directs the Administrators of EPA and USAID to report annually to Congress on progress in reducing deforestation through this program and perform a review of the program every four years.

Section 756, Legal Effect of Part: Clarifies that this program does not supersede or limit any other federal or international law.

Section 312, Definitions

Section 700, Definitions: Defines key terms for Titles VII and VIII of the Clean Air Act.

Section 700(13)(B) defines one type of covered entity as “any stationary source that produces . . . petroleum-based or coal-based liquid fuel, petroleum coke, or natural gas liquid.” Because there are multiple steps in the production of natural gas liquids, additional language on natural gas liquid regulation is included elsewhere in Title III to specify the covered entity with respect to natural gas liquid production or importation.

The term “natural gas liquid” is defined in section 700(36) to mean “ethane, butane, isobutane, natural gasoline and propane which is ready for commercial sale or use.” The Committee’s intent in including the phrase “ready for commercial sale or use” in the definition is to indicate that the point of regulation for natural gas liquids is at the point of fractionation. This step in the production of natural gas liquids, where a mixture of multiple natural gas liquids is separated (fractionated) into its constituent parts, occurs after the separation of natural gas liquids from natural gas (often done by natural gas processing facilities), but prior to the sale or transfer of the individual natural gas liquids to the petrochemical, refining, or propane sectors. Some natural gas processing plants also fractionate; in other cases natural gas processing facilities are separate from fractionating facilities, and are owned by different entities.

The owner or operator of the covered entity that produces or imports natural gas liquids under section 700(13)(B) in some cases will own the natural gas liquids, but in other cases may not. Sec-

tion 722(b)(12) requires that in situations where the covered entity described in section 700(13)(B) does not take ownership of the liquids, the owner of the liquids shall be the entity with compliance obligations under section 722, section 723, and other relevant sections of the title.

Section 700(45) defines the terms “sequestered” and “sequestration” to mean “the separation, isolation, or removal of greenhouse gases from the atmosphere, as determined by the Administrator. The terms include biological, geologic, and mineral sequestration, but do not include ocean fertilization techniques.” The Committee recognizes that new sequestration technologies that do not exist today may develop in the future, and the Committee intends the Administrator to have discretion to define the types of sequestration technologies or processes that are appropriate to include within the definition, in light of the purposes of the Act.

SUBTITLE B—DISPOSITION OF ALLOWANCES

Section 321, Disposition of Allowances for Global Warming Pollution Reduction Program: Provides for emission allowances to be distributed for three primary goals: to protect consumers from energy price increases, to assist industry in the transition to a clean energy, and to spur energy efficiency and the deployment of clean energy technology. Also allocates allowances to prevent deforestation and support national and international adaptation efforts and for other purposes.

PART H—DISPOSITION OF ALLOWANCES

Section 781, Allocation of Allowances for Supplemental Reductions: Directs the Administrator to allocate allowances for the program under part E to achieve supplemental emissions reductions from reduced deforestation. Allocates 5 percent of allowances for the years 2012–2025, 3 percent for 2026–2030, and 2 percent for 2031–2050.

Section 782, Allocation of Emission Allowances: Provides for allocation of allowances to electricity consumers; natural gas consumers; home heating oil and propane consumers; low-income consumers; trade-vulnerable industries; investment in carbon capture and sequestration technologies; investment in energy efficiency and renewable energy; Clean Energy Innovation Centers; clean vehicle technology; domestic fuel production; workers; domestic, wildlife, and natural resources adaptation; international adaptation; international clean technology transfer; deficit reduction; and consumer refunds.

Section 783, Electricity Consumers: Directs the Administrator on how to distribute the approximately 30 percent of allowances allocated for the benefit of consumers to local electricity distribution companies, whose retail rates are regulated by states or other entities. Directs the Administrator on how to distribute the approximately 5 percent of allowances for merchant coal generators and certain generators with long-term power purchase agreements.

Section 784, Natural Gas Consumers: Directs the Administrator on how to distribute the approximately 9 percent allocated for the benefit of consumers to local natural gas distribution companies, whose retail rates are regulated by states or other entities.

Section 785, Home Heating Oil and Propane Consumers: Directs the Administrator on how to distribute the approximately 1.5 percent of allowances to states for programs to benefit residential and commercial users of home heating oil and propane.

Section 787, Allocations to Refineries: Directs the Administrator on how to distribute the approximately 2 percent of allowances to domestic refiners.

Section 786–788 [Reserved]

Section 789, Climate Change Consumer Refunds: Directs the Secretary of the Treasury to use proceeds from the sales of specified 2026 and later year allowances to provide rebates to consumers.

Section 790, Exchange for State-Issued Allowances: Provides for fair compensation and exchange of allowances issued by the State of California, the Regional Greenhouse Gas Initiative and the Western Climate Initiative prior to commencement of federal program.

Section 791, Auction Procedures: Establishes single-round, sealed-bid, uniform-price auction procedures, which may be modified by the Administrator.

Section 792, Auctioning Allowances for Other Entities: Establishes rules by which the Administrator may auction allowances on behalf of other entities.

Section 793, Establishment of Funds: Establishes the Strategic Reserve Fund and the Climate Change Consumer Rebate Fund in the U.S. Treasury.

Section 794, Oversight of Allocations: Requires the Comptroller General to prepare biannual reviews of the programs administered by the Federal Government that distribute emission allowances or funds from Federal auctions of allowances.

SUBTITLE C—ADDITIONAL GREENHOUSE GAS STANDARDS

Section 331, Greenhouse Gas Standards: Establishes Title VIII of the Clean Air Act to achieve additional greenhouse gas reductions outside of Title VII.

Title VIII—ADDITIONAL GREENHOUSE GAS STANDARDS

SECTION 801, DEFINITIONS

PART A—STATIONARY SOURCE STANDARDS

Section 811, Standards of Performance: Section 811 directs the Administrator to establish minimum standards of performance under section 111 of the Clean Air Act as an means of achieving reductions of greenhouse gas emissions from certain stationary sources of air pollution not subject to title III of the Clean Air Act.

When authorizing the Administrator to consider greenhouse gas emissions as “nonair quality health and environmental impacts” under section 811(b), it is the Committee’s intent to allow the Administrator to require controls on non-greenhouse gases that maximize greenhouse gas reduction benefits and to allow, but not require, the Administrator to limit controls on other pollutants that interfere significantly with greenhouse gas control effectiveness. Thus where additional reductions in emissions of non-greenhouse gases resulting from the use of certain technologies may be relatively small, while associated energy penalties may be significant,

the Administrator would have the discretion not to require such controls. However, any such decisions must be wholly consistent with other health and welfare considerations; where these considerations associated with other non-greenhouse gas pollutants are found to outweigh impacts on greenhouse gas emissions, the Administrator is permitted to require further reductions of those pollutants notwithstanding resulting energy penalties or greenhouse gas emissions impacts.

Section 811(c)(2) allows the Administrator to establish work practice standards without regard to any determination of the feasibility of other forms of emissions control that would otherwise be required under section 111(h) of the Clean Air Act. Congress intends to allow the Administrator to require improvements in process or energy efficiency that would reduce greenhouse gas emissions directly or indirectly without first having to find that other forms of capture or control are infeasible. The Administrator is also allowed to require efficiency improvements in lieu of capture or control technologies that exceed the bill's cost limitations and may also require such energy efficiency improvements in addition to controls that meet the cost limiting criteria.

The cost-containment provisions provided in section 811(c)(3) are intended to keep the costs of requirements for uncapped sources roughly in line with or below the costs of requirements for those of capped sources when viewed on a source category basis. That is, so long as costs are acceptable when viewed on average for the source category, the provisions do not provide a bar to enforcement of performance standards on any individual source where the cost of compliance may exceed the projected price of allowances during the applicable period. The Administrator's analysis of selected technologies must reflect a reasonable expectation that costs will not exceed projected allowance prices, but is not required to provide absolute certainty, nor shall actual costs in any individual case provide a basis for exemption from any standards, as noted above.

Under section 811(a), the Administrator may list under section 111(b) the source categories identified in the inventory without making an endangerment finding. The inventory called for in this subsection is intended to identify the specific source categories that meet the specific criteria identified by Congress, and Congress has determined that the Administrator must establish standards of performance for greenhouse gas emissions from these categories. Therefore, the Administrator may list new source categories under section 111(b), without making the required endangerment finding, as necessary to ensure that every source category on the inventory is properly listed under 111(b). Such listings may be necessary, for example, if the category is not already listed under section 111(b) or if the scope of the source category identified in the inventory does not correspond with the scope of the source category currently listed under section 111(b).

PART C—EXEMPTIONS FROM OTHER PROGRAMS

Section 831, Criteria Pollutants: Provides that greenhouse gases may not be added to the list of criteria air pollutants on the basis of their effect on climate change.

Section 832, International Air Pollution: Provides that section 115 of the Clean Air Act shall not apply to an air pollutant with respect to that pollutant's contribution to global warming.

Section 833, Hazardous Air Pollutants: Provides that greenhouse gases may not be listed as hazardous air pollutants on the basis of their effect on climate change.

Section 834, New Source Review: Provides that New Source Review shall not apply to a major emitting facility that is initially permitted or modified after January 1, 2009, on the basis of its emissions of any greenhouse gases. This language is intended to make clear on a going forward basis that New Source Review does not apply to greenhouse gases. It is not an expression of congressional intent with respect to the application of New Source Review to greenhouse gases prior to that date.

Section 835, Title V Permits: Provides that greenhouse gases shall not be considered when determining whether a stationary source is required to operate pursuant to a permit under Title V. Where sources are required to have a Title V permit due to the sources' emissions of any pollutant that is regulated for any reason other than its effect on global climate change, this section does not alter the applicability of title V for such sources, nor does it provide any exclusion from any of the requirements of Title V (including but not limited to reporting requirements and certification requirements, as they would apply to such sources). Any applicable requirements of the Safe Climate Act would be considered applicable requirements of the Clean Air Act and must be incorporated into Title V permits for such sources. Additional provisions governing how the requirements of title VII of this bill are to be addressed in title V permits for such sources may be found in section 727.

Section 332, HFC Regulation: Section 332 amends Title VI of the Clean Air Act by adding a new section 619 to phase down the consumption of hydrofluorocarbons (HFCs), many of which are extremely potent greenhouse gases, under a separate limit and reduction schedule. Using a market-based regulatory approach similar to the one that continues to be successful in addressing substances that deplete the stratospheric ozone layer, the bill requires HFC consumption to be phased-down to 15 percent of the baseline by 2032. Allowances would be distributed through a combination of annual auctions and non-auction sales.

This new section 619 includes numerous references to existing sections of Title VI. Except as otherwise provided in this section, EPA is expected to treat class II, group II substances similarly to the way in which it has treated ozone depleting substances in implementing and interpreting these existing sections of Title VI.

In section 619, production of class II, group II substances refers to production of such substances in the United States. Importation of class II, group II substances refers to the importation of such substances in bulk into the United States. Importation of products containing any class II, group II substances refers to the importation of such products into the United States.

The bill provides for bidding limits in 2014 and beyond to be based in part on the highest number of allowances required to be held by the participant in the prior three years. The number of allowances actually held by a participant may be higher or lower than the number of allowances required to be held (if allowances

were banked or if destruction offset credits were used to meet a portion of the compliance obligation), but the number of allowances actually held by a participant will not be used in determining the bidding limits.

It is the intent of this section to provide a financial incentive for the recovery and destruction of chlorofluorocarbons (and potentially other ozone depleting substances that have been globally phased out of production under the Montreal Protocol). Generation of destruction offset credits through the destruction of CFCs (and potentially other ozone depleting substances) offers an additional path to meet compliance obligations under section 619(b). With the exception of offset credits issued under section 740, offsets generated pursuant to section 619(b)(9) may be used as offset credits under Title VII only if the Administrator extends their use to Title VII under section 619(b)(9)(E), pursuant to the requirements of Part D of Title VII, and based on the carbon dioxide equivalent value of the substance destroyed. In the event of such an extension, destruction offset credits for the destruction of a quantity of CFCs (or potentially other ozone depleting substances) may be issued under either Title VI or Title VII, but in no case may an offset credit be issued under both titles for the destruction of the same quantity of a substance.

The specific reporting provisions in section 619(n) do not preclude EPA's use of the general authority under section 114 to obtain information for the purpose of carrying out any provision of Title VI, including the provisions concerning class II, group II substances.

Section 332(c)(4) amends section 605(a) of the Clean Air Act to allow introduction into interstate commerce or use of HCFCs that are listed as acceptable for use as fire suppression agents for non-residential applications under section 612. The phrase "listed as acceptable for use" is intended to include substances listed as acceptable for use "subject to use conditions" or "subject to narrowed use limits" as well as those listed as acceptable without qualification.

Section 333, Black Carbon: Directs the Administrator to report on existing efforts to reduce domestic black carbon pollution and use existing authority to achieve further reductions. Directs the Administrator, in coordination with the Secretary of State, to report to Congress on current and potential future assistance to foreign nations to help reduce black carbon pollution.

Section 334, States: Preserves states' existing authority to adopt and enforce standards or limitations on air pollution under the Clean Air Act, including greenhouse gas emissions.

Section 335, State Programs: Bars states from implementing or enforcing a cap-and-trade program to control on greenhouse gas emissions covered by Title VII between the years 2012 to 2017, but allows regulation of such emissions by other means during this period.

Section 336, Enforcement: Provides that for petitions for review under the Clean Air Act, the court may remand an action of the Administrator without vacatur under specified circumstances. Requires the Administrator to take final action on a petition for reconsideration under the Clean Air Act within 150 days of receipt.

Section 337, Conforming Amendments: Provides for conforming amendments to Clean Air Act enforcement and administrative provisions to incorporate titles VII and VIII.

Section 338, Davis-Bacon Compliance: Requires that recipients of emission allowances or funding under this Act provide reasonable assurances that all laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by the Federal Government pursuant to this Act will be paid at least prevailing wages as determined by the Secretary of Labor in accordance with what is commonly known as the Davis-Bacon Act (subchapter IV of chapter 31 of title 40, United States Code). The provisions would not apply, however, to retrofitting of any residential building or of specified nonresidential buildings.

SUBTITLE D—CARBON MARKET ASSURANCE

Section 341, Carbon Market Assurance: Amends the Federal Power Act to provide for strict oversight and regulation of the new markets for emission allowances, offset credits, and Federal renewable electricity credits (RECs). Ensures market transparency and liquidity and allows trading in allowance, offset credit, and REC futures so that regulated entities can protect themselves against future cost increases and obtain the allowances or credits they need for compliance at a fair price. The Federal Energy Regulatory Commission is charged with regulating the cash market in allowances, offsets, and RECs. The President is empowered to delegate regulatory responsibility for the markets in derivatives if these instruments to an appropriate agency, based on the advice of an interagency working group. Protects market participants from speculation and market manipulation, by including default position limits of 10 percent on allowance, offset credit and REC derivatives and a default ban on over-the-counter trading of such derivatives, and other regulatory requirements for both the cash and derivatives markets.

SUBTITLE E—ADDITIONAL MARKET ASSURANCE

Sections 351 through 358: Amends the Commodity Exchange Act to provide greater oversight of energy commodity derivatives and credit default swaps. Establishes default Commodity Futures Trading Commission regulatory authority over and regulations of allowance derivative markets.

Section 359, Cease-and-desist authority: Amends the Natural Gas Act and Natural Gas Policy Act to grant the Federal Energy Regulatory Commission cease-and-desist authority to prevent violations of these Acts.

TITLE IV—TRANSITIONING TO A CLEAN ENERGY ECONOMY

SUBTITLE A—ENSURING REAL REDUCTIONS IN INDUSTRIAL EMISSIONS

Section 401, Ensuring Real Reductions in Industrial Emissions: Creates a program within Title VII of the Clean Air Act, as established by this Act, to ensure real reductions in industrial greenhouse gas emissions through emission allowance rebates and international reserve allowances.

Part F—Ensuring Real Reductions in Industrial Emissions

Section 761, Purposes: Outlines the purposes of Subtitle A and the additional purposes of Part 1 of Subtitle A. The purposes of

Subtitle A include: promoting a strong global effort to significantly reduce greenhouse gas emissions and preventing an increase in greenhouse gas emissions in foreign countries as a result of compliance costs incurred under title VII of the Clean Air Act, as added by ACES of 2009. The additional purposes of Part 1 include: compensating eligible domestic industrial sectors and subsectors for costs incurred under Title VII; limiting such compensation to amounts that meet the goals of the program; and rewarding innovation and facility-level investments in efficiency upgrades and performance improvements.

Section 762, International Negotiations: Finds that the purposes of this subtitle can be most effectively achieved through international agreements and states that it is the policy of the United States to work proactively under the UNFCCC and in other forums to establish binding agreements committing all major-emitting countries to contribute equitably to the reduction of global greenhouse gas emissions.

Section 763, Definitions: Provides relevant definitions.

Subpart 1—Emission Allowance Rebate Program

Section 764, 765, Eligible Industrial Sectors, Distribution of Emission Allowance Rebates: Establishes a program that rebates allowances to eligible industrial sectors and subsectors in an amount intended to compensate entities in those sectors for the costs they incur as a result of complying with the pollution limit established by Title VII.

Instructs the EPA Administrator to annually distribute rebates to the owners and operators of entities in eligible industrial sectors. The Administrator is required to determine which facilities should be eligible for rebates through a rule based on an assessment of economic factors, including (1) the energy or greenhouse gas intensity in a sector and (2) the trade intensity in such sectors. Sectors meeting the listed criteria for both factors would be deemed eligible to receive rebates.

Subsection (b)(3)(A) is designed to address an anomaly that arises when an industrial subsector meets the eligibility criteria of paragraph (2)(A), but its 6-digit NAICS code fails to meet the eligibility criteria. The result is that an otherwise eligible subsector does not presumptively qualify to receive emission allowance rebates. For example, the industrial subsector that manufactures ceramic substrates for mobile source emissions control equipment may fall within a NAICS code that includes manufacturers of a wide variety of products, and the entire 6-digit NAICS code may not presumptively be eligible for emission allowance rebates, even though the specific industrial subsector would, if it was classified in its own NAICS code, presumptively qualify for rebates. Recognizing this anomaly, the Committee included Subsection (b)(3)(A) to give firms in such subsectors an opportunity to petition the Administrator for relief based upon evidence demonstrating that the industrial subsector meets the criteria of paragraph (2)(A) to be eligible to receive emission allowance rebates.

Rebates are distributed to eligible facilities on a product output basis, with compensation provided for both direct and indirect compliance costs. For direct compliance costs, allowance distribution is calculated by multiplying a facility's product output by the sector

average tonnage of greenhouse gas emissions per unit of product output. For indirect costs passed on by electric utilities, allowance distribution is calculated by multiplying a covered or uncovered facility's product output (1) by the "emissions intensity" of each facility's electric power supplier and (2) by the sector average electricity use per unit of product output.

Subpart 2—International Reserve Allowance Program

Section 766, International Reserve Allowance Program: Establishes an international reserve allowance program, which may be implemented by the President beginning in 2025 pursuant to a determination under Part 3.

Subpart 3—Presidential Determination

Section 767, Presidential Reports and Determinations: Requires the President to submit a report to Congress no later than January 1, 2018, regarding the effectiveness of the distribution of emission allowance rebates under Part 1 in mitigating the risk of increased greenhouse gas emissions in foreign countries resulting from compliance costs incurred under title VII.

Requires the President to make a determination, no later than June 30, 2022, and every four years thereafter, for each sector eligible for rebates under Part 1, of whether more than 70 percent of global output of that sector is produced in countries that meet at least one of the following criteria: (1) party to an international treaty to which the U.S. is a party that includes a nationally enforceable emissions reduction commitment that is at least as stringent as that of the U.S.; (2) party to an international sectoral agreement for that sector to which the U.S. is a party; (3) energy or greenhouse gas intensity for that sector that is equal or less than that of the U.S.; or (4) implemented emissions reduction policies that together impose a cost on that sector that is at least 60 percent of the cost of complying with Title VII for that sector in the United States.

If the President determines that less than 70 percent of global output of a sector is produced in countries that meet one or more of the above criteria, then the President shall continue emission allowance rebate program under Part 1 or implement the International Reserve Allowance Program under Part 2 or a combination of the two for that sector. In the absence of such a determination, the emission allowance rebates for entities in the sector will decline by 10 percent per year.

SUBTITLE B—GREEN JOBS AND WORKER TRANSITION

Part 1—Green Jobs

Section 421, Clean Energy Curriculum Development Grants: Amends the Carl. D. Perkins Career and Technical Education Act of 2006 to authorize the Secretary of Education to award grants to universities and colleges to develop programs of study that prepare students for careers in renewable energy, energy efficiency, and other forms of global warming mitigation. These grants are peer reviewed by experts with relevant experience in the areas being considered for funding.

Section 422, Increased Funding for Energy Worker Training Program: Increases the authorization for the Green Jobs Act, authorized in the Energy Independence and Security Act, from \$125 million to \$150 million.

Part 2—Climate Change Worker Adjustment Assistance

Section 425–427, Petitions, Eligibility Requirements, and Determinations; Program Benefits; General Provisions: Establishes a program pursuant to which any worker displaced as a result of the Title VII of the Clean Air Act would be entitled to 156 weeks of income supplement, 80 percent of their monthly health care premium, up to \$1,500 for job search assistance, up to \$1,500 for moving assistance, and additional employment services for skills assessment, job counseling, training, and other services. Payments under the program cannot exceed the proceeds from the auction of allowances set aside for this purpose.

SUBTITLE C—CONSUMER ASSISTANCE

Section 431, Energy Tax Credit: In the event of any reduced purchasing power as a result of Title VII of the Clean Air Act, provides tax credits to the lowest-income households to compensate for such losses.

Section 432, Energy Refund Program for Low-Income Consumers: Directs the EPA Administrator to administer an “Energy Refund Program” to provide monthly cash energy refunds to low-income individuals to compensate for any reduced purchasing power resulting from Title VII of this Act. Provides that energy refunds shall not be considered taxable income.

The cost of this subtitle—including both the energy refund program and the refundable tax credit—are offset by the set aside of the proceeds from the auction sale of 15 percent of the emission allowances. The proceeds from these allowances are deposited into the U.S. Treasury. The amount of assistance provided is not, however, limited by the auction proceeds deposited into the Treasury.

SUBTITLE D—EXPORTING CLEAN TECHNOLOGY

Sections 441–443, Findings and Purposes, Definitions, Governance: States that the purpose of this subtitle is to provide U.S. resources to encourage widespread deployment of clean technologies to developing countries. Establishes a Clean Technology Account administered by the State Department in consultation with an interagency group. The Account will supplement and not supplant other federal funding.

Section 444, Determination of Eligible Countries: Generally, only developing countries that have ratified an international treaty or agreement or have undertaken nationally appropriate mitigation activities achieving substantial greenhouse gas reductions are eligible for bilateral assistance. Least developed countries may use assistance to build capacity toward meeting eligibility criteria.

Sections 445, Qualifying Activities: Eligible projects must achieve substantial greenhouse gas reductions that are substantial, measurable, reportable, and verifiable. Eligible activities include deployment of carbon capture and storage, renewable electricity, efficiency projects, deployment of low-emissions technology, transpor-

tation reductions, black carbon reductions, and capacity building activities.

Section 446, Assistance: The Secretary of State is authorized to provide assistance through the distribution of allowances bilaterally, through an international fund, or through a multilateral institution pursuant to the UNFCCC. Preference is given to projects that promise to achieve large-scale greenhouse gas reductions, may catalyze widespread deployment of clean technology, build institutional capacity, and leverage private resources. To the extent practicable, assistance should reinforce other foreign policy goals.

SUBTITLE E—ADAPTING TO CLIMATE CHANGE

Part 1—Domestic Adaptation

Subpart A—National Climate Change Adaptation Program

Section 451, National Climate Change Adaptation Program. Establishes a climate change adaptation program within the U.S. Global Change Research Program.

Section 452, Climate Services. Establishes a National Climate Service within NOAA to develop climate information, data, forecasts, and warnings at national and regional scales and to distribute information on climate impacts to state and local decision-makers.

Section 453, State Programs to Build Resilience to Climate Change Impacts: Distributes emission allowances to states for implementation of adaptation projects, programs, or measures to build resilience to the impacts of climate change, contingent on the completion of an approved State Adaptation Plan. Eligible projects include, but are not limited to, those designed to respond to extreme weather events such as flooding or hurricanes, changes in water availability, heat waves, sea level rise, ecosystem disruption, and air pollution.

Subpart B—Public Health and Climate Change

Sections 461. Sense of Congress on Public Health and Climate Change: States that it is the sense of Congress that the federal government should take all means and measures to prepare for and respond to the public health impacts of climate change.

Section 462, Relationship to Other Laws: Clarifies that nothing in the subpart limits authorities or responsibilities conferred by other law.

Section 463. National Strategic Action Plan: Requires the Secretary of Health and Human Services to prepare a strategic plan to assist health professionals in preparing for and responding to the impacts of climate change on public health with disease surveillance, research, communications, education, and training programs. Authorizes the Secretary to implement these programs using authorities under this subpart and other federal laws.

Sections 464–465, Advisory Board, Reports: Establishes a science advisory board to advise the Secretary on science related to the health effects of climate change. Requires a needs assessment for health effects of climate change and periodic reports on scientific developments and recommendations for updating the national strategy.

Sections 466–467. Definitions, Climate Change Health Protection and Promotion Fund: Establishes a fund in the Treasury for carrying out this subpart. Funding will be distributed by HHS but may be made available to other agencies and state and local governments. Funding will supplement, not replace other public health funding.

Subpart C—Natural Resource Adaptation

Section 471–475, Purposes, Policy, Definitions, CEQ, Resources Adaptation Panel: States that it is the policy of the federal government to use all practicable means and measures to assist natural resources to adapt to climate change. Establishes a Natural Resources Climate Change Adaptation Panel, chaired by the White House Council on Environmental Quality, as a forum for inter-agency coordination on natural resources adaptation.

Section 476, Natural Resources Climate Change Adaptation Strategy: Requires the Panel to develop a strategy for making natural resources more resilient to the impacts of climate change and ocean acidification. The strategy must assess likely impacts to natural resources, strategies for helping wildlife adapt, and specific actions that federal agencies should take.

Section 477, Natural Resources Adaptation Science and Information: Establishes a process through NOAA and the U.S. Geological Survey National Global Warming and Wildlife Science Center to provide technical assistance, conduct research, and furnish decision tools, monitoring, and strategies for adaptation. Requires a survey of resources that are likely to be adversely affected and the establishment of a Science Advisory Board to advise the science program and recommend research priorities.

Section 478, Federal Natural Resource Agency Adaptation Plans: Requires federal agencies to develop natural resource adaptation plans, consistent with the National Strategy, including prioritized goals and a schedule for implementation of adaptation programs within their respective jurisdictions.

Section 479, State Natural Resources Adaptation Plans: Requires states to develop Natural Resources Adaptation Plans as a condition for receiving funds under the programs in this subtitle.

Section 480, Natural Resources Climate Change Adaptation Fund: Establishes a Natural Resources Climate Change Adaptation Fund. Allowances devoted to Natural Resources Adaptation are distributed to the States—84.4 percent to State wildlife agencies and 15.6 percent to State coastal agencies. Funds placed in the Natural Resources Climate Change Adaptation Fund are distributed to Federal agencies: 27.6 percent to the Department of the Interior (DOI) for endangered species, bird, and Fish and Wildlife Service programs, wildlife refuges, and the Bureau of Reclamation; 8.1 percent to DOI for cooperative grant programs; 4.9 percent to DOI for tribal programs; 19.5 percent to the Land and Water Conservation Fund ($\frac{1}{6}$ to DOI for competitive grants, $\frac{1}{3}$ for land acquisition under § 1A7 of the Land and Water Conservation Fund Act, $\frac{1}{3}$ to the Department of Agriculture for land acquisition, $\frac{1}{6}$ to USDA for the Forestry Assistance Act); 5 percent to USDA for the Forest Service; 12.2 percent to EPA for freshwater ecosystems; 8.1 percent to the Army Corps of Engineers for freshwater ecosystems; and 11.5 percent to NOAA for coastal and marine ecosystems. All funds author-

ized must be used for adaptation activities, consistent with federal plans.

Section 481, National Wildlife Habitat and Corridors Information Program: Establishes a program in the Department of the Interior to support States and tribes in the development of a GIS database of fish and wildlife habitat corridors, and to facilitate the use of database tools in wildlife management programs.

Section 482, Additional Provisions Regarding Indian Tribes: Clarifies that nothing in this subpart amends federal trust responsibilities to tribes, exempts information on Indian tribe sacred sites or cultural activities from FOIA, and clarifies that the Department of the Interior may apply the provisions of the Indian Self-Determination and Education Assistance Act as appropriate.

Part 2—International Climate Change Adaptation Program

Sections 491–493, Findings and Purposes, Definitions, International Climate Change Adaptation Program: Establishes an International Climate Change Adaptation Program within USAID to provide U.S. assistance to the most vulnerable developing countries for adaptation to climate change. Resources allocated to this program will supplement and not replace other international adaptation assistance.

Section 494, Distribution of Allowances: The Administrator of USAID shall distribute allowances bilaterally and through multilateral funds or institutions pursuant to the UNFCCC. Multilateral institutions must receive between 40 and 60 percent of allowances; multilateral fund eligibility is contingent on developing world participation, transparency requirements, and community engagement.

Sections 495, Bilateral Assistance. The Administrator of USAID shall distribute allowances through public or private organizations to provide assistance to the most vulnerable developing countries for adaptation efforts. The Administrator must prioritize assistance based on vulnerability to climate change. The bilateral assistance program must ensure community engagement and consultation, and will seek to align broader U.S. foreign policy goals with its assistance. The program may use its assistance to support projects, policies, or programs, or to build program capacity in developing countries.

Trade and Climate Change

**Report of the
Trade and Environment Policy Advisory Committee (TEPAC)**

May 19, 2009

Trade and Climate Change

According to the Intergovernmental Panel on climate change, the earth's climate is changing at an unprecedented rate that is likely to continue over the following decades.¹ Current climate models indicate that hot extreme temperatures, heat waves, hurricanes and typhoons are likely to become more frequent and intense.² Increases in the amount of precipitation are highly likely in high latitudes, while decreases are likely in most subtropical land regions.³ One third of all species may be in danger of extinction this century due to climate change.⁴

Increasing emissions of carbon dioxide are harming natural systems such as jungles, forests, tundra, wetlands and oceans. For example, the oceans absorb roughly 30 percent of global carbon dioxide emissions and 80 percent of the heat generated by increased levels of greenhouse gases in the atmosphere. The oceans are also becoming more acidic, threatening marine organisms like hard corals, clams and crabs that create calcium carbonate shells and skeletons.⁵ Rising temperatures are already associated with observed changes in marine biological systems, which could threaten the survival of marine species.

This paper offers the United States Trade Representative (USTR) and Environmental Protection Agency (EPA) the views of the Trade and Environment Policy Advisory Committee (TEPAC) regarding areas where trade and climate change policy and practice will intersect in the immediate future. TEPAC has not addressed the science behind climate change, the wisdom behind any specific attempts to change it, or the relative responsibilities of various actors in making those changes. The Committee merely recognizes the increasing efforts of governments and individuals across the globe to implement climate change policies and believes it useful to describe its views as to how those efforts will impact U.S. trade policy and practice.

TEPAC believes these impacts will be most clearly seen in:

1. The development of a post-2012 global climate regime which may include measures and commitments that create tensions between trade and climate policies, such as guidelines for the imposition of border measures related to the product's composition and/or process of manufacture. It may also include measures and commitments that strengthen and encourage trade in cleaner technologies and products.

¹ IPCC 2007 Summary for policymakers. In *Climate change 2007: the physical science basis. Contribution of working group I to the fourth assessment report of the intergovernmental panel on climate change* (eds S. Solomon, D. Qin, M. Manning, Z. Chen & M. Marquis), pp. 1-18. Cambridge, U.K.: Cambridge University Press. Available at <http://www.ipcc.ch/ipccreports/ar4-wg1.htm>

² *Id.*

³ *Id.*

⁴ IPCC (2001b) *Summary for Policy Makers*. In: *Climate Change 2001: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change*.

⁵ *Acid Test: Can we save our oceans from CO₂?* Harrould-Kolieb, E. and J. Savitz (2008.) Oceana Inc.

2. Multilateral activities, possibly including (a) potential WTO litigation targeting trade measures taken in pursuit of climate change objectives, (b) efforts under the Doha Round to reduce or eliminate tariffs on environmental goods and services, and (c) initiatives that might be considered in the Doha Round to at least temporarily prevent the imposition of trade measures taken in pursuit of climate change objectives.
3. Trade provisions in climate change legislation being developed in the Congress.
4. NAFTA discussions on the implications of state and provincial laws and regulations (e.g., California's low-carbon fuel standards) that impact regional trade and investment, cooperation on policies to mitigate greenhouse gases (GHGs), and possible evolution of a NAFTA carbon regime.
5. Discussions with current FTA partners on including climate change initiatives on the agenda of environmental cooperation, and developing climate change objectives for new "super-regional" trade initiatives in the Western Hemisphere and Asia-Pacific region.

Given the complexity and sheer number of issues within each of these subjects, TEPAC has not attempted in this paper to parse or examine them in detail. TEPAC is happy to provide such analysis for any issue which would be of help to USTR or EPA and invites the Agencies to solicit TEPAC's detailed views on any such subject. As an example of the type of analysis TEPAC can provide, it has included in this paper, in part 6, an analysis of the climate change impacts to wildlife in particular, and to all species in general, as adaptation to climate change becomes necessary.

I. The Post-2012 Global Climate Change Regime

A. The Current Framework

With the expiration of the Kyoto Protocol's first commitment period in 2012, nations under the UN Framework Convention on Climate Change (UNFCCC) are attempting to reach agreement by December 2009 on a new framework to reduce global GHG emissions.

The interface between trade and climate change is well-established in the UNFCCC process. Both the UNFCCC and the Kyoto Protocol are founded on differentiated reduction commitments and obligations for countries, recognizing their different national circumstances and contributions to GHGs in the atmosphere. In other words, the UN treaty is fundamentally predicated on a "non-level playing field" and issues of equity and fairness make it likely that this feature will be maintained in the post-2012 framework.

Both the UNFCCC (which the U.S. has signed and ratified) and the Kyoto Protocol include language against unilateral trade measures.⁶ In recent UNFCCC Conferences of the Parties, parallel meetings have been held for trade officials to promote dialogue, encourage synergies and

⁶ UNFCCC, Article 3, paragraph 5 and Kyoto Protocol, Article 2, paragraph 3.

avoid potential conflicts between climate protection measures and trade rules and policies. Thus, collaborative options exist to address the trade and climate change interface that do not depend on unilateral and punitive trade measures.

B. Recent and Planned Discussions

In preparation for the 15th Conference of the Parties in Copenhagen in December 2009, 175 countries met recently in Bonn, Germany, to continue negotiations to define the post-2012 GHG regime. From the discussions and submissions, initial negotiating texts are expected to be ready for the next negotiating meeting in June 2009. Further negotiating sessions are planned in August, September, and November. Both at these meetings and in related meetings in the months after Copenhagen in the G8, Major Economies Forum and other processes, there are opportunities for the U.S. delegation to continue to emphasize the benefits of a well-designed, inclusive post-2012 framework that works with established trade rules to advance the necessary actions to avoid unilateral trade measures.

In the UNFCCC discussions, a number of issues related to the intersection of global warming issues and trade have arisen. (In countries considering domestic measures to reduce GHG emissions, these issues also have been the focus of discussions, debate, and proposals.) These issues provide potential opportunities and challenges. For example, the UNFCCC Experts Group on Technology Transfer has highlighted trade as among the enabling frameworks for facilitating technology diffusion. Section IV provides more detail on trade provisions in U.S. global warming legislative proposals.

C. The Kyoto Experience

The U.S. signed but did not ratify the Kyoto Protocol, with the U.S. Senate unanimously asserting that a major flaw in the Protocol was the exception to binding cuts in emissions of large developing countries that were experiencing rapid economic growth fueled by fossil-fuel energy.

Most countries that are party to the Protocol are not on track to meet the ambitious GHG reduction targets to which they committed. Those that are meeting the targets are mostly doing so because of circumstances that originated before the signing of the treaty (such as the reform of Eastern European industry in the early 1990s). Thus, the European Union's (EU's) emission-reduction targets were largely unfulfilled by the EU-15. According to the European Environment Agency's estimates in 2007, only two EU-15 countries – Sweden and the UK – will reach their reduction targets of 8 percent by 2012.

D. The Basic Approaches to GHG Reduction

Contemporaneous with the UNFCCC discussions, developed countries meanwhile are continuing to craft and implement their own domestic proposals to reduce fossil fuel emissions. The two

primary schemes being considered and implemented by these countries are cap-and-trade programs and carbon or energy taxes.⁷

At its essence, a carbon tax is exactly as it sounds – a duty levied on the GHGs “contained” in a product, both those emitted during the product’s production and transport to market. The product can be the front-end raw material - such as coal, petroleum or natural gas – or it can be a back-end finished good such as a refrigerator, shirt, or Tickle-Me-Elmo. Taxing front end raw materials is generally less complex since it is easier to identify the GHG emissions associated with the product. The most significant benefit of a carbon tax, as compared to the other regulatory mechanisms, is that the cost to industry is predictable. The quantity of GHG reductions that will result, however, is not.

Under a cap and trade scheme, the government establishes a set limit on GHG emissions. It then allocates allowances to industry so that the pre-established GHG limit cannot be exceeded (this is the “cap”). Allocation can either be free or at a price. Industry members can buy and sell their allowances to the extent they need more or fewer allowances (this is the “trade”). The most significant advantage of cap and trade, as compared to the other regulatory mechanisms, is that the degree of GHG reductions is clear. The cost to industry, however, is not.

A third alternative is an administrative regulatory approach such as what the United States currently uses now under the majority of the Clean Air Act – an action-forcing mandate that requires industry to do or to not do certain things or to cause certain effects. It is unlikely that GHG regulation will take this form since, under this approach, the cost may not be easily predictable and it would be administratively intense.

In all three situations, consumers would likely bear some cost of GHG reductions in the form of higher prices for gas, electricity, and oil. The extent of these costs is difficult to estimate, in part due to their comprehensive impact on society. Over time, substitution of cheaper inputs and products with a lower carbon footprint, along with development of new energy sources and more efficient production technologies should reduce costs to the economy and create new industries and employment in emerging fields.

E. Obstacles to a Global Agreement

If developing countries do not reduce their emissions the overall objective of reducing global GHG emissions will not be met. Moreover, there is a general belief that, if developed countries agree to substantial cuts in GHG emissions, and developing countries do not, the emissions-reducing countries may be at a competitive disadvantage for the following reasons:

- Certain industries that use substantial amounts of fossil fuels would face economic loss and reduced employment;
- Carbon-intensive domestic goods produced would be more costly vis-à-vis those produced in countries not agreeing to reduce emissions;

⁷ On a lesser scale, subsidies, efficiency standards and carbon labeling are also being contemplated and implemented.

- Exports of those goods – because of their higher costs – would drop, and imports would rise (except in countries whose economies were significantly weakened).

On the other hand, based on U.S. experience with the Clean Air Act and Clean Water Act, not all industries will be confronted with higher costs; some industries will find cost-effective GHG reduction technologies and some will not.

Another concern among countries with (or contemplating) GHG regulation is “leakage,” in which a carbon-restrictive regime in a country could lead carbon-intensive firms there to move production facilities or investment to other countries without carbon constraints.⁸ Such movement would also mean that global GHG emissions would not be reduced but merely move from countries with GHG regulations to those without.

Principally, but not exclusively, in the developed countries, policymakers also often raise a “fairness” argument, expressing the need for a “level playing field.” That is, how to find ways to “penalize” those countries that do not agree to significantly reduce their fossil-fuel emissions. These concerns do not arise solely between developed and developing countries; the same issues have been raised between the US and Canada, for instance. Developed countries have, however, committed to achieving coordinated emissions reduction targets at Copenhagen. Developing countries seek to avoid such commitments, asserting that developed countries have been the primary cause of climate change and have more resources to mitigate and adapt to it, but that the worst effects of climate change will be felt in developing countries. Because developing countries are not expected to undertake emissions reduction efforts comparable to those of developed countries, concerns regarding leakage are especially acute between developed and developing countries.

As a result, while countries wrestle with global warming proposals, many are looking at “equalization measures” - ways to prevent their own countries from being disadvantaged by these policies and prescriptions. On the other hand, the European Community has not activated border measures to mitigate leakage and believes that these are premature before the results of the December 2009 Copenhagen conference are known. The EU is concerned about trade retaliation and the difficulty of defending unilateral measures, but has retained border measures as part of its cap and trade “tool box” and may develop those measures if climate change negotiators fail to reach an agreement.⁹

The situation has been complicated by the depth of the current economic crisis, which has resulted in an observable increase in domestic protectionist measures. With the world economic downturn and massive job losses, international trade and globalization have been targeted as culprits and many governments are trying to ensure that domestic stimulus spending benefits

⁸ A similar problem is global leakage - the leakage of emissions which prevents the control of global emissions. For example, lower demand for oil in the United States could lower global prices and lead to greater consumption in China or higher EU imports of clean natural gas from Russia could lead to more coal consumption in Russia.

⁹ Malachy Hargadon, Environmental Counselor, Delegation of the European Community, Peterson Institute for International Economics, March 4, 2009.

their domestic constituents. There is a risk that this increased protectionist sentiment will spill over into the GHG reduction arena, and result in emissions-reduction approaches that would be trade-distorting and protectionist. Of course, the degree to which demand would be lowered by any trade equalization measures would depend on the price elasticity of demand per product, and such tariffs may have to be relatively high in order to lower domestic demand for the imported goods.

Those concerned about competitiveness, leakage, and fairness note that countries exempted from emissions reductions under the Kyoto Protocol, such as China, India, and Brazil, are among the top GHG emitters in the world. The vast majority of the growth in global emissions is projected to occur in developing countries. Those large developing countries, on the other hand, note that they have only recently been experiencing rapid industrialization and economic growth, in contrast to the developed world, and do not want to be penalized and have their growth curtailed, as millions of their citizens are still living at a subsistence level. At the UNFCCC Bonn meeting, in fact, many countries from both the developed and developing world expressed concerns about the economic impacts of unilateral trade measures being imposed for climate purposes. India, for example urged rich countries not impose carbon tariffs on carbon-intensive products from poor countries, labeling it “green” protectionism.¹⁰

At the Bonn meeting, an “Information Note”¹¹ to discuss the potential “spill-over” effects arising from developed countries’ potential equalization measures and their impacts on developing countries listed the following categories as a basis to consider potential compensation for developing countries:

- (a) Policies and measures that are purely domestic in scope (taxes, levies, subsidies, policy reform, public investment, cap-and-trade regimes, technology mandates);
- (b) Trade-related measures (increased or lowered tariffs, standards and labeling requirements, border carbon adjustment);
- (c) International responses (internationally agreed taxes and levies, internationally agreed cap-and-trade regimes, international technology cooperation).

Both categories (a) and (b), if proposed by national governments, would have to be evaluated carefully for compliance with the WTO’s General Agreement on Tariffs and Trade, and the WTO’s Agreement on Subsidies and Countervailing Measures (ASCM) and Agreement on Technical Barriers to Trade. For example, if a cap-and-trade system provides free emission allowances to certain industries, those allowances may or may not be considered subsidies under ASCM. Other measures, such as punitive tariffs on products from countries not restricting their carbon emissions, also may be called into question under GATT and WTO rules.¹² The precedent

¹⁰ <http://www.reuters.com/article/worldNews/idUSTRE5365FJ20090407>

¹¹ FCCC/KP/AWG/2009/INF.3, p. 6 <http://unfccc.int/resource/docs/2009/awg7/eng/inf03.pdf>

¹² If, like the pre-2012 framework, a post-2012 framework includes a mechanism under which developing countries can “register” their GHG emissions reduction actions, it will be more difficult to contend that unilateral trade measures are needed because developing countries are not taking comparable GHG reduction actions.

established by major environmental dispute cases is somewhat inconsistent as applied to these potential global warming measures.¹³

As noted in the recent Peterson Institute publication, *Global Warming and the World Trading System*,¹⁴ some of the proposals discussed include border adjustment measures, such as limits or tariffs on imports from countries that have not set emissions limits or relief for exports of domestic carbon-intensive products. In fact, just before the Bonn meetings, China's top global warming negotiator proposed that importers of Chinese-made goods should be responsible for the carbon dioxide emitted during their manufacture, as China should not pay for cutting emissions caused by the high demands of other countries.¹⁵

As discussed in Section III below, Hufbauer, Charnovitz, and Kim note that in the case of the U.S., equalization measures can be turned around and used against the U.S. by such countries as Canada and the EU. Also, since countries such as China and India export relatively few carbon-intensive goods, such measures may not provide sufficient leverage to encourage those countries to adopt GHG regulations. Also, as discussed in Section III, if free allowances were offered to domestic industries, they may be viewed as "subsidies" which may run afoul of WTO requirements

Other equalization proposals include performance standards on products and labeling, which can apply either to the performance and characteristics of the good produced or the production method. However, according to the UNFCCC information note,¹⁶ these may conflict with the WTO Agreement on Technical Barriers to Trade. Labeling requirements, for example, to show the number of air miles required to ship food, do not often consider all relevant variables and may be viewed as protecting domestic suppliers by excluding certain imported products. As of yet, the note states, there is not "any internationally recognized standardized approach to measuring the GHG profile or carbon footprint of goods and services."

Many of the discrete proposals to deal with the competition, leakage, and fairness issues thus create potential conflict with WTO rules or are open to dispute, because there is not a clear and unambiguous precedent.

II. WTO Activities Related to Climate Change

While the rules of the multilateral trading system are relevant to climate change, the specific issue of climate change is not part of the WTO's ongoing work program and there are no WTO rules specific to climate change.¹⁷ WTO activity on climate change is primarily focused on the Doha Round negotiations to liberalize trade in environmental goods and services. These negotiations will, if successful, increase the availability and lower the cost of innovative, environmentally-friendly goods, services and technologies, including those that improve energy

¹³ See, e.g., Gary Clyde Hufbauer, Steve Charnovitz and Jisun Kim *Global Warming and the World Trading System*, Peterson Institute, March 2009.

¹⁴ Gary Clyde Hufbauer, Steve Charnovitz, Jisun Kim, March 2009.

¹⁵ <http://news.bbc.co.uk/2/hi/science/nature/7947438.stm>

¹⁶ FCCC/KP/AWG/2009/INF.3, p. 6 <http://unfccc.int/resource/docs/2009/awg7/eng/inf03.pdf>

¹⁷ http://www.wto.org/english/tratop_e/envir_e/climate_challenge_e.htm

efficiency and reduce greenhouse gas emissions. For exporters, additional market access can provide incentives to develop new products, services and technologies to mitigate climate change.

WTO Members are also discussing ways to clarify the relationship between WTO rules and multilateral environmental agreements, both within the Doha framework and outside of it. These negotiations may be important in defining the relationship between the WTO and multilateral climate change agreements. However, they have been met with skepticism by a number of developing country Members.

Rather than taking a leading role in developing trade rules that address climate change, the WTO is instead waiting for guidance from a consensual international accord on climate change that includes all emitters. Pascal Lamy, Director General of the WTO, has argued that for the benefits of trade to materialize – in this case for the efficiency gains from trade to translate into fewer greenhouse gas emissions – energy “must be properly priced in taking into account the relevant products and production processes... In the absence of such parameters, it will be hard if not impossible for the WTO to develop a coherent position on the matter.”¹⁸ Instead, “the world could end up with a real spaghetti bowl of offsetting measures that achieve neither trade nor environmental goals.”¹⁹

Some commentators have argued for a more proactive role for the WTO, such as initiating sectoral agreements among countries with qualifying greenhouse gas emissions, or an alternative proposal of the adoption of a temporary “green space” whereby certain trade measures taken in pursuit of climate change objectives would be free from the threat of dispute under the WTO.²⁰ To date, the WTO has not embraced such a role.

III. Trade Provisions in U.S. Climate Change Legislation

Also of great significance will be the nature of the trade provisions included in any proposed and/or final U.S. legislation regulating GHG emissions. That legislation and its trade provisions will have significant impacts on overall U.S. trade policy, international trade negotiations, and the eventual efficacy of international and U.S. efforts to regulate GHG emissions. The majority of U.S. imports of energy-intensive products such as steel, aluminum and paper (although not chemicals or cement) are from UNFCCC Annex I countries, primarily Canada and the European Union.²¹

¹⁸ A consensual international accord on climate change is needed, Director General Pascal Lamy, speech to European Parliament panel, May 29, 2008.

http://www.wto.org/english/news_e/sppl_e/sppl91_e.htm

¹⁹ Ibid.

²⁰ Gary Clyde Hufbauer, Steve Charnovitz, Jisun Kim, *Global Warming and the World Trading System*. Peterson Institute for International Economics, 2009.

²¹ *Leveling the Carbon Playing Field: International Competition and US Climate Policy Design*, Trevor Houser, Rob Bradley, Britt Childs, Jacob Werksman, Robert Heilmayr, Peterson Institute for International Economics and World Resources Institute, May 2008.

A. Equalization Measures, Generally

Every piece of draft GHG legislation that has been proposed in the last two years has contained some type of trade-related “equalization” measure. As described in Section I, such measures are a response to the costs industry will incur in order to obtain the sought-after GHG reductions. The type of equalization measure(s) adopted depends on the method of GHG reduction. The three potential mechanisms for Congress to regulate GHG emissions are: (1) a carbon tax, (2) a cap and trade system, and (3) administrative regulation. Given the unlikely prospect for the adoption of administrative regulation by Congress, it is not included in this discussion.

B. Equalization Measures for a Carbon Tax

If Congress were to adopt a carbon tax, the most common trade-related equalization measure would be a border tax adjustment. The method for such an adjustment is straightforward, although its application can be complicated. A border tax adjustment applies a pre-established tax on incoming goods that originate from countries that do not have comparable GHG regulations. The three main difficulties with this approach are identifying (1) which goods should be taxed, (2) the carbon emissions “contained” in those goods, and (3) whether the country from which the goods originate has a “comparable” regulatory scheme. Once these hurdles are crossed, however, it is quite easy to calculate the tax (and therefore quite simple to make it non-discriminatory).

The first question is what goods should be taxed. As described in Section I, taxing raw materials is much easier than taxing finished goods. However, taxing only raw materials omits the bulk of products imported into the United States. On the other hand, raw material production is generally more carbon-intensive than finished product production, so focusing on raw materials reaches the low-hanging fruit.

Next, identifying the carbon emissions associated with a finished good is quite complex. It depends not only on the good, but also on the process used to make the good (including the technological efficiency of the process), what inputs were used to make the good (virgin or recycled? Local or transported a far distance?), and the type of energy used (coal, oil, or natural gas?), among other things. For example, the carbon intensity of aluminum is determined largely by the source of electricity used in production. The United States aluminum industry as a whole, which obtains half of its electricity from hydropower, is less carbon intensive than the average Asian or African smelter (despite being less energy efficient), but is more carbon intensive than Canadian, European, Russian or Middle Eastern smelters.²² A good-by-good analysis is infeasible but grouping goods by product or country is a gross tool that will unfairly penalize “green” manufacturers or countries. Thus, providing an “appeal” mechanism is critical.

Finally, determining whether the exporting country has a “comparable” regulatory scheme involves an inter-country regulatory comparison. It may not always be clear exactly how rigorous another country’s GHG laws are or whether they are “close enough” to U.S. standards. Moreover, deciding to undertake this type of analysis is a double-edged sword, as it invites other

²² Ibid. p. 48.

countries that have GHG regulations to examine any eventual scheme the U.S. adopts. For example, given the delayed implementation dates present in the draft Congressional legislation proposed to date, it is quite likely that, at least in the short term, any U.S. regulation will be less vigorous than European regulation. This fact, particularly if combined with any equalization measures in eventual U.S. legislation, may invite countervailing equalization measures on U.S. exports.

C. Equalization Measures for Cap and Trade.

If Congress were to adopt a Cap and Trade program, the most common equalization measure would be a requirement that importers obtain emissions allowances. These allowances would be “comparable” to those required of U.S. industry. The same three challenges that apply to a border tax also apply to import allowances (which goods to cover, how to calculate the carbon intensity of the goods, and whether the goods were produced under a comparable regime). In addition, there is the problem of pricing. Even if the carbon intensity of a given imported good can be calculated accurately, since, under a cap and trade system, the price of allowances fluctuates over time, the challenge is to determine the price which importers must pay for them. Imposing such a duty is more difficult than for a border tax.

D. WTO Compatibility of Trade Equalization Measures

The final issue is whether trade equalization measures are compatible with the WTO. The most common conclusion has been that trade measures would fall afoul of WTO rules and jurisprudence. However, there is a growing body of speculation by legal experts that some could be found compatible. In the 1991 dolphin-safe tuna cases, the GATT identified that goods with identifiable environmental safeguards are different from those that do not. The 1998 Shrimp-turtle matter reinforced the WTO inclination to provide countries some leeway in taking actions to safeguard the “global commons.” Also, GATT Article XX and associated provisions provide for a general exemption for measures “relating to the conservation of exhaustible natural resources if such measures are made in conjunction with restrictions on domestic production.”²³ On the other hand, allowing GHG duties under GATT could result in very interesting precedent: if duties can attach due to inter-country differences in GHG regulatory regimes (or even incremental differences in those regimes), the same would appear to hold true for gaps in other regulatory regimes, such as labor or health insurance standards, for example. The prospect of trade equalization measures for all such differences has the potential to weaken the WTO open trade system as it exists today.

E. Current Congressional Approaches

To date, all of the cap and trade bills presented in Congress are cap and trade controls with import allowances. For example, the Waxman/Markey discussion draft circulated in early April 2009 requires “international reserve allowances” for “closely related” international “primary products” (iron, steel, cement, pulp and paper, aluminum, glass, ceramics and similar products) that are imported. Such allowances will have to be purchased if the exporting country does not

²³ A related question is how disruptive trade equalization measures would be to trade flows.

have “commensurate” GHG regulations. The Boxer/Lieberman/Warner draft circulated last year also requires international reserve allowances from countries without comparable GHG regulatory programs, with the price determined by EPA on a daily basis. Allowances would be based in part on the carbon intensity of the manufacturing processes in the importer’s home country as a whole.

IV. NAFTA and Climate Change

The United States has signed more than a dozen free trade agreements (FTAs) with countries that account for almost 40 percent of total US merchandise trade. All of these agreements (with the exception of the 1985 FTA with Israel) contain rights and obligations regarding trade and the environment, but none of them were designed to address the trade implications of national policies to mitigate GHG emissions. The pacts do, however, create special relationships between partner countries and establish consultative procedures that can be used to develop cooperative approaches to reducing GHGs.

Efficient action in North America, which emits 25% of the world’s carbon dioxide, will be crucial to attaining the substantial reductions in GHGs recommended by the Intergovernmental Panel on Climate Change by 2050. In addition, climate policy enacted in North America could inform policy within other FTAs and climate change compacts.

Climate change policies are proliferating in North America at the state and provincial levels and are under construction in each national capital. Each NAFTA member has its own priorities in enacting climate laws and regulations; differences can complicate the task of coordinating efforts - among states or provinces, between states or provinces and the federal government, and among the three NAFTA members – to reduce GHGs throughout North America. There is also a risk that competitiveness concerns due to varying regulations could potentially trigger countervailing measures by NAFTA member countries, increasing the cost of climate change mitigation.

In addition, two legal issues could potentially complicate the task of coordinating policies in this area both among NAFTA countries and between national and sub-national governments in each country: the application of the federal preemption principle in U.S. jurisprudence and the applicability of the investor-state dispute provisions under NAFTA chapter 11 in cases involving taxes and regulatory policies designed to mitigate GHG emissions. Chapter 11 extends U.S. Constitutional rights and rule of law on discrimination and takings to the NAFTA region. Chapter 11 may be relied upon by affected parties for protection against equalization measures, invoking their right against discrimination and unfair treatment as GHG policies are introduced in the NAFTA Region. Given the serious concerns on both sides of the Chapter 11 issue, USTR will want to look carefully at this question.

North America will increasingly need to address how laws and regulations can be efficiently integrated as NAFTA members proceed with national strategies and international negotiations to develop a post-Kyoto global regime. To that end, the TEPAC should monitor evolving US, Canadian and Mexican climate change policies and consider the role that NAFTA could play in helping each member achieve its goal of substantially reducing emissions of GHGs.

V. Impacts to FTAs and Multilateral Treaties

Past negotiations of U.S. free trade agreements have not focused to any significant extent specifically on climate change policies. However, there is a “built-in” platform for joint initiatives in this area under the auspices of the environmental cooperation agreements (ECAs) established in conjunction with the trade pacts. The U.S. government could encourage our trading partners to pursue GHG mitigation strategies as part of the bilateral cooperation agenda put forward by the environmental councils and could help secure technical and financial assistance for these programs. Such initiatives are especially important in regional groupings such as CAFTA where the member countries need an integrated approach on reducing GHGs so that they can contribute effectively to the reduction of global emissions under a new post-Kyoto global compact.

Similarly, climate change initiatives also have become more prominent on the agendas of broader “super-regional” initiatives in both the Western Hemisphere and the Asia-Pacific Economic Cooperation (APEC) forum. The recent Summit of the Americas in Trinidad discussed climate change initiatives under the rubric of one of its core objectives: promoting environmental sustainability. The Western Hemisphere leaders recognized “that deep cuts in greenhouse gas emissions will be required to achieve the ultimate objective of the [UNFCCC]” and that reductions should be made “in accordance with our common but differentiated responsibilities and respective capabilities.”

In particular, the Summit leaders committed to “enhance our cooperation in this area throughout the region.” In the past, environmental cooperation followed commercial treaties but, under current circumstances, it is unlikely that hemisphere-wide trade initiatives will revive in the near future. Instead, we suggest that USTR-State-EPA officials consider whether new ECAs should precede rather than supplement new trade agreements, so that we could pursue programs with countries with which we do not have a bilateral trade accord comparable to those that could be developed with NAFTA, CAFTA, and other FTA partners. Brazil would be a logical candidate, since a prospective ECA could build upon the constructive precedent of the U.S.-Brazil biofuels initiative.

Finally, climate change issues should be given higher priority on the agenda of the annual APEC ministerial and leaders’ meeting. APEC members account for half of global output; thus, an APEC commitment on climate change could have a major impact on the form and substance of a global compact. This year’s session in Singapore will start developing the themes and programs of Asia-Pacific that will be elaborated in subsequent sessions next year in Japan and in 2011 in the United States. While there is no formal link as yet between APEC’s trade and environmental objectives, Singapore officials recognize that the achievement of the G-20 goals regarding economic recovery and GHG mitigation require a melding of the two areas of cooperation.

VI. Wildlife, Adaptation, and Climate Change

As noted in the introduction, TEPAC has not attempted in this paper to parse or examine in detail the numerous issues within these broad subjects. TEPAC is happy to provide such analysis for any issue which would be of help to USTR and EPA and invites them to solicit TEPAC’s

detailed views on any such subject. As an example of the type of analysis TEPAC can provide, the following discussion provides the Committee's detailed views on one of the critical issues, the climate change impacts to wildlife.

Climate change and the illegal wildlife trade are two of the most significant threats to wildlife around the globe. Now, it is becoming increasingly clear that in areas where both illegal wildlife trade and climate change are affecting or will affect wildlife in the future, the likelihood of population decline and species extinction grows dramatically. Climate change and its impacts on natural and human systems, including the potential to exacerbate the negative impact of illegal trade on wildlife populations, will have to be considered and analyzed when the United States considers cooperative agreements that may impact the global environment, including multilateral and bilateral agreements relating to free trade.

A. Climate Change's Pressures on Wildlife and Biodiversity

The pressures on biodiversity due to climate change are likely to be severe. For example, climate change has been shown to change the timing of both vegetation development and bird migrations.²⁴ Climate change may also affect species breeding ranges, animal size, and numerous other species survival factors.²⁵ Habitat change and geographic range shift is also likely to strain wildlife survival and biodiversity. In addition, climate change will cause redistribution of animal and likely also human populations, increasing the likelihood of human-animal encounters, poaching, and illegal trade in wildlife and its derivatives.

The threat of climate change to wildlife and biodiversity is immediate, not speculative.²⁶ Several species have already become extinct due to climate change,²⁷ and others are threatened with steep declines.²⁸ Many other species, including birds, frogs, and insects are already being injured as a result of disrupted habitat.²⁹

B. The Illegal Wildlife Trade

Endangered species of wild animals and their parts and derivatives are traded commercially throughout the world, endangering wild animal populations, causing species extinctions,³⁰

²⁴ Visser, Marcel. "Keeping up with a warming world; assessing the rate of adaptation to climate change." Proc. R. Soc. B. doi:10.1098/rspb.2007.0997.

²⁵ *Id.*

²⁶ McLaughlin, J. F., Hellmann, J. J., Boggs, C. L. & Ehrlich, P. R. "Climate change hastens population extinctions." Proc. Natl Acad. Sci. USA 99, 6070–6074 (2002).

²⁷ Lovejoy, Thomas. "Climate change's pressures on biodiversity." The Worldwatch Institute. State of the World, W.W. Norton & Co. pp. 67-70 (2009).

²⁸ *See Supra* note 6.

²⁹ *Id.*

³⁰ Worldwide, 1,141 of the more than 5,488 (21%) described mammal species and 1,222 of the more than 9,990 (12%) described species of birds are threatened with extinction (IUCN 2007). According to Dr. Michael Novacek, Provost of Science at the American Museum of Natural History (Ward 2002), "As much as 30 percent of species diversity will be erased by the middle

degrading biodiversity and causing the suffering of individual animals. The global trade in wildlife is a multi-billion dollar business annually, involving hundreds of millions of individual plants and animals from tens of thousands of species. A significant portion of this trade is unmanaged, unreported and/or illegal, and the development of a global internet trade has facilitated its expansion and hindered its control. Interpol estimates that illegal wildlife crime could be worth as much as \$20 billion per year, second only to arms and narcotics trafficking.³¹ In many cases, penalties for wildlife crime are far less than those associated with other trafficking offenses, making illegal wildlife trade a less risky, yet lucrative, alternative.³²

Illegal trade undermines nations' efforts to manage their natural resources sustainably and causes massive economic losses. Moreover, illegal and unregulated trade can result in the introduction of invasive species that prey upon, or out-compete, native species. Invasive species are a major cause of recent extinctions, as well as harm to local agriculture, livelihoods and economies.

The supply chain from animal source population to consumer is complicated, and uses for wildlife parts are broad, including food (often expensive delicacies), traditional medicines, pets, decorations (including trophies), clothing, and fashion items. Species from across the animal kingdom are victims in this trade: fish, reptiles, birds, mammals, and amphibians. The global reach, the multitude of species and products involved and the expansion of the global marketplaces as a result of the internet can make these criminal activities difficult to understand, trace or enforce.

C. Climate Change and Illegal Wildlife Trade Combined Hasten Species Decline

Species and population extinction events are more likely in areas where both climate change and the illegal wildlife trade occur. As noted by USTR, free trade agreements “may further increase investment, trade and production in the region, which may be associated with further pressure on the environment”³³ and could have “possible effects ... on wildlife and endangered species.”³⁴

of this century.” In total, an alarming 8,462 species of animals -- from insects and shellfish to gorillas and elephants -- are considered at risk (IUCN 2008). For some of these species, wildlife trade is a key factor in their demise.

³¹ See *Wildlife Trafficking is a Serious Problem, Lucrative Business* (June 16, 2008), available at <http://www.america.gov/st/env-english/2008/June/20080616142333mlenuhret0.8286859.html>.

³² See CRS Report, *International Illegal Trade in Wildlife: Threats and U.S. Policy* at CRS-6 (March 3, 2008) (Order Code: RL34395). A live orangutan, for example, has an estimated retail value of \$50,000. *Id.* at CRS-7. The remains of a tiger in China could value up to \$70,000. See *Laos Emerges as Key Source in Asia's Illicit Wildlife Trade* (February 26, 2009) available at <http://e360.yale.edu/content/feature.msp?id=2126>.

³³ U.S. Trade Representative: Andean TPA Interim Environmental Review. pg. 21. 28 February 05.

http://www.ustr.gov/assets/Trade_Agreements/Bilateral/Andean_TPA/asset_upload_file27_7305.pdf

³⁴ U.S. Trade Representative: Final Environmental Review of the U.S.-Chile Free Trade Agreement. pg. 19. June 2003

Increasing ease of trade and additional trading routes could lower the costs involved and raise the incentive for traders in illegal wildlife and those supplying them with wildlife and its derivatives. In areas where climate change is likely to have the greatest detrimental impacts on wildlife and biodiversity, the existing grave effects of the illegal wildlife trade could be compounded. USTR conducts environmental impact studies to analyze many of these potential impacts so that the positive environmental effects of trade agreements noted below can be achieved and the negative ones avoided or mitigated.

Examples of species of plants and animals that are currently threatened by the combined effects of climate change and illegal trade include:

- Elephants in Africa and Asia, which are endangered due to poaching for the ivory trade. For example, during the 1980's African elephant numbers fell from an estimated 1.3 million to 450,000 because of widespread poaching. As increased human development encroaches on traditional migratory lands, elephants are increasingly limited to smaller protected areas. When distributions become insular because of habitat loss or increasing human population pressures, species populations become more vulnerable to climate change and other threats.³⁵ Many African elephants, limited to protected area "islands" are increasingly likely to suffer from population extirpation due to a warming climate and reduced rainfall, in addition to encroachment by human populations.³⁶ In addition, as land becomes more arid, it is likely that more local citizens will turn to poaching as a way to supplement insufficient income, unemployment or underemployment. All these elements combine to exacerbate the threats already posed by current poaching levels feeding the illegal wildlife trade in elephant parts.
- Deforestation resulting from illegal logging and clear-cutting for agricultural production is a leading emitter of carbon and cause of climate change.³⁷ Deforestation also poses one of the greatest threats to the survival of forest-dependent species. Throughout South America, illegal logging of mahogany degrades rivers and streams that are home to the giant river otter and other species. Additionally, unsustainable logging practices result in the creation of roads that are subsequently used by poachers to hunt monkeys and other wildlife that end up on the illegal black market for endangered species. Climate change is enhancing the threat to forest wildlife by facilitating poaching, while also causing a direct threat to the species through habitat loss.

http://www.ustr.gov/assets/Trade_Agreements/Bilateral/Chile_FTA/asset_upload_file411_5109.pdf

³⁵ *Id.*

³⁶ Black, Richard "Climate fear for African elephant." BBC News, May 7, 2005, available at: <http://news.bbc.co.uk/1/hi/sci/tech/4522663.stm>.

³⁷ "Deforestation causes global warming." Food and Agriculture Organization of the United Nations, Sept. 4, 2009 (finding that loss of forests contributes as much as 30 percent of global greenhouse gas emissions each year), available at <http://www.fao.org/newsroom/en/news/2006/1000385/index.html>.

- Critically endangered hawksbill turtles are threatened by both climate change and the illegal wildlife trade. While global numbers are very difficult to estimate, it appears that this species has declined by as much as 80 percent over the last century. Major threats to the species' survival include the illegal trade in the turtle's prized shell and the market for turtle eggs, meat, and exotic gifts. Additional pressure comes from the loss of nesting sites, entanglement with fishing gear, and the deterioration of coral reef systems which act as feeding sites. Most importantly, with rising temperatures, fewer male turtles hatch, creating a population crisis.³⁸ International trade in the hawksbill turtle is banned between signatory nations due to its listing on Appendix I of CITES, but extensive illegal trafficking still occurs. Climate change is significantly impacting the future survival of sea turtles, while the illegal wildlife trade continues to threaten the species.

D. Trade Policy Can have Beneficial Effects

In May 2007, Congress and USTR finalized the Bipartisan Trade Deal (BTD), which mandated certain environmental protections in trade agreements. The BTD reflected policies favorable to the environment and wildlife, such as a commitment to adopt, implement and effectively enforce laws and regulations under a number of multilateral environmental agreements including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Recently, the U.S.-Peru Trade Promotion Agreement (TPA) included unprecedented provisions for biodiversity conservation and the link between illegal logging and illegal wildlife trade. As future trade agreements are proposed and implemented, provisions relating to climate change and its relationship to the illegal trade in wildlife and wildlife conservation could be included. Using trade agreements as a means of increasing enforcement of illegal wildlife trade could mitigate the increasing pressures of climate change on species populations and assist with climate change adaptation.

The immediate threat to wildlife and biodiversity caused by climate change in conjunction with, and in some cases exacerbated by, the continued pressures of illegal trade on species populations, is likely to expedite species decline and extinction events. The increased vulnerability of marine ecosystems as a result of climate change makes them less able to deal with other threats such as over-fishing and highlights the need to address those threats through effective domestic management and global prohibitions on subsidies that contribute to overfishing. USTR is in a unique position to encourage the mitigation of harms caused by both climate change and the illegal wildlife trade. U.S. trade policy has led to the inclusion of environmental sustainability provisions in recent free trade agreements. This language includes a commitment to effective enforcement, public participation, and biodiversity protection. In future trade policy negotiations, all parties must be more cognizant of the growing threats to wildlife caused by the interrelationship between climate change and the illegal wildlife trade and consider how trade agreements can best mitigate and address these issues. Awareness and early incorporation of solutions to these threats will allow for more comprehensive and sustainable trade policy.

³⁸ Velasquez-Manoff, Moises "Climate turns up heat on sea turtles." *Christian Science Monitor* (June 21, 2007) available at: <http://www.csmonitor.com/2007/0621/p25s03-sten.html>.

CONCLUSION

As stated in the introduction, this paper offers USTR and EPA TEPAC's views regarding areas where trade and climate change policy and practice will intersect in the immediate future. To the extent the Agencies believe it would be beneficial, TEPAC would like to assist them in assessing their goals and strategies on these issues. It welcomes the opportunity to discuss any or all of these issues in detail and/or provide both or either of the Agencies with analysis on other trade and climate change issues. The Committee looks forward to hearing from the Agencies as to how it can best assist them in addressing this multifaceted issue on a going-forward basis.

Overview of EPA's Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act



April 17, 2009

Today the Administrator is proposing to find that greenhouse gases in the atmosphere threaten the public health and welfare of current and future generations. The Administrator is also proposing to find that greenhouse gas emissions from new motor vehicles and new motor vehicle engines are contributing to the concentration of greenhouse gases in the atmosphere. This action is being taken under section 202(a) of the Clean Air Act. The action, if finalized, would not itself impose any requirements on industry or other entities.

Action

Today, the Administrator signed a proposal with two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator is proposing to find that the current and projected concentrations of the mix of six key greenhouse gases—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)—in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator is further proposing to find that the 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.

Background

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act. The Court held that the Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the Administrator is required to follow the language of section 202(a) of the Clean Air Act. The Supreme Court decision resulted from a petition for rulemaking under section 202(a) filed by more than a dozen environmental, renewable energy, and other organizations.

Scientific Basis

- After a thorough examination of the scientific evidence on the causes and impacts of current and future climate change, as well as other effects of greenhouse gases, the Administrator concludes that the science compellingly supports a positive endangerment finding for both public health and welfare. In her decision, the Administrator relied heavily upon the major findings and conclusions from recent assessments of the U.S. Climate Change Science Program and the Intergovernmental Panel on Climate Change.
- The Administrator is proposing this endangerment finding after considering both observed and projected future effects of climate change, key uncertainties, and the full range of risks and impacts to public health and welfare occurring within the United States. The scientific

evidence concerning risks and impacts occurring outside the United States, including risks and impacts that can affect people in the United States, provides further support for this proposed endangerment finding.

- Among the key scientific findings supporting the Administrator's proposal are:
 - Concentrations of greenhouse gases are at unprecedented levels compared to the recent and distant past. These high concentrations are the unambiguous result of human emissions and are very likely the cause of the observed increase in average temperatures and other climatic changes.
 - The effects of climate change observed to date and projected to occur in the future include, but are not limited to, more frequent and intense heat waves, more severe wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, harm to agriculture, and harm to wildlife and ecosystems. The Administrator considers these impacts to be effects on public health and welfare within the meaning of the Clean Air Act.
 - Emissions of greenhouse gases from on-road vehicles regulated by section 202(a) of the Clean Air Act contribute to the climate change problem. These sources are responsible for 24 percent of total U.S. greenhouse gas emissions, and more than 4 percent of total global greenhouse gas emissions.

Public Involvement and Further Information

EPA will post a pre-publication copy of the signed package, including both the Administrator's proposal and the Technical Support Document (discussing the underlying science and greenhouse gas emission data) on the EPA Web site at: www.epa.gov/climatechange/endangerment.html. The Administrator's proposal will be available at www.regulations.gov after it is published in the *Federal Register*.

The materials in the docket for this rulemaking will also be available electronically at www.regulations.gov. The Docket ID number is: EPA-HQ-OAR-2009-0171. Docket materials are also available in hard copy at the EPA Docket Center (EPA/DC) Public Reading Room. Please call 202-566-1744 between 8:30 a.m. and 4:30 p.m. Eastern Standard Time for more information.

The public will be able to comment on the proposed endangerment and cause or contribute findings for 60 days following publication in the *Federal Register*.

EPA plans to conduct two public hearings: May 18, 2009, at the EPA Potomac Yard Conference Center, Arlington, VA; and May 21, 2009, at the Bell Harbor International Conference Center in Seattle, WA.

Additional information is available at: www.epa.gov/climatechange/endangerment.html.

The Web site for this action with additional information can be found at: www.epa.gov/climatechange/endangerment.html.

This fact sheet is intended to assist the public to understand key aspects of the proposal. However, this fact sheet is not intended to be a substitution for the proposal itself. Visit EPA's website at the address above for more information, including the proposal, or go to www.regulations.gov to access the rulemaking docket (EPA-HQ-OAR-2009-0171) which will be opened when the proposal is published in the Federal Register. For questions that cannot be answered through the Web site or docket, call 202-343-9927.

Frequently Asked Questions on the Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases



What is the EPA Administrator proposing?

The Administrator is proposing two distinct “findings.” First, in the “**Endangerment Finding**” the Administrator proposes that the mix of atmospheric concentrations of six key greenhouse gases threatens the public health and welfare of current and future generations. These six greenhouse gases are: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). These greenhouse gases in the atmosphere constitute the “air pollution” that threatens public health and welfare.

Second, in the “**Cause or Contribute Finding**” the Administrator proposes that the 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.

Will the Proposed Findings impose any requirements under the Clean Air Act?

Today’s proposed action, as well as any final action in the future, would not itself impose any requirements on industry or other entities. An endangerment finding under one provision of the Clean Air Act would not by itself automatically trigger regulation under the entire Act.

What was the Administrator’s rationale for issuing this Proposal?

With this proposal, the Administrator is responding to the April 2007 *Massachusetts v. EPA* Supreme Court decision, in which the court found that greenhouse gases are air pollutants under the Clean Air Act. The Court held that the Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

It is the Administrator’s judgment that the total body of scientific evidence compellingly supports her proposal that greenhouse gases threaten both public health and welfare. The Administrator reached this conclusion after considering both current and projected future effects of climate change and after considering the full range of risks and impacts to public health and welfare occurring within the United States. The Administrator believes that the effects within the United States by themselves warrant this judgment. The Administrator also considered the scientific evidence concerning risks and impacts occurring outside the United States, including risks and impacts that can affect people in the United States, and finds that they provide further support for this finding.

With regard to the cause or contribute finding, the Administrator considered that the combined emissions of greenhouse gases from all on-road vehicles (i.e., those covered under section 202(a) of the Clean Air Act) contribute to both total U.S. (24 percent) and total global (over 4 percent) greenhouse gas emissions.

On what science was the proposed Endangerment Finding based?

The Administrator relied heavily on existing, peer-reviewed scientific literature. In particular, she relied on reports and conclusions from the U.S. Climate Change Science Program, the National Research Council, and the Intergovernmental Panel on Climate Change because they represent the current state of knowledge on climate change science, vulnerabilities, and impacts. These studies are authored by leading scientific experts and underwent multiple layers of peer review, including, in many cases, review and acceptance by government agencies.

This fact sheet is intended to assist the public to understand key aspects of the proposal. However, this fact sheet is not intended to be a substitution for the proposal itself. Visit EPA's website at the address above for more information, including the proposal, or go to www.regulations.gov to access the rulemaking docket (EPA-HQ-OAR-2009-0171) which will be opened when the proposal is published in the Federal Register. For questions that cannot be answered through the Web site or docket, call 202-343-9927.

Summary of the Science Supporting EPA's Finding That Greenhouse Gases Threaten Public Health and Welfare



For a full discussion of the rationale for EPA's proposed findings, please see the Proposal describing the findings as well the underlying Technical Support Document for a comprehensive synthesis of the science at: www.epa.gov/climatechange/endangerment.html. All of the points in this fact sheet come from the published scientific literature, particularly from the assessments of the U.S. Climate Change Science Program, the National Research Council, and the Intergovernmental Panel on Climate Change.

Key Points About Climate Change:

- Heat-trapping greenhouse gases are now at record-high levels in the atmosphere compared to the recent and distant past.
- These high atmospheric levels are the clear result of human emissions of carbon dioxide and other greenhouse gases.
- Warming of the climate system is now well documented, as is evident from increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level. Eight of the 10 warmest years on record have occurred since 2001.
- The buildup of greenhouse gases in the atmosphere is very likely the cause of the observed increase in average temperatures and other climatic changes. Most of the warming cannot be explained by natural variability such as variations in solar activity.
- Future warming over the course of the 21st century, even when assuming emissions growth will be low, is very likely to be greater than observed warming over the past century.
- The effects of climate change observed to date and/or projected to occur in the future include, but are not limited to: more frequent and intense heat waves, more wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, harm to agriculture, and harm to wildlife and ecosystems.
- The changes to our climate may increase the likelihood of extreme and high-impact events such as more intense hurricanes.

Health Effects Associated With Elevated Greenhouse Gas Concentrations in the United States

Temperature Effects:

- There is evidence that extremely hot days are already increasing. Severe heat waves are projected to intensify, which can increase heat-related mortality and sickness. A possible benefit of moderate temperature increases includes fewer deaths from exposure to extreme cold.

Air Quality Changes:

- Climate change is expected to worsen regional ozone pollution, with associated risks in respiratory infection, aggravation of asthma, and premature death. The impact on particulate matter remains less certain.

Extreme Events:

- Storm impacts are likely to be more severe, especially along the Gulf and Atlantic coasts. Heavy rainfall events are expected to increase, increasing the risk of flooding, greater runoff and erosion, and thus the potential for adverse water quality effects. These projected trends can increase the number of people at risk from suffering disease and injury due to floods, storms, droughts and fires.

Climate-Sensitive Diseases:

- Potential ranges of certain diseases affected by temperature and precipitation changes, including tick-borne diseases, are expected to increase.

Welfare Effects Associated With Elevated Greenhouse Gas Concentrations in the United States

Under the Clean Air Act, “welfare” includes impacts such as effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility, and climate; damage to and deterioration of property and hazards to transportation; as well as effects on economic values and on personal comfort and well-being.

- The global sea level gradually rose in the 20th century and is currently rising at an increased rate, exacerbating storm-surge flooding and shoreline erosion.
- Rising temperatures will diminish snowpack in the Western U.S., affecting seasonal availability of water.
- Climate change will likely further constrain already over-allocated water resources in some areas of the U.S., increasing competition among agricultural, municipal, industrial, and ecological uses.
- Modest climate change, plus elevated CO₂, may bring agricultural yield increases in the near term. But, as temperatures continue to rise, these crops will increasingly begin to experience failure. Increases in regional ozone levels will also adversely impact certain crops.
- Climate change has very likely already increased the size and number of forest fires, insect outbreaks, and tree mortality in the interior West, the Southwest, and Alaska, and will continue to do so.
- Changes in climate will cause species to shift north and to higher elevations and fundamentally rearrange U.S. ecosystems.
- Ocean acidification is projected to continue, which can affect the productivity of marine life such as corals.
- Climate change impacts in certain regions of the world may exacerbate problems that raise humanitarian, trade, and national security issues for the United States.

This fact sheet is intended to assist the public to understand key aspects of the proposal. However, this fact sheet is not intended to be a substitution for the proposal itself. Visit EPA’s website at the address above for more information, including the proposal, or go to www.regulations.gov to access the rulemaking docket (EPA-HQ-OAR-2009-0171) which will be opened when the proposal is published in the Federal Register. For questions that cannot be answered through the Web site or docket, call 202-343-9927.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Office of
General
Counsel

APR 10 1998

MEMORANDUM

SUBJECT: EPA's Authority to Regulate Pollutants Emitted by Electric Power Generation Sources

FROM: Jonathan Z. Cannon
General Counsel

TO: Carol M. Browner
Administrator

I. Introduction and Background

This opinion was prepared in response to a request from Congressman DeLay to you on March 11, 1998, made in the course of a Fiscal Year 1999 House Appropriations Committee Hearing. In the Hearing, Congressman DeLay referred to an EPA document entitled "Electricity Restructuring and the Environment: What Authority Does EPA Have and What Does It Need." Congressman DeLay read several sentences from the document stating that EPA currently has authority under the Clean Air Act (Act) to establish pollution control requirements for four pollutants of concern from electric power generation: nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon dioxide (CO₂), and mercury. He also asked whether you agreed with the statement, and in particular, whether you thought that the Clean Air Act allows EPA to regulate emissions of carbon dioxide. You agreed with the statement that the Clean Air Act grants EPA broad authority to address certain pollutants, including those listed, and agreed to Congressman DeLay's request for a legal opinion on this point. This opinion discusses EPA's authority to address all four of the pollutants at issue in the colloquy, and in particular, CO₂, which was the subject of Congressman DeLay's specific question.

The question of EPA's legal authority arose initially in the context of potential legislation addressing the restructuring of the utility industry. Electric power generation is a significant source of air pollution, including the four pollutants addressed here. On March 25, 1998, the Administration announced a Comprehensive Electricity Plan (Plan) to produce lower prices, a cleaner environment, increased innovation and government savings. This Plan includes a proposal to clarify EPA's

authority regarding the establishment of a cost-effective interstate cap and trading system for NOx reductions addressing the regional transport contributions needed to attain and maintain the Primary National Ambient Air Quality Standards (NAAQS) for ozone. The Plan does not ask Congress for authority to establish a cap and trading system for emissions of carbon dioxide from utilities as part of the Administration's electricity restructuring proposal. The President has called for cap-and-trade authority for greenhouse gases to be in place by 2008, and the Plan states that the Administration will consider in consultation with Congress the legislative vehicle most appropriate for that purpose.

As this opinion discusses, the Clean Air Act provides EPA authority to address air pollution, and a number of specific provisions of the Act are potentially applicable to control these pollutants from electric power generation. However, as was made clear in the document from which Congressman DeLay quoted, these potentially applicable provisions do not easily lend themselves to establishing market-based national or regional cap-and-trade programs, which the Administration favors for addressing these kinds of pollution problems.

II. Clean Air Act Authority

The Clean Air Act provides that EPA may regulate a substance if it is (a) an "air pollutant," and (b) the administrator makes certain findings regarding such pollutant (usually related to danger to public health, welfare, or the environment) under one or more of the Act's regulatory provisions.

A. Definition of Air Pollutant

Each of the four substances of concern as emitted from electric power generating units falls within the definition of "air pollutant" under section 302(g). Section 302(g) defines air pollutant" as

any air pollution agent or combination of such agents, including any physical, chemical, biological, [or] -radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air. Such term includes any precursors to the formation of any air pollutant, to the extent that the Administrator has identified such precursor or precursors for the particular purpose for which the term "air pollutant" is used.

This broad definition states that "air pollutant" includes any physical, chemical, biological, or radioactive substance or matter that is emitted onto or otherwise enters the ambient air SO₂, NO_x, CO₂, and mercury from electric power generation are each a "physical [and] chemical... substance which is emitted into . . . the ambient air," and hence, each is an air pollutant within the meaning of the Clean Air Act.¹

¹ See also section 103(g) of the Act (authorizes EPA to conduct a basic research and technology program to develop and demonstrate nonregulatory strategies and technologies for air pollution prevention, which shall include among the program elements "[i]mprovements in nonregulatory strategies and technologies for preventing or reducing multiple air pollutants, including sulfur oxides, nitrogen oxides, heavy metals, PM- 10 (particulate matter), carbon monoxide, and carbon dioxide, from stationary sources, including fossil fuel power plants.")

A substance can be an air pollutant even though it is naturally present in air in some quantities. Indeed, many of the pollutants that EPA currently regulates are naturally present in the air in some quantity and are emitted from natural as well as anthropogenic sources. For example, SO₂ is emitted from geothermal sources; volatile organic compounds (precursors to ozone) are emitted by vegetation and particulate matter and NO_x, are formed from natural sources through natural processes, such as naturally occurring forest fires. Some substances regulated under the Act as hazardous air pollutants are actually necessary in trace quantities for human life, but are toxic at higher levels or through other routes of exposure. Manganese and selenium are two examples of such pollutants. EPA regulates a number of naturally occurring substances as air pollutants, however, because human activities have increased the quantities present in the air to levels that are harmful to public health, welfare, or the environment.

B. EPA Authority to Regulate Air Pollutants

EPA's regulatory authority extends to air pollutants, which, as discussed above, are defined broadly under the Act and include SO₂, NO_x, CO₂, and mercury emitted into the ambient air. Such a general statement of authority is distinct from an EPA determination that a particular air pollutant meets the specific criteria for EPA action under a particular provision of the Act. A number of specific provisions of the Act are potentially applicable to these pollutants emitted from electric power generation.² Many of these specific provisions for EPA action share a common feature in that the exercise of EPA's authority to regulate air pollutants is linked to determination by the Administrator regarding the air pollutants' actual or potential harmful effects on public health, welfare or the environment. See also sections 108, 109, 111(b), 112, and 115. See also sections 202(a), 211(c), 231, 612, and 615. The legislative history of the 1977 Clean Air Act Amendments provides extensive discussion of Congress' purposes in adopting the language used throughout the Act referencing a reasonable anticipation that a substance endangers public health or welfare. One of these purposes was "to emphasize the preventative or precautionary nature of the act, i.e., to assure that regulatory action can effectively prevent harm before it occurs, to emphasize the predominant value of protection of public health." H.R. Rep. No. 95294 95th Cong., 1st Sess, at 49 (Report of the Committee on Interstate and Foreign Commerce). Another purpose was "[t]o assure that the health of

² See, e.g., section 108 (directs Administrator to list and issue air quality criteria for each air pollutant that causes or contributes to air pollution that may reasonably be anticipated to endanger public health or welfare and that is present in the ambient air due to emissions from numerous or diverse mobile or stationary sources); section 109 (directs Administrator to promulgate national primary and secondary ambient air quality standards for each air pollutant for which there are air quality criteria, to be set at levels requisite to protect the public health with an adequate margin of safety (primary standards) and to protect welfare (secondary standards)); Section 110 (requires States to submit state implementation plans (SIPs) to meet standards); Section 111 (b) (requires Administrator to list, and set federal performance standards for new sources in, categories of stationary sources that cause or contribute significantly to air pollution that may reasonably be anticipated to endanger public health or welfare); section 111(d) (states must establish performance standards for existing sources for any air pollutant (except criteria pollutants or hazardous air pollutants) that would be subject to a performance standard if the sources were a new source), section 112(b) (lists 188 hazardous air pollutants and authorizes Administrator to add pollutants to the list that may present a threat of adverse human health effect or adverse environmental effects); section 112(d) (requires Administrator to set emissions standards for each category or subcategory of major and area sources that the Administrator has listed pursuant to section 119(c)); section 112(n)(1)(A) (requires Administrator to study and report to Congress on the public health hazards reasonably anticipated from emissions of limited hazardous air pollutants from electric utility steam generating units, and requires regulation if appropriate and necessary); section 115 (Administrator may require state action to control certain air pollution if, on the basis of certain reports, she has reason to believe that any air pollutant emitted in the United States causes or contributes to air pollution that may be reasonably anticipated to endanger public health or welfare in a foreign country that has given the United States reciprocal rights regarding air pollution control) Title IV (establishes cap-and-trade system for control of SO₂ from electric power generation facilities and provides for certain controls on NO_x).

susceptible individuals, as well as healthy adults, will be encompassed in the term 'public health,'..." Id. at 50. "Welfare" is defined in section 302(h) of the Act, which states:

[a]ll language referring to effects on welfare includes, but is not limited to, effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being, whether caused by transformation, conversion, or combination with other air pollutants.³

EPA has already regulated SO₂, NO_x, and mercury based on determinations by EPA or Congress that these substances have negative effects on public health, welfare, or the environment. While CO₂, as an air pollutant, is within EPA's scope of authority to regulate, the Administrator has not yet determined that CO₂ meets the criteria for regulation under one or more provisions of the Act. Specific regulatory criteria under various provisions of the Act could be met if the Administrator determined under one or more of those provisions that CO₂ emissions are reasonably anticipated to cause or contribute to adverse effects on public health, welfare, or the environment.

C. EPA Authority to Implement an Emissions Cap-and-Trade Approach

The specific provisions of the Clean Air Act that are potentially applicable to control emissions of the pollutants discussed here can largely be categorized as provisions relating to either state programs for pollution control under Title I (e.g., sections 107, 108, 109, 110, 115, 126, and Part D of Title I), or national regulation of stationary sources through technology-based standards (e.g., sections 111 and 112). None of these provisions easily lends itself to establishing market-based national or regional emissions cap-and-trade programs.⁴

The Clean Air Act provisions relating to state programs do not authorize EPA to require states to control air pollution through economically efficient cap-and-trade programs and do not provide full authority for EPA itself to impose such programs. Under certain provisions in Title I, such as section 110, EPA may facilitate regional approaches to pollution control and encourage states to cooperate in a regional, cost-effective emissions cap-and-trade approach (see Notice of Proposed Rulemaking: Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone, 62 F.R. 60318 (Nov. 7, 1997)). EPA does not have authority under Title I to require states to use such measures, however, because the courts have held that EPA cannot mandate specific emission control measures for states to use in meeting the general provisions for attaining ambient air quality standards. See Commonwealth of Virginia v. EPA, 108 F.3d 1397 (D.C. Cir. 1997). Under certain limited circumstances where states fail to carry out their responsibilities under Title I of the Clean Air Act, EPA has authority to take certain actions, which might include establishing a cap-and-trade

³ The language in Section 302(h) listing specific potential effects on welfare, including the references to weather and climate, dates back to the 1970 version of the Clean Air Act.

⁴ Title IV of the Act provides explicit authority for a cap and trade program for SO₂ emissions from electric power generating sources.

program.⁵ Yet EPA's ability to invoke these provisions for federal action depends on the actions or inactions of the states.

Technology-based standards under the Act directed to stationary sources have been interpreted by EPA not to allow compliance through intersource cap-and-trade approaches. The Clean Air Act provisions for national technology-based standards under sections 111 and 112 require EPA to promulgate regulations to control emissions of air pollutants from stationary sources. To maximize the opportunity for trading of emissions within a source. EPA has defined the term "stationary source" expansively, such that a large facility can be considered a "source." Yet EPA has never gone so far as to define as a source a group of facilities that are not geographically connected, and EPA has long held the view that trading across plant boundaries is impermissible under sections 111 and 112. See, e.g., National Emission Standards for Hazardous Air Pollutants for Source Categories; Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry, 59 Fed. Reg. 19402 at 19425-26 (April 22, 1994).

III. Conclusion

EPA's regulatory authority under the Clean Air Act extends to air pollutants, which, as discussed above, are defined broadly under the Act and include SO₂, NO_x, CO₂, and mercury emitted into the ambient air. EPA has in fact already regulated each of these substances under the Act, with the exception of CO₂. While CO₂ emissions are within the scope of EPA's authority to regulate, the Administrator or has made no determination to date to exercise that authority under the specific criteria provide under any provision of the Act.

With the exception of the SO₂ provisions focused on acid rain, the authorities potentially available for controlling these pollutants from electric power generating sources do not easily lend themselves to establishing market-based national or regional cap-and-trade programs, which the Administration favors for addressing these kinds of pollution problems. Under certain limited circumstances, where states fail to carry out their responsibilities under Title I of the Act, EPA has authority to take certain actions, which might include establishing a cap-and-trade program. However, such authority depends on the actions or inactions of the states.

⁵ For example, section 110(c) requires EPA to promulgate a Federal implementation plan where EPA finds that a state has failed to make a required submission of a SIP or that the SIP or SIP revision does not satisfy certain minimum criteria, or EPA disapproves the SIP submission in whole or in part in addition, section 126 provides that a State or political subdivision may petition the Administrator for certain findings regarding emissions from certain stationary sources in another state. If the Administrator grants the petition, she may establish control requirements applicable to sources that were the subject of the petition.

EPA Proposes First National Reporting on Greenhouse Gas Emissions

Release date: 03/10/2009

Contact Information: Cathy Milbourn, 202-564-4355 / milbourn.cathy@epa.gov

(Washington, D.C. – March 10, 2009) The U.S. Environmental Protection Agency today proposed the first comprehensive national system for reporting emissions of carbon dioxide and other greenhouse gases produced by major sources in the United States.

“Our efforts to confront climate change must be guided by the best possible information,” said EPA Administrator Lisa P. Jackson. “Through this new reporting, we will have comprehensive and accurate data about the production of greenhouse gases. This is a critical step toward helping us better protect our health and environment – all without placing an onerous burden on our nation’s small businesses.”

In developing the reporting requirements, EPA considered the substantial amount of work already completed and underway in many states, regions and voluntary programs.

Greenhouse gases, like carbon dioxide, are produced by the burning of fossil fuels and through industrial and biological processes. Approximately 13,000 facilities, accounting for about 85 percent to 90 percent of greenhouse gases emitted in the United States, would be covered under the proposal.

The new reporting requirements would apply to suppliers of fossil fuel and industrial chemicals, manufacturers of motor vehicles and engines, as well as large direct emitters of greenhouse gases with emissions equal to or greater than a threshold of 25,000 metric tons per year. This threshold is roughly equivalent to the annual greenhouse gas emissions from just over 4,500 passenger vehicles. The vast majority of small businesses would not be required to report their emissions because their emissions fall well below the threshold.

The direct emission sources covered under the reporting requirement would include energy intensive sectors such as cement production, iron and steel production, and electricity generation, among others.

The first annual report would be submitted to EPA in 2011 for the calendar year 2010, except for vehicle and engine manufacturers, which would begin reporting for model year 2011.


EPA estimates that the expected cost to comply with the reporting requirements to the private sector would be \$160 million for the first year. In subsequent years, the annualized costs for the private sector would be \$127 million.

EPA is developing this rule under the authority of the Clean Air Act. The proposed rule will be open for public comment for 60 days after publication in the Federal Register. Two public hearings will be held during the comment period.

More information on the proposed rule: <http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>

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Last updated on Tuesday, April 28th, 2009.

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Mandatory Greenhouse Gas Reporting Rule

Proposed Mandatory Greenhouse Gas Reporting Rule

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UPDATE – Proposed Mandatory GHG Reporting Rule Announcement in Federal Register; the public comment period is open until June 9, 2009.

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Background

In response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110-161), EPA has proposed a rule that requires mandatory reporting of greenhouse gas (GHG) emissions from large sources in the United States.

The proposed rule would collect accurate and comprehensive emissions data to inform future policy decisions.

In general, EPA proposes that suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions submit annual reports to EPA. The gases covered by the proposed rule are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulfur hexafluoride (SF₆), and other fluorinated gases including nitrogen trifluoride (NF₃) and hydrofluorinated ethers (HFE).

The proposed rule was signed by the Administrator on March 10, 2009. On April 10, 2009, the proposed rule was published in the *Federal Register* (www.regulations.gov) under Docket ID No. EPA-HQ-OAR-2008-0508:

- * [Preamble \(PDF\)](#) (161 pp, 4.1MB, [About PDF](#))
- * [Proposed Rule \(PDF\)](#) (126 pp, 1.6MB, [About PDF](#))
- * [Supporting Documents in the Docket](#)

In addition, technical analyses developed in support of the proposed rule may be found here:

- * [Regulatory Impact Analysis \(PDF\)](#) (260 pp, 5.9MB, [About PDF](#))
- * [Technical Support Documents for the Proposed Rule](#)

Submitting Comments on Proposed Rule

The public comment period is open until June 9, 2009, 60 days following publication in the *Federal Register*.

You will need Adobe Acrobat Reader, available as a free download, to view some of the files on this page. See [EPA's PDF page](#) to learn more about PDF, and for a link to the free Acrobat Reader.

No Extension of the Comment Period:

- [Letter from Acting Administrator for the Office of Air and Radiation \(PDF\)](#) (2pp, 84 KB, [About PDF](#))

Written Comments

Written comments on the proposed rule (Docket ID No. EPA-HQ-OAR-2008-0508) may be submitted using the following instructions:

- [Instructions for submitting written comments \(PDF\)](#) (2 pp, 16KB, [About PDF](#)).

When providing comments, please submit them with reference to Docket ID No. EPA-HQ-OAR-2008-0508.

Public Hearings

Two public hearings were held for this proposal—on April 6 and 7, 2009 in Arlington, VA, and on April 16, 2009 in Sacramento, CA:

- [Federal Register Notice of Public Hearings \(PDF\)](#), (2 pp, 72.7KB, [About PDF](#))

Resources

- [Press Release](#)
- [Power point presentation providing a general overview of the Proposed Mandatory Greenhouse Gas Reporting Rule \(PDF\)](#) (23 pp, 444KB, [About PDF](#))
- [General Fact Sheet for the Proposed Mandatory GHG Reporting Rule \(PDF\)](#) (2 pp, 30.2KB, [About PDF](#))
- [Information Sheets for Each of the Source Categories Covered in the Proposed Rule](#)
- [Frequently Asked Questions](#)
- [Consolidated Appropriations Act \(PDF\)](#) (613 pp, 1.42MB, [About PDF](#)). See page 285 for the appropriations language on mandatory GHG emissions reporting.
- [Consolidated Appropriations Act, Conference Report \(PDF\)](#) (230 pp., 1.02MB, [About PDF](#)). See page 1254 (page 94 of the PDF file) for an explanatory statement providing more detail on the GHG reporting rule.

Contact Us

For general questions about the proposed rule, fill out the electronic form on the [Contact Us](#) page. Additional information related to the proposed rule will be posted on this site as it becomes available. EPA is also operating a hotline for general and administrative questions about the proposal which can be accessed via phone at 1-877-GHG-1188 or through the [Contact Us](#) page.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 24 2009

OFFICE OF
AIR AND RADIATION

Ms. Karin Ritter
Manager, Regulatory and Scientific Affairs
The American Petroleum Institute
1220 L Street, NW
Washington, D.C. 20005-4070

Dear Ms. Ritter:

Thank you for your letter dated April 16, 2009, to the U.S. Environmental Protection Agency's (EPA) Docket Center in which you request an extension of the comment period for the Notice of Proposed Rulemaking (NPRM) for the Mandatory Reporting of Greenhouse Gases for 30 days beyond the current deadline of June 9, 2009 (74 FR 16448). I appreciate your recognition of the scope and complexity of the NPRM.

Due to the time sensitive nature of this rulemaking and the urgent need to finalize it to allow for 2010 data collection, we have proposed a 60 day comment period. The data submitted under this rulemaking will help inform future policies in the Administration and in Congress, so it is imperative to allow for enough time to finalize the rule before the end of 2009. In addition, the FY08 Appropriations Act requires EPA to issue a final rule by June 26, 2009. Although we will not be able to complete the rulemaking by that date, it further emphasizes the necessity of completing it in a timely manner.

EPA recognizes that the NPRM, the associated Technical Support Documents, and the additional analyses contained in the docket may take considerable time to review. To that end, we posted the NPRM on March 10, 2009, the day it was signed by the Administrator. We also opened the docket and posted other resources such as the Regulatory Impact Analysis and source-specific information sheets on our website approximately two weeks before the NPRM appeared in the Federal Register to provide additional time for review. In addition, we have provided numerous resources, including overview briefings and factsheets as well as shorter information sheets for nearly each subpart of the rule, on our website (<http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>) in order to facilitate the review of this package.

The Agency must balance any request for an extension of the comment period with our obligation to comply with the Appropriations Act and the need to collect the data to inform future policy development. Given these considerations, we are not extending the date of the formal comment period past the June 9, 2009 deadline.

Again, thank you for your interest in supporting our efforts to collect accurate data. The Agency is committed to maintaining an open rulemaking process on all of our efforts. Please contact me if you have any further questions on this or any other rule.

Sincerely,

A handwritten signature in cursive script that reads "Elizabeth Craig". The signature is written in black ink and is positioned above the printed name and title.

Elizabeth Craig
Acting Assistant Administrator



http://www.epa.gov/climatechange/emissions/ghg_infosheets.html

Last updated on Monday, June 8th, 2009.

Climate Change - Greenhouse Gas Emissions

You are here: [EPA Home](#) » [Climate Change](#) » [Greenhouse Gas Emissions](#) » [Proposed Mandatory Greenhouse Gas Reporting Rule](#) Information Sheets for Each of the Source Categories Covered in the Proposed Rule

Information Sheets for Each of the Source Categories Covered in the Proposed Rule

This series of information sheets is intended to assist potential reporters and others to understand key provisions of the proposed rule. These information sheets are not intended to be a substitution for reviewing the rule itself. The "General Provisions" information sheet provides an overview of the source categories covered under this rule. The source specific information sheets highlight key information on each specific emission category. If you have additional questions about the rule please view the [FAQs](#), [contact EPA](#) directly via email, or download a [full copy of the proposal](#).

40 CFR, Section #	Rule Section and Source Category	EPA #
98.10	Subpart A—General Provisions (PDF) (4 pp, 90KB, About PDF)	430-F-09-006
	Subpart B—Reserved	
98.30	Subpart C—General Stationary Fuel Combustion Sources (PDF) (2 pp, 142KB, About PDF)	430-F-09-005
98.40	Subpart D—Electricity Generation (PDF) (2 pp, 48KB, About PDF)	430-F-09-045
98.50	Subpart E—Adipic Acid Production (PDF) (2 pp, 54KB, About PDF)	430-F-09-038
98.60	Subpart F—Aluminum Production (PDF) (2 pp, 80KB, About PDF)	430-F-09-029
98.70	Subpart G—Ammonia Manufacturing (PDF) (2 pp, 50KB, About PDF)	430-F-09-028
98.80	Subpart H—Cement Production (PDF) (2 pp, 61KB, About PDF)	430-F-09-017
98.90	Subpart I—Electronics Manufacturing (PDF) (2 pp, 67KB, About PDF)	430-F-09-022
98.100	Subpart J—Ethanol Production (PDF) (2 pp, 48KB, About PDF)	430-F-09-041
98.110	Subpart K—Ferroalloy Production (PDF) (2 pp, 51KB, About PDF)	430-F-09-034
98.120	Subpart L—Fluorinated Gas Production (PDF) (2 pp, 54MB, About PDF)	430-F-09-032
98.130	Subpart M—Food Processing (PDF) (2 pp, 48KB, About PDF)	430-F-09-042

98.140	Subpart N—Glass Production (PDF) (2 pp, 50KB, About PDF)	430-F-09-024
98.150	Subpart O—HCFC-22 Production and HFC-23 Destruction (PDF) (2 pp, 142KB, About PDF)	430-F-09-039
98.160	Subpart P—Hydrogen Production (PDF) (2 pp, 50KB, About PDF)	430-F-09-027
98.170	Subpart Q—Iron and Steel Production (PDF) (2 pp, 74KB, About PDF)	430-F-09-018
98.180	Subpart R—Lead Production (PDF) (2 pp, 52KB, About PDF)	430-F-09-031
98.190	Subpart S—Lime Manufacturing (PDF) (2 pp, 51KB, About PDF)	430-F-09-019
98.200	Subpart T—Magnesium Production (PDF) (2 pp, 53KB, About PDF)	430-F-09-033
98.210	Subpart U—Miscellaneous Uses of Carbonate (PDF) (2 pp, 47KB, About PDF)	430-F-09-007
98.220	Subpart V—Nitric Acid Production (PDF) (2 pp, 48KB, About PDF)	430-F-09-025
98.230	Subpart W—Oil and Natural Gas Systems (PDF) (2 pp, 55KB, About PDF)	430-F-09-010
98.240	Subpart X—Petrochemical Production (PDF) (2 pp, 55KB, About PDF)	430-F-09-023
98.250	Subpart Y—Petroleum Refineries (PDF) (4 pp, 64KB, About PDF)	430-F-09-021
98.260	Subpart Z—Phosphoric Acid Production (PDF) (2 pp, 40KB, About PDF)	430-F-09-030
98.270	Subpart AA—Pulp and Paper Manufacturing (PDF) (2 pp, 50KB, About PDF)	430-F-09-020
98.280	Subpart BB—Silicon Carbide Production (PDF) (2 pp, 41KB, About PDF)	430-F-09-040
98.290	Subpart CC—Soda Ash Manufacturing (PDF) (2 pp, 43KB, About PDF)	430-F-09-036
98.300	Subpart DD—Sulfur Hexafluoride (SF6) (PDF) (2 pp, 45KB, About PDF)	430-F-09-013
98.310	Subpart EE—Titanium Dioxide Production (PDF) (2 pp, 41KB, About PDF)	430-F-09-035
98.320	Subpart FF—Underground Coal Mines (PDF) (2 pp, 51KMB, About PDF)	430-F-09-012
98.330	Subpart GG—Zinc Production (PDF) (2 pp, 42KB, About PDF)	430-F-09-037
98.340	Subpart HH—Landfills (PDF) (2 pp, 56KB, About PDF)	430-F-09-009

98.350	<u>Subpart II—Wastewater Treatment (PDF)</u> (2 pp, 54KB, About PDF)	430-F-09-008
98.360	<u>Subpart JJ—Manure Management (PDF)</u> (2 pp, 48KB, About PDF)	430-F-09-026
98.370	<u>Subpart KK—Suppliers of Coal (PDF)</u> (2 pp, 67KB, About PDF)	430-F-09-011
98.380	<u>Subpart LL—Suppliers of Coal-based Liquids (PDF)</u> (2 pp, 133KB, About PDF)	430-F-09-043
98.390	<u>Subpart MM—Suppliers of Petroleum Products (PDF)</u> (2 pp, 70KB, About PDF)	430-F-09-014
98.400	<u>Subpart NN— Natural Gas and Natural Gas Liquids (PDF)</u> (2 pp, 50KB, About PDF)	430-F-09-004
98.410	<u>Subpart OO—Suppliers of Industrial GHG (PDF)</u> (2 pp, 53KB, About PDF)	430-F-09-015
98.420	<u>Subpart PP—Suppliers of Carbon Dioxide (PDF)</u> (2 pp, 46KB, About PDF)	430-F-09-016
See 40 CFR parts 86, 87, 89, 90, 94, 600, 1033, 1039, 1042, 1045, 1048, 1051, 1054, 1064, and 1065.	<u>Subpart QQ—Mobile—Vehicles and Engines—Sources (PDF)</u> (2 pp, 51KB, About PDF) Manufacturers of vehicles and engines would report GHG emissions under other existing listed rules.	430-F-09-047
	<u>Guide for State and Local Agencies (PDF)</u> (2 pp, 43KB, About PDF)	430-F-09-048
	<u>Guide for Small Businesses (PDF)</u> (2 pp, 57KB, About PDF)	430-F-09-049
	<u>Guide for the Agriculture and Livestock Sectors (PDF)</u> (2 pp, 63KB, About PDF)	430-F-09-059
	<u>Guide for Tribal Governments (PDF)</u> (2 pp, 36KB, About PDF)	430-F-09-060

Stationary Fuel Combustion Sources



Proposed Rule: Mandatory Reporting of Greenhouse Gases

Under the proposed Mandatory Reporting of Greenhouse Gases (GHGs) rule, owners or operators of facilities that emit 25,000 metric tons of GHGs per year or more (expressed as carbon dioxide equivalents) from stationary fuel combustion or that meet any other applicability requirements of the rule (see information sheet on General Provisions) would report emissions from stationary fuel combustion. Owners or operators would collect emission data; calculate GHG emissions; and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting.

How Is This Source Category Defined?

Under the proposal, stationary fuel combustion sources are devices that combust any solid, liquid, or gaseous fuel to:

- Produce electricity, steam, useful heat, or energy for industrial, commercial, or institutional use; or
- Reduce the volume of waste by removing combustible matter.

These devices include, but are not limited to, boilers, combustion turbines, engines, incinerators, and process heaters. Portable equipment or generating units designated as emergency generators in a permit issued by a state or local air pollution control agency would be excluded.

Facilities that contain stationary fuel combustion units, but do not contain a source in any other source category covered by the proposed rule, would not be required to submit a report if their aggregate maximum rated heat input capacity from all stationary fuel combustion units is less than 30 million British thermal units per hour (mmBtu/hr).

Electricity generating units that are subject to the acid rain program are covered under 40 CFR part 98, subpart D (Electricity Generation).

What GHGs Would Be Reported?

The proposal calls for facilities to report total carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) emissions from each fuel combustion unit. For each unit, CO₂, CH₄, and N₂O emissions would be reported separately for each type of fuel combusted. In addition, facilities would report any CO₂ emissions from sorbent use in air pollution control equipment.

How Would GHG Emissions Be Calculated?

Under the proposal, the following methodologies would be used to calculate CO₂, CH₄, and N₂O emissions:

- **Calculating CO₂ Emissions from Combustion**
Facilities would calculate CO₂ emissions using four methodological tiers, subject to certain restrictions based on unit size and fuel burned (see flow chart on page 3):
 - Tier 1 uses an emission factor that is multiplied by annual fuel use and a default heating value for that fuel.
 - Tier 2 uses an emission factor that is multiplied by annual fuel use and a measured heating value of that fuel.
 - Tier 3 uses a calculation based on annual fuel use and measured carbon content of that fuel.
 - Tier 4 requires a continuous emissions monitoring system (CEMS).

Combustion units that have certain types of existing CEMS in place and meet specific criteria would be required to use the Tier 4 methodology. This might require certain upgrades to the existing CEMS in order to comply with the Tier 4 methodology. Those upgrades will depend on the fuel burned and the CEMS currently installed on a unit.

Combustion units that are subject to the reporting requirements under EPA's Acid Rain Program would continue to measure CO₂ mass emissions using the 40 CFR part 75 methods and would report CO₂ emissions by converting the cumulative fourth quarter CO₂ emissions from short tons to metric tons.

- Calculating N₂O and CH₄ Emissions From Combustion
Most units would use an emission factor that is based on annual fuel use and heat value of fuel (using a default value prescribed in the rule if a measured heat value is not available). Units covered under EPA's Acid Rain Program and other units that monitor and report annual heat input under 40 CFR part 75 requirements would use an emission factor and the measured annual heat input.
- Calculating CO₂ Emissions From Sorbent Use
Fluidized bed boilers and units equipped with a wet flue gas desulfurization system or sorbent injection would use the calculation procedure provided in the rule to estimate CO₂ emissions from sorbent use.
- Calculating Biogenic CO₂ Emissions From Biomass Fuel Combustion
Facilities would estimate biogenic CO₂ emissions from the combustion of biomass fuels by choosing from among the same methodologies used for calculating CO₂ emissions from fossil fuel combustion, subject to certain restrictions based on the type of biomass fuel burned.
- Sampling and analysis of heating value and carbon content would be conducted monthly, weekly, or daily depending on the fuel and the size of the combustion unit.

What Information Would Be Reported?

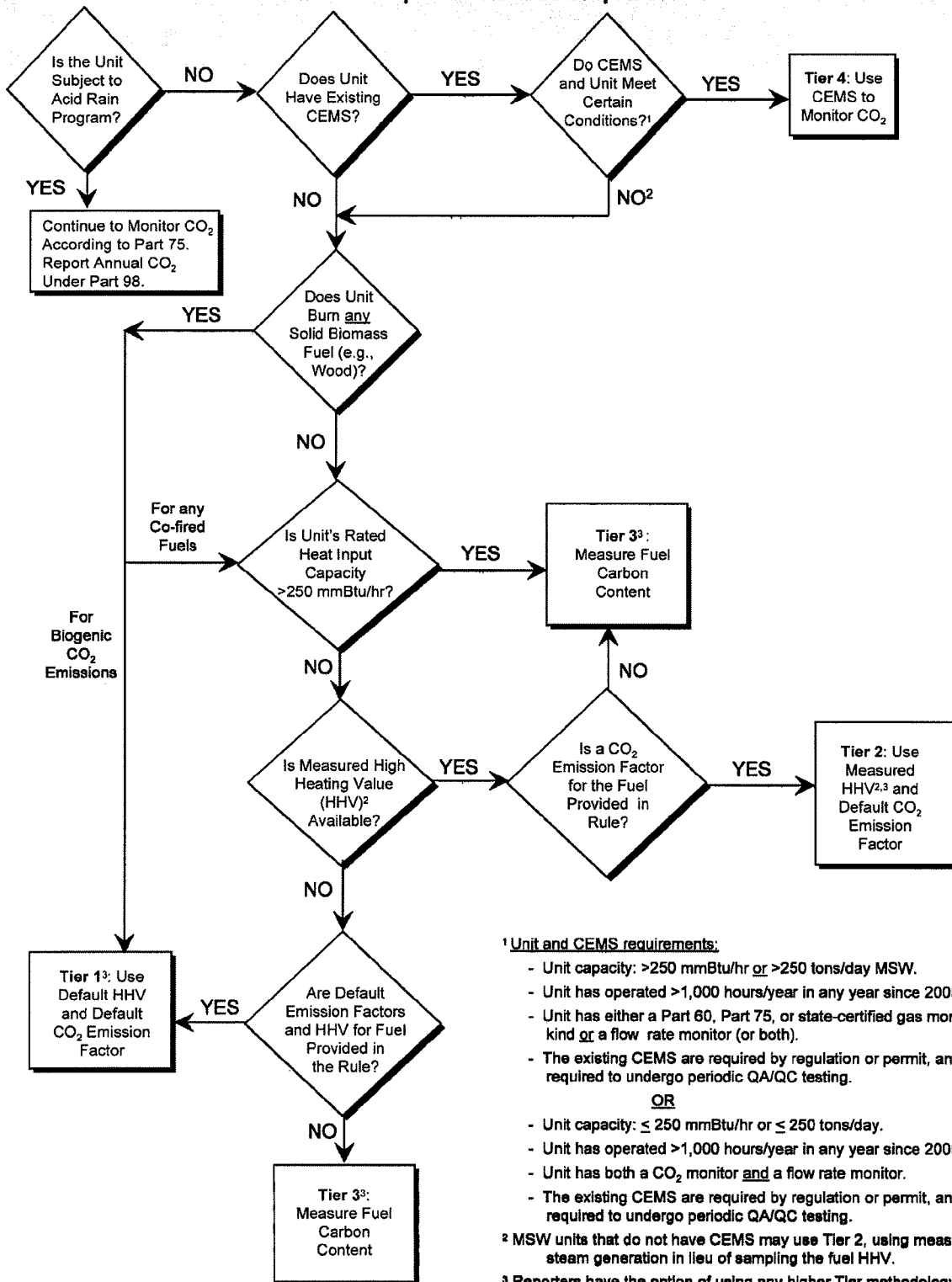
In addition to the information required by the General Provisions at 40 CFR 98.3(c), the proposal calls for facilities to report the following information:

- Facilities would report annual mass emissions for each GHG for each combustion unit. Emissions can be aggregated among multiple units under the following conditions:
 - Small units that have a combined maximum rated heat input capacity of 250 mmBtu/hr or less.
 - Units that share a common stack and use CEMS.
 - Oil-fired or gas-fired units that combust the same fuel, and the fuel is fed through a metered common pipe.
- Besides the GHG emissions estimates, facilities would report the measured inputs used in the emissions calculations (e.g., fuel use, carbon content, heating value), and all certification tests and major quality assurance tests for units using CEMS.
- Existing facilities that are required to report emissions from stationary combustion sources only (and no other source categories) would be able to submit an abbreviated emissions report for the first reporting year using simplified calculation methods.

For More Information

This series of information sheets is intended to assist reporting facilities/owners in understanding key provisions of the proposed rule. However, these information sheets are not intended to be a substitution for the rule. Visit EPA's Web site (www.epa.gov/climatechange/emissions/ghgrulemaking.html) for more information, including the proposed preamble and rule and additional information sheets on specific industries, or go to www.regulations.gov to access the rulemaking docket (EPA-HQ OAR-2008-0508). For questions that cannot be answered through the Web site or docket, call 1-877-GHG-1188.

General Stationary Fuel Combustion Requirements for CO₂ Proposed 40 CFR 98 Subpart C



¹ Unit and CEMS requirements:

- Unit capacity: >250 mmBtu/hr or >250 tons/day MSW.
- Unit has operated >1,000 hours/year in any year since 2005.
- Unit has either a Part 60, Part 75, or state-certified gas monitor of any kind or a flow rate monitor (or both).
- The existing CEMS are required by regulation or permit, and are also required to undergo periodic QA/QC testing.

OR

- Unit capacity: ≤ 250 mmBtu/hr or ≤ 250 tons/day.
- Unit has operated >1,000 hours/year in any year since 2005.
- Unit has both a CO₂ monitor and a flow rate monitor.
- The existing CEMS are required by regulation or permit, and are also required to undergo periodic QA/QC testing.

² MSW units that do not have CEMS may use Tier 2, using measured annual steam generation in lieu of sampling the fuel HHV.

³ Reporters have the option of using any higher Tier methodology.

April 1, 2009

Table 6. Examples of how the applicability criteria would apply at different types of facilities.		
Facility Description	Required to Submit a GHG Report?	Explanation
A lime manufacturing plant emits 22,000 tons per year (tpy) CO ₂ e from lime kilns.	Yes	Because lime manufacturing is a source category that is listed in Table 1, the facility would submit a report regardless of the amount of GHGs emitted.
A pulp mill emits 22,000 tpy CO ₂ e in combined emissions from stationary fuel combustion, digester vessels, carbonates, and wastewater treatment operations.	No	Because pulp and paper manufacturing is a source category listed in Table 2, the facility would report only if emissions are 25,000 tpy CO ₂ e or more.
A cheese manufacturing plant contains: <ul style="list-style-type: none"> • A gas-fired boiler that emits 15,000 tpy CO₂e; • A biomass-fired boiler that emits 10,000 tpy CO₂e; and • A wastewater treatment operation that emits 9,000 tpy CO₂e. 	No	Because food processing is a source category listed in Table 2, the facility would report if emissions are 25,000 tpy CO ₂ e or more. Because combustion of biogenic fuels is excluded from the applicability computation, nonbiogenic GHG emissions for the facility are 24,000 tpy CO ₂ e.
An assembly plant emits 30,000 tpy CO ₂ e from a coal-fired boiler.	Yes	Assembly plants are not a listed source category in Tables 1 or 2, but the facility nevertheless would submit a report because emissions from stationary fuel combustion are 25,000 tpy CO ₂ e or more.
A university emits 24,000 tpy CO ₂ e from a cogeneration unit and 2,000 tpy CO ₂ e from coal storage.	No	Because the rule does not prescribe a method for calculating GHG emissions from coal storage, coal storage emissions are not counted in determining applicability.
An industrial gas company emits 24,000 tpy from the production of SF ₆ .	Yes (as a supplier) No (as a facility)	The company would be subject to reporting as a supplier (40 CFR part 98, subpart OO) because all industrial GHG suppliers would report emissions from product sales. The company would not report fugitive emissions from the SF ₆ production processes (40 CFR part 98, subpart L) because emissions are below 25,000 tpy CO ₂ e threshold for Table 2 source categories.
A municipal solid waste landfill generates an amount of CH ₄ equivalent to 40,000 tpy CO ₂ e, but collects and combusts 75 percent of the CH ₄ , emitting only 10,000 tpy CO ₂ e.	Yes	For a municipal landfill, the 25,000 tpy CO ₂ e reporting threshold is based on gas generation, not on actual emissions.
A petrochemical plant also has an onsite wastewater treatment operation and stationary fuel combustion units. Total facility emissions are 24,000 tpy CO ₂ e.	Yes	Because petrochemical production is a source category listed in Table 1, the facility would report emissions from all source categories for which the rule contains calculation methods (including wastewater treatment and stationary fuel combustion), regardless of the magnitude of the emissions from the other collocated source categories.
A semiconductor manufacturing facility produces 900 m ² of silicon per year and operates fuel combustion devices that collectively emit 26,000 tpy CO ₂ e.	Yes	Because the facility produces less than 1,080 m ² of silicon per year, the silicon manufacturing process does not meet the definition of semiconductor manufacturing, as defined in Table 1. Therefore, it would evaluate emissions from fuel combustion sources. Because emissions from stationary fuel combustion exceed 25,000 tpy CO ₂ e, the facility would report emissions from fuel combustion, but not from semiconductor manufacturing.