

***INTERNATIONAL, NATIONAL, AND
STATE RESPONSES TO CLIMATE CHANGE –
A SUMMARY OF EMERGING REGULATORY
FRAMEWORKS***

A WHITE PAPER PREPARED FOR THE
WASHINGTON REALTORS®



MARTEN LAW GROUP PLLC
CLIMATE CHANGE & SUSTAINABILITY PRACTICE GROUP
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This white paper was prepared by Marten Law Group PLLC's Climate Change & Sustainability Practice Group to summarize emerging international, national, and state regulatory frameworks responding to climate change. This white paper is not intended as legal advice for any particular client or any particular circumstance. Anyone seeking advice on climate change issues should contact a qualified attorney.

Dustin T. Till

**Climate Change & Sustainability Practice Group
Marten Law Group PLLC
1191 Second Avenue, Suite 2200
Seattle, Washington 98101
206.292.2600**

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I. Introduction

Successfully addressing global climate change presents a profound long-term challenge for governments, businesses, and society at large. Unlike other types of air pollutants which have primarily local or regional effects, greenhouse gas emissions contribute to a problem that is global in nature. Many greenhouse gases remain in, and migrate freely through, the earth's atmosphere, such that a ton of carbon dioxide emitted in Spokane, Washington contributes to climate change no differently than a ton of carbon dioxide emitted in Mumbai, India. There is growing scientific, political, and legal acknowledgment that successfully mitigating climate change's worst effects and adapting to inevitable environmental changes will require coordinated and aggressive efforts on the international, national, and local levels.

In response to the global challenge of climate change, many nations have committed to binding greenhouse gas emission reduction requirements under the Kyoto Protocol. The United States has not yet established federal-level greenhouse gas emission requirements. In an effort to balance emission reductions and economic competitiveness, current federal climate change policy favors voluntary emission reductions and investments in clean energy technology over binding emission caps. States and local jurisdictions, however, have adopted a broad range of measures aimed at reducing greenhouse gas emissions and preparing for environmental changes such as rising sea levels, fresh water scarcity, and altered agricultural growing seasons.

Washington is on the forefront of state- and local-level climate change regulation. Washington has adopted legislation requiring the state to reduce its annual greenhouse gas emissions to 1990 levels by 2020, and 50 percent below 1990 levels by 2050. While emissions from fossil-fuel power plants and motor vehicles are obvious targets for emission reduction requirements, achieving Washington's legislatively-mandated goals will require reductions from all economic sectors – notably the transportation and development sectors.

The Washington Department of Ecology is currently evaluating a broad range of emission reduction strategies that will directly and indirectly impact the residential and commercial real estate markets, including mitigating emissions from new developments as part of the project review process, incorporating climate change into land use planning documents, and adopting increased energy efficiency and green building requirements for existing and new buildings. Ecology will present its initial legislative and regulatory recommendations to the Washington Legislature in December 2008. Furthermore, local jurisdictions such as the City of Seattle and King County are adopting an ever-increasing range of climate change regulations and incentives that will influence how, when, and where development occurs in coming decades. It is certain that state and local climate change regulations adopted over the past years are but the tip of the (melting) iceberg.

This white paper is a primer on international, federal, state, and local climate change regulations, and is intended to assist Washington REALTORS® prepare policy positions for the 2009 Washington legislative session. This Section briefly describes the greenhouse effect and global climate change, the potential environmental and economic

impacts of climate change on Washington, and the challenges of achieving the State's emission reduction targets. Section II summarizes the emerging international regulatory framework for addressing climate change. Section III discusses the federal government's current climate change policies, which are focused on voluntary measures and clean energy development investments. Finally, Section IV analyzes emerging state and local climate change regulations in Washington.

A. The Greenhouse Effect & Global Climate Change

The “greenhouse effect” refers to the process where greenhouse gases such as carbon dioxide, methane, nitrous oxide, and certain synthetic chemicals retain heat in the atmosphere by trapping outgoing energy.¹ Carbon dioxide, the principal greenhouse gas, is naturally occurring and readily absorbed by “sinks” such as oceans, plants, and vegetation. Prior to the Industrial Revolution, natural carbon dioxide emissions and sinks were in a state of general equilibrium.² Increased human (*i.e.*, anthropogenic) carbon dioxide emissions attributable to fossil fuel combustion, industrial processes, and land use changes have exceeded the capacity of natural sinks and, as a result, excess carbon dioxide accumulates in the atmosphere.³ Globally, atmospheric concentrations of carbon dioxide have increased from about 280 parts per million (ppm) in the 18th century to 383 ppm in 2007.⁴

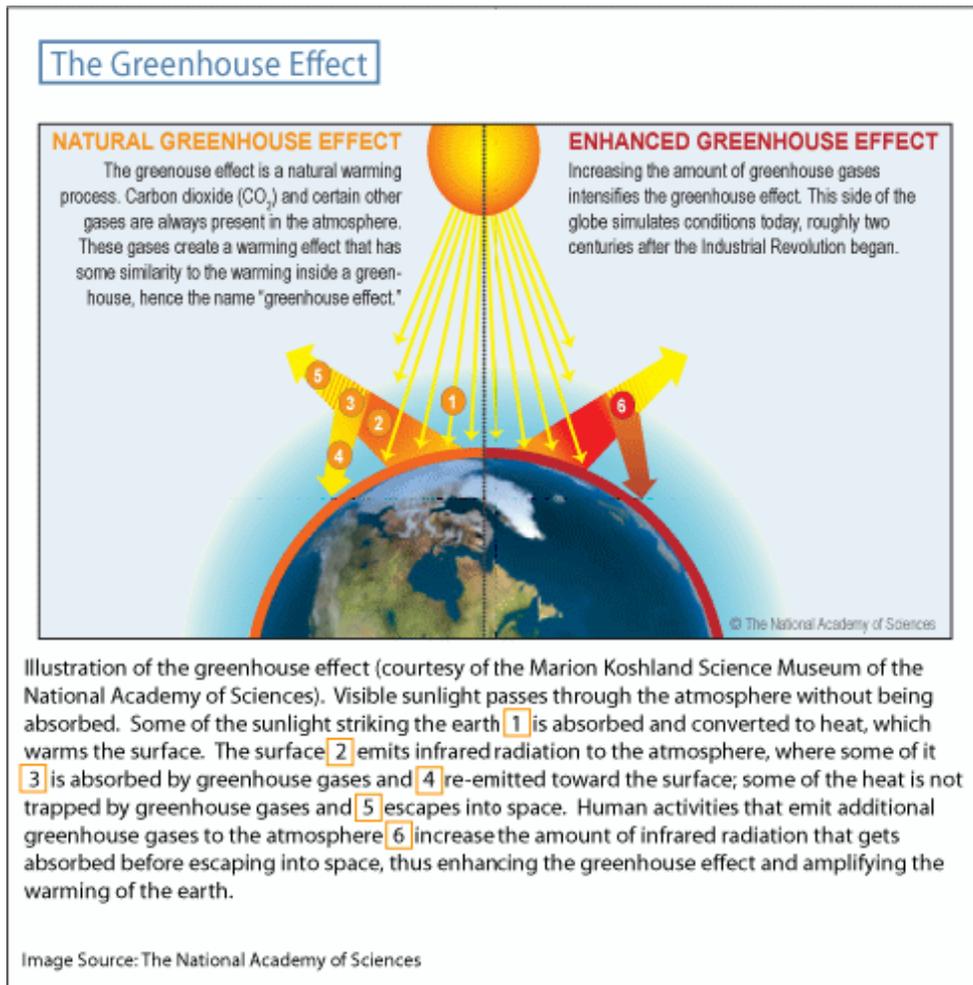
¹ U.S Environmental Protection Agency, 2008 Report on the Environment at 2-62 (May 2008), *available at* <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=190806>.

² The National Academies, Understanding and Responding to Climate Change – Highlights of the National Academies Reports at 5-6 (2008), *available at* <http://dels.nas.edu/basc/climate-change/>.

³ *Id.*

⁴ Committee on Environmental & Natural Resources - National Science & Technology Council, Scientific Assessment of the Effects of Global Change on the United States at 2 (May 2008), *available at* <http://www.climate-science.gov/Library/scientific-assessment/Scientific-AssessmentFINAL.pdf>.

Figure 1 – The Greenhouse Effect⁵



Increasing atmospheric concentrations of greenhouse gases are accompanied by increasing global temperatures. Temperature readings from around the globe show a pronounced warming trend during the past thirty years.⁶ Indeed, nine of the ten warmest years on record have occurred during the past decade.⁷ The warming trend indicated by surface temperature data is corroborated by a variety of evidence, including increasing ocean temperatures, shrinking mountain glaciers, and decreasing polar ice cover.⁸ The International Panel on Climate Change (IPCC), which has prepared four assessment reports on climate change over the past two decades, recently concluded that “warming of

⁵ Figure courtesy of the Pew Center on Global Climate Change – http://www.pewclimate.org/global-warming-basics/facts_and_figures/climate_science_basics/.

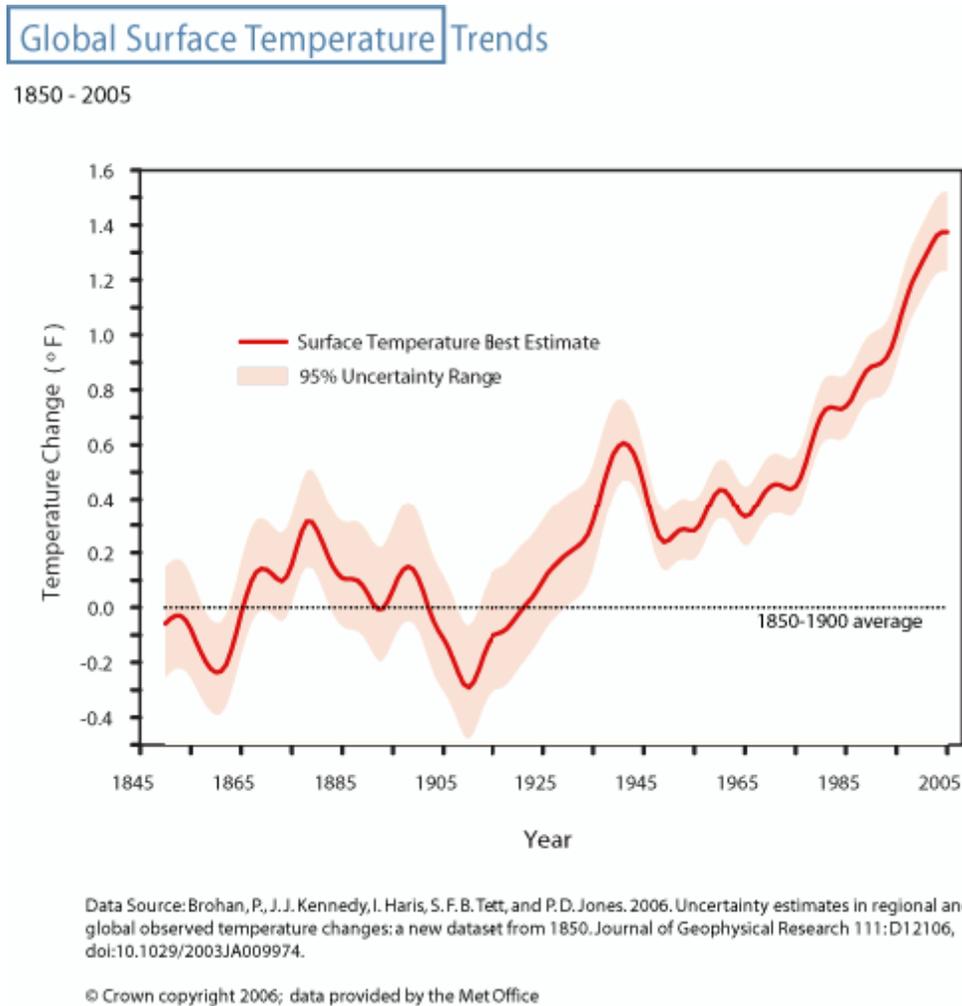
⁶ Understanding and Responding to Climate Change, *supra* n.2, at 4.

⁷ *Id.*

⁸ *Id.*

the climate system is unequivocal,”⁹ and that “[m]ost of the global average warming over the past 50 years is very likely due to anthropogenic [greenhouse gas] increases.”¹⁰

Figure 2 – Atmospheric CO₂ Concentrations & Global Temperature¹¹



B. Impacts on Washington State

Absent reductions in greenhouse gas emission trends, the IPCC predicts that global surface temperatures will likely rise 2.0 – 11.5°F by 2100.¹² Projected warming will

⁹ IPCC, *Climate Change 2007 – Fourth Assessment Synthesis Report* at 30 (A. Allali, et al. eds., Nov. 2007), available at http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf. The IPCC’s Fourth Assessment Report presents the conclusions of more than 2,500 expert reviewers, over 800 contributing authors, and 450 lead authors from more than 130 countries. The IPCC, along with former Vice President Al Gore, won the 2007 Nobel Peace Prize.

¹⁰ *Id.* at 72.

¹¹ Figure courtesy of the Pew Center on Global Climate Change - http://www.pewclimate.org/global-warming-basics/facts_and_figures/temp_ghg_trends/.

likely result in widespread environmental changes, including rising sea levels, contracting snow cover, increased heat waves and heavy precipitation events, increased rates of extinction, and widespread displacement of vulnerable, low-lying communities.¹³ The effects of warming on water resources, energy production, crop production, and natural resources are already being felt globally and in the United States.¹⁴

While confidence in specific regional and local climate change predictions is not as high as confidence in global temperature predictions, it is increasingly clear that climate change will significantly impact Washington. Indeed, scientists estimate that average temperatures in the Pacific Northwest will warm 0.5°F per decade.¹⁵ In 2007, the University of Washington Climate Impacts Group issued a report evaluating the impacts of climate change on Washington.¹⁶ The report's key findings highlight the range of environmental impacts that may be experience in Washington, including:

- **Rising Sea Levels** – Washington's coastal waters may rise 6 inches by 2050 and 14 inches by 2100. Much higher sea level rises (up to 4 feet) by 2100 are possible.¹⁷
- **Hydrology** – Precipitation will increasingly fall as rain rather than snow, and snowmelt will occur earlier. These hydrologic changes will impact irrigation, hydropower production, adromonous fish such as salmon, water accumulation and availability, and municipal stormwater infrastructure.¹⁸
- **Agriculture and Irrigation** – Rising temperatures will impact both crop productivity and irrigation demands and availability.¹⁹
- **Forests** – Forests will be susceptible to increasingly severe fires and insect outbreaks.²⁰
- **Human Health** – Rising temperatures will increase flood risk, aggravate air quality problems, and exacerbate certain diseases.²¹

The broad range of probable environmental impacts will have far reaching consequences for Washington's economy, including necessary expenditures for the modification of

¹² Fourth Assessment Synthesis Report, *supra* n.9, at 45.

¹³ *Id.* at 46-54.

¹⁴ *See generally*, Scientific Assessment of the Effects of Global Change on the United States, *supra* n.4, at 102-211.

¹⁵ Washington Dep't of Ecology, Impacts of Climate Change on Washington's Economy: A Preliminary Assessment of Risks and Opportunities at 17 (Nov. 2006), *available at* <http://www.ecy.wa.gov/pubs/0701010.pdf>.

¹⁶ U.W. Climate Impacts Group, A Comprehensive Assessment of the Impacts of Climate Change on the State of Washington (Dec. 2007), *available at* http://www.ecy.wa.gov/climatechange/InterimReport/020608_AppO_CIG.pdf.

¹⁷ *Id.* at 12.

¹⁸ *Id.* at 13.

¹⁹ *Id.* at 20-21.

²⁰ *Id.* at 29-30.

²¹ *Id.* at 45-46.

waterfront infrastructure to adapt to rising sea levels, expenditures for increased wild fire preparedness and response, and also the anticipated loss of agricultural revenue.²²

C. Washington's Greenhouse Gas Emissions

As discussed fully in Section IV, Washington has committed to reducing greenhouse gas emissions to 1990 levels by 2020, and 50 percent below 1990 levels by 2050. Local jurisdictions such as King County and the City of Seattle have also adopted greenhouse gas emission reduction targets. While much media attention is given to regulating large greenhouse gas emission sources such as coal-fired power plants and major industrial facilities, emission reduction obligations will cut across the entire economy – including the transportation, residential, and commercial sectors.

Washington's emission reduction targets are ambitious. In 2005, activities in Washington emitted approximately 95 million metric tons (MMt) of gross carbon dioxide equivalents (CO₂e), or 1-percent of total U.S. emissions.²³ Without any mitigation strategies (*i.e.*, a “business as usual” approach), Washington's gross emissions are expected to increase to 103 MMt CO₂e by 2010 and 122 MMt CO₂e by 2020.²⁴ Washington has committed itself to not only slowing the projected growth of emissions, but actually returning them to 1990 levels and below. Indeed, achieving the goal of 1990 levels by 2020 requires an absolute reduction of 33.6 MMt CO₂e, or 27 percent below expected emissions under a business as usual scenario.²⁵

Figure 3 - How Much Is A Metric Ton of CO₂?

- 1 Mt CO₂ = 2,204 pounds.
- One gallon of gasoline = 19 pounds of CO₂.
- 2,320 miles at 20 mpg = 1 Mt CO₂.
- Washington Annual CO₂ emissions per capita = 15 MtCO₂e.

Washington has a unique emission profile due to its abundant hydroelectric resources. Electrical generation accounts for 34 percent of greenhouse gas emissions nationally, but only for 20 percent of emissions in Washington.²⁶ Transportation fuel combustion correspondingly accounts for a higher proportion of Washington's emissions (47 percent)

²² See generally, Impacts of Climate Change on Washington's Economy, *supra* n.15.

²³ Washington Dep't of Ecology, Washington State Greenhouse Gas Inventory and Reference Case Projections, 1990-2020 at ES-1 (Dec. 2007), available at http://www.ecy.wa.gov/climatechange/docs/WA_GHGInventoryReferenceCaseProjections_1990-2020.pdf

A common unit of measurement or metric (carbon dioxide equivalent) is generally used to measure volumes of the six primary greenhouse gases - carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, each of which has a different impact (known as global warming potential). Gross emissions do not account for carbon dioxide removed by forestry and agricultural sinks. Washington's net greenhouse gas emissions (*i.e.*, all emissions less all sinks) in 2005 were approximately 65 MMt CO₂e. In other words, agricultural and forest resources removed approximately 30 MMt CO₂e from the atmosphere in 2005.

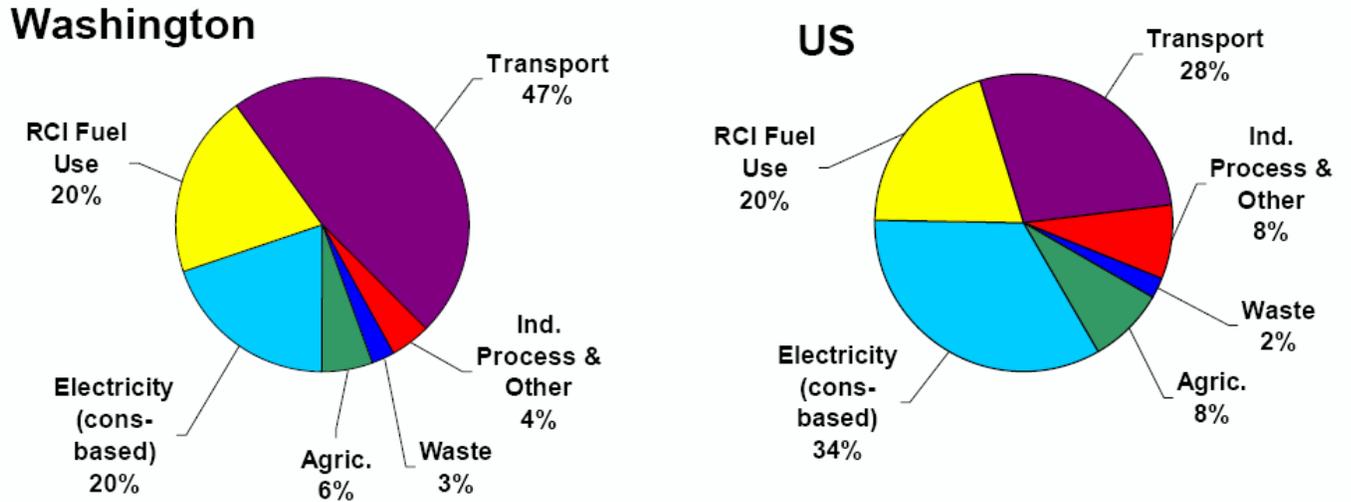
²⁴ *Id.* at ES-5.

²⁵ Washington's 1990 emissions are estimated at 88.4 MMt CO₂e.

²⁶ *Id.* at 8. “RCI Fuel Use” reflects fuel consumed by residential and commercial buildings and industrial processes not otherwise accounted for in the electrical generation figure. RCI emissions include, for example, residential oil and gas furnaces and on-site power generators at industrial facilities.

than it does nationally (28 percent). Figure 4 (below) summarizes Washington's emissions by sector and compares them to national averages.

Figure 4 – Washington and US Emissions by Sector, 2005²⁷



Due to the relative lack of large fossil fuel electrical generation facilities and because efforts to increase vehicle fuel efficiency standards are currently stalled in federal court, it is apparent that early action on climate change will focus in large part on reducing emissions from the built environment through land use planning, transportation planning, greenhouse gas mitigation requirements for new projects, and energy efficiency requirements. Emerging emission reduction strategies will impact how, when, and where development occurs, as well as the cost of constructing and operating residential, commercial, and industrial facilities.

²⁷ Figure courtesy of the Washington Department of Ecology, *id.* at 8.

II. International Regulatory Framework

Climate change is the quintessential global environmental problem, as emissions from all countries have, to varying degrees, contributed to rising atmospheric greenhouse gas concentrations. Stabilizing greenhouse gas emissions at a level that avoids dangerous interference with the global environment will require coordinated action from industrialized and developing nations alike. Furthermore, while adapting to rising sea levels and other environmental consequences of climate change presents a challenge for all countries, the most vulnerable countries often have the fewest resources for adapting to, and are the least responsible for, climate change.²⁸

The international community has been working to develop mechanisms for mitigating and adapting to climate change since 1990. The current international regulatory regime is primarily organized around the United Nations Framework Convention on Climate Change and the Kyoto Protocol.

A. The United Nations Framework Convention on Climate Change

Climate change entered the international political consciousness in 1990 when the IPCC released its First Assessment Report. Despite a degree of scientific uncertainty, the IPCC concluded that anthropogenic greenhouse gas emissions appeared to be contributing to rising global temperatures and that climate change should be an issue of international concern.²⁹ Two years later, the United Nations Framework Convention on Climate Change (UN Framework) was ratified during the U.N. Conference on Environment and Development in Rio de Janeiro (also known as the Earth Summit).³⁰ Currently, over 195 countries and regional economic groups, including the United States, have ratified the UN Framework.³¹

Rather than setting out binding greenhouse gas emission limits, the UN Framework establishes a process for implementing measures designed to “stabiliz[e] . . . greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous interference with the climate system.”³² In order to achieve its objectives, the UN Framework commits member nations to certain actions, including: (1) preparing national greenhouse gas emission and sink inventories; (2) implementing national greenhouse gas mitigation and adaptation plans; (3) cooperating in the development and transfer of emission

²⁸ See generally, United Nations Framework Convention on Climate Change, *Climate Change: Impacts, Vulnerabilities and Adaptation in Developing Countries* (2007), available at http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/txt/pub_07_impacts.pdf.

²⁹ International Panel on Climate Change, *First Assessment Report* (JT Houghton et al. eds., Cambridge University Press 1990). For more information on the IPCC, see generally www.ipcc.ch.

³⁰ United Nations Framework Convention on Climate Change (1992), available at <http://unfccc.int/resource/docs/convkp/conveng.pdf>.

³¹ United Nations Framework Convention on Climate Change Status of Ratification (Aug. 22, 2007), available at http://unfccc.int/files/essential_background/convention/status_of_ratification/application/pdf/unfccc_conv_rat.pdf.

³² UN Framework Convention on Climate Change, *supra* n.28, at Article 2.

reduction technologies; and (4) cooperating in scientific research on climate change.³³ Recognizing that mitigating and adapting to climate change may result in disproportionate burdens, the UN Framework ties developing countries' commitments to financial and technological assistance from developed countries.³⁴

B. The Kyoto Protocol

In December 1997, U.N. Framework members met in Kyoto, Japan and agreed that enforceable emission limitations were necessary to stabilize atmospheric greenhouse gas concentrations. The ensuing Kyoto Protocol established binding greenhouse gas emission reduction targets for developed countries and countries transitioning to a market economy (known as Annex I countries) from 2008-2012.³⁵ While specific reduction targets vary from country to country, Annex I signatories have committed to reducing emissions by an average of 5.2% below 1990 levels.³⁶ To date, 181 countries representing nearly 64 percent of global greenhouse gas emissions have ratified the Kyoto Protocol.³⁷ President William J. Clinton signed the Kyoto Protocol in 1997, but the Senate refused to ratify it on grounds that compliance would potentially damage the U.S. economy. President George W. Bush withdrew support for the Kyoto Protocol in 2001, echoing the Senate's concerns that it exempted major emitting countries such as China and India and would "cause serious harm to the U.S. economy."³⁸ The United States and Kazakhstan are the only U.N. Framework signatories that have not ratified the Kyoto Protocol.

Rather than rigidly mandating how countries achieve their emission reduction commitments, the Kyoto Protocol relies on three market-based mechanisms (also known as "flexible mechanisms") to achieve emission reductions:

- **International Emissions Trading:** Under the Protocol's emission trading program, Annex I (*i.e.*, developed or transitional) countries must comply with annual emission limits which decrease over time. A country's allowable emissions are subdivided into tradable units (known as Assigned Amount Units or AAUs) representing the right to emit one ton of CO₂e. Member countries allocate or auction AAU emission credits to regulated entities, whether coal fired power plants or other major greenhouse gas emission sources, who are allowed to freely trade them.³⁹

³³ *Id.* at Article 4(2).

³⁴ *Id.* at Article 4(7).

³⁵ The Kyoto Protocol to the United Nations Framework Convention on Climate Change (1998); available at <http://unfccc.int/resource/docs/convkp/kpeng.pdf>.

³⁶ *Id.* at Article 3 and Annex B.

³⁷ Kyoto Protocol Status of Ratification (May 2008), available at http://unfccc.int/files/kyoto_protocol/status_of_ratification/application/pdf/kp_ratification.pdf.

³⁸ Letter from President George W. Bush to Senators Hagel, Helms, Craig, and Roberts (Mar. 13, 2001); available at <http://www.whitehouse.gov/news/releases/2001/03/20010314.html>.

³⁹ Kyoto Protocol, *supra* n. 36, at Article 17. The detailed protocols for the Protocol's emission trading scheme were adopted in 2001 at COP-7 in Marrakesh. UNFCCC, The Marrakesh Accords & Marrakesh Declaration (2001), available at http://unfccc.int/cop7/documents/accords_draft.pdf. The European Union's Emissions Trading System (EU ETS) was inspired by, but established independently of, the Kyoto

- **Joint Implementation:** Joint Implementation (JI) permits developed countries to increase their allowable emissions by investing in emission reduction projects in other developed or emerging economy countries (*e.g.*, Russia) where emission reduction costs are lower. JI projects result in investments and technology transfers that facilitate additional emission reductions in emerging economy host countries. JI transactions must result in reductions or removals “additional to any that would otherwise occur.”⁴⁰
- **Clean Development Mechanisms:** Similarly to JI projects, Clean Development Mechanism (CDM) projects allow developed countries to invest in emission reduction or removal projects in developing (rather than developed or emerging economy) countries. Because the developing countries hosting CDM projects have not committed to binding emission reductions, CDM projects are subject to a third-party verification process.⁴¹

Because the costs associated with reducing emissions vary from country to country, the Kyoto Protocol’s flexible mechanisms permit countries to determine the most cost-effective methods for reducing their emissions. The Protocol’s market-based mechanisms gave rise to an international market trading in a new commodity – emission reductions or removals. In 2007, nearly 3,000 MMtCO₂e valued at approximately \$64 billion were traded on the international carbon market.⁴²

C. The Bali Roadmap

The Kyoto Protocol’s first commitment period runs from 2008-2012. In December 2007 at COP-13 in Bali, participating countries, as well as the United States, adopted a framework for finalizing a binding agreement by 2009 that will govern implementation of the Kyoto Protocol after the first commitment period expires in 2012.⁴³

Protocol. For more information on the EU ETS, please *see* A. Denny Ellerman & Paul L. Joskow, Pew Center on Global Climate Change, The European Union’s Emission Trading System in Perspective (May 2008); *available at* <http://www.pewclimate.org/docUploads/EU-ETS-In-Perspective-Report.pdf>.

⁴⁰ Kyoto Protocol, *supra* n.35, at Article 6.

⁴¹ *Id.* at Article 12. In 2007, CDM projects accounted for over 87-percent of project-based emission transactions. Karan Capoor & Philippe Ambrosi, The World Bank Institute, State and Trends of the Carbon Market 2008 at 2 (May 2008); *available at* http://carbonfinance.org/docs/State___Trends--formatted_06_May_10pm.pdf. Over 70 percent of CDM credits were generated via projects located in China. *Id.*

⁴² State and Trends of the Carbon Market, *supra* n.41, at 1.

⁴³ For more information on COP-13, including the Bali Roadmap, *see generally* http://unfccc.int/meetings/cop_13/items/4049.php.

III. Federal Climate Change Policy, Regulation, & Litigation

The United States has yet to institute a mandatory greenhouse gas emission cap or a binding schedule for reducing the nation's aggregate emissions. Instead, federal climate change policy has focused on voluntary programs, clean energy research investments, and non-binding international agreements as the preferred strategies for slowing the overall growth of the United States' greenhouse gas emissions. Federal energy law and policy, while generally directed towards ensuring reliable, low-priced energy, also plays a significant role in decreasing (or increasing) the nation's aggregate greenhouse gas emissions. Furthermore, litigants (including numerous states and environmental organizations) have had some success employing traditional federal environmental laws such as the Clean Air Act, the National Environmental Policy Act, and the Endangered Species Act as tools for addressing climate change.

It appears that federal climate change policy may drastically shift in the wake of the upcoming Presidential election – including the potential for direct federal regulation of



greenhouse gas emissions. At least seven bills proposing binding greenhouse gas emission caps and a market-based trading system were introduced to the 110th Congress.⁴⁴ Although the leading bill, the Lieberman-Warner Climate Security Act (S. 2191/S. 3036), failed to pass out of the Senate, it is likely that Congress will debate climate change legislation again next year. Indeed,

the two major party Presidential candidates, Senator John McCain (R-Ariz.) and Senator Barack Obama (D-Ill.), support mandatory greenhouse gas emission reductions.⁴⁵

A. Federal Climate Change Policy & Energy Policy

1. Near- and Long-Term Greenhouse Gas Emission Goals

On February 14, 2002, President George W. Bush announced a new climate change strategy under which the United States would strive to reduce its “greenhouse gas

⁴⁴ Lieberman-Warner Climate Security Act (S. 2191/S. 3036); Low Carbon Economy Act (S. 1766); Climate Stewardship & Innovation Act (S.280); Global Warming Pollution Reduction Act (S. 309); Global Warming Reduction Act (S. 485); Safe Climate Act of 2007 (H.R. 1590); Climate Stewardship Act (H.R. 620). *See generally* Pew Center for Global Climate Change, Economy-Wide Cap-and-Trade Proposals in the 110th Congress (May 30, 2008), available at <http://www.pewclimate.org/docUploads/Cap&TradeChart.pdf>.

⁴⁵ For more information Senator McCain's climate change platform, *see generally* <http://www.johnmccain.com/Informing/Issues/da151a1c-733a-4dc1-9cd3-f9ca5caba1de.htm>. For more information on Senator Obama's climate change platform, *see generally* <http://www.barackobama.com/issues/energy/>.

intensity” 18 percent by 2012.⁴⁶ Greenhouse gas intensity represents the ratio of greenhouse gas emissions to units of economic output.⁴⁷ For example, in 2002, the United States emitted 183 metric tons of greenhouse gases per million dollars GDP.⁴⁸ According to the White House, reducing greenhouse gas intensity by 18-percent would reduce emissions to 151 metric tons per million dollars GDP and would result in emission reductions comparable to the average emission reductions achieved by nations participating in the Kyoto Protocol.⁴⁹ Voluntary partnerships and programs play a central role in achieving near-term emission reductions, while climate science and technology investments are focused on longer-term reductions.

In April 2008, President Bush announced the second phase of the United States’ climate change policy, which addresses emissions beyond 2012.⁵⁰ Under the long-term goal, the United States will strive to stop the growth of greenhouse gas emissions by 2025. Similarly to the near-term goals announced in 2002, the 2008 goals are intended to be achieved through a combination of fuel efficiency, energy efficiency, and continued clean energy investments such as carbon sequestration rather than through legally binding emission caps. International agreements outside the Kyoto Protocol also play a central role in near- and long-term climate policy.

a. Near-Term Reductions: Voluntary Partnerships

Voluntary programs and partnerships with trade associations and individual companies play a central role in the United States’ current near-term climate change policy.⁵¹ In 2003, the Departments of Energy launched Climate VISION – Voluntary Innovative Sector Initiatives: Opportunities Now, a public-private partnership with business associations and trade groups in 14 energy-intensive sectors.⁵² Members of Climate VISION, which account for approximately 40 to 50 percent of the nation’s emissions, are developing and voluntarily implementing sector-based strategies for achieving the President’s near-term goal of reducing the economy’s greenhouse gas intensity 18 percent by 2012.⁵³ The Environmental Protection Agency (EPA) has also developed a

⁴⁶ See White House Global Climate Change Policy Book (Feb. 2002), available at <http://www.whitehouse.gov/news/releases/2002/02/climatechange.html>.

⁴⁷ A decrease in greenhouse gas intensity means that less energy is being used per unit of economic gain.

⁴⁸ White House Global Climate Change Policy Book, *supra* n.46.

⁴⁹ *Id.* Between 2004 and 2005, U.S. greenhouse gas intensity declined by 2.5%. Energy Information Administration, Emissions of Greenhouse Gases in the United States 2005 ix (2006), available at <http://www.eia.doe.gov/oiaf/1605/archive/gg06rpt/index.html>. Critics, however, contend that an 18 percent reduction in greenhouse gas intensity will merely slow emissions growth (rather than reverse emissions) and actually allow emissions to increase 12 percent within the same ten-year period. See, e.g., Pew Center on Global Climate Change, Analysis of President Bush’s Climate Change Plan (Feb. 2002); available at http://www.pewclimate.org/policy_center/analyses/response_bushpolicy.cfm.

⁵⁰ See also President George W. Bush, President Bush Discusses Climate Change (Apr. 16, 2008), available at <http://www.whitehouse.gov/news/releases/2008/04/20080416-6.html>.

⁵¹ For an overview of current climate change partnerships, see generally United States Bureau of Oceans & International Environmental & Scientific Affairs, USA Energy Needs, Clean Development & Climate Change at 3-10 (Oct. 30, 2006), available at <http://www.state.gov/g/oes/rls/or/2006/75337.htm>.

⁵² *Id.* at 4. For more information on ClimateVISION, see generally <http://www.climatevision.gov/>.

⁵³ *Id.*

voluntary partnership program – Climate Leaders – which currently works with over 170 private corporations to develop comprehensive climate change strategies, including performing corporate-wide emissions inventories, setting long-term efficiency and emission reduction goals, and reporting annual emissions.⁵⁴

In addition to Climate VISION and Climate Leaders, numerous other voluntary programs are aimed at reducing greenhouse gas emissions by promoting, among other things, energy efficiency, renewable power consumption, and waste elimination.⁵⁵

b. Long-Term Reductions: Science & Technology

The United States' current long-term climate change strategy involves funding for scientific research and investments in clean energy technologies, particularly carbon sequestration. In 2002, the Climate Change Science Program (CCSP), which includes thirteen federal departments and agencies, was established to improve scientific knowledge on climate history and variability, reduce uncertainty in climate predictions, and explore new options for managing risks presented by climate change.⁵⁶

Similarly, the Climate Change Technology Program manages clean technology investments from ten federal agencies.⁵⁷ While spread out among numerous technologies including biomass, hydrogen, and nuclear, federal investments in clean technology have emphasized carbon capture and sequestration.⁵⁸ Nearly 40 percent of U.S. greenhouse gas emissions are attributable to fossil fuel combustion for electrical energy.⁵⁹ Due to abundant supplies and low costs, fossil fuel combustion (notably coal) will continue to play an important role in energy generation for the foreseeable future. As a result, carbon capture and sequestration – the process of capturing and storing carbon dioxide emissions from fossil fuel power plants and storing them in deep underground geologic formations – has been identified as a critical technology for significantly reducing greenhouse gas emissions.⁶⁰

Since October 2007, the Department of Energy's Regional Carbon Sequestration Partnership has awarded over \$430 million for six large-scale geologic sequestration

⁵⁴ USA Energy Needs, *supra* n.51, at 4-5. For more information on Climate Leaders, *see generally* <http://www.epa.gov/stateply/>.

⁵⁵ For details on Federal voluntary partnership programs, please *see* U.S.E.P.A. Current and Near-Term Greenhouse Gas Reduction Initiatives, *available at* <http://www.epa.gov/climatechange/policy/neartermghgreduction.html>.

⁵⁶ USA Energy Needs, *supra* n.51, at 12-13. *See also* the Climate Change Science Program website: <http://www.climatescience.gov/>.

⁵⁷ *Id.* at 13-16. *See also* the Climate Change Technology Program website: <http://www.climatechange.gov/>.

⁵⁸ *Id.* at 14.

⁵⁹ *See* Emissions of Greenhouse Gases in the United States 2005, *supra* n.49. In 2005, for example, the electrical power sector generated approximately 2,375 MMt of carbon dioxide. *Id.*

⁶⁰ Stephen Siciliano, *Carbon Sequestration Called Best Way to Achieve Short-Term Reductions of Carbon Emissions*, 38 *Env't Rep. (BNA)* 2286 (Oct. 26, 2007).

projects.⁶¹ Furthermore, EPA is currently developing a nationwide permitting program that will govern commercial-scale geologic sequestration from fossil fuel power plants.⁶² EPA is expected to publish its draft rules in summer 2008.

c. International Cooperation

Although the United States has not committed to mandatory emission reductions under the Kyoto Protocol, it has entered into two multilateral international agreements addressing climate change. In 2006, the United States, China, India, Australia, Japan, and South Korea formed the Asia-Pacific Partnership on Clean Development and Climate, which favors promoting the development and transfer of clean energy technology over binding emission caps.⁶³ The Partnership's non-binding charter established a voluntary cooperative framework for developing and transferring clean technology among the partner countries.⁶⁴ The Partnership's actions are intended to "compliment but not replace the Kyoto Protocol."⁶⁵

Similarly, in May 2007, President George W. Bush announced the formation of the Major Economies Process on Energy Security and Climate Change.⁶⁶ The Major Economies Process is an alternative process for fostering post-2012 international collaboration on climate change. Consistent with the Asia-Pacific Partnership, the United States' objectives in the Major Economies Process are focused on technology development and transfer rather than binding emission reductions.⁶⁷

2. Greenhouse Gas Reporting

EPA is currently developing a mandatory greenhouse gas emission reporting program for U.S. companies. Reporting greenhouse gas emissions is viewed by many as a first step to support comprehensive emission reduction programs such as those being contemplated both in Congress and by many states. In order to craft policies to achieve the emission reductions required by the law, policymakers need up-to-date and accurate information regarding the source, size, and growth of emissions. This is particularly true for market-oriented approaches for reducing greenhouse gas emissions such as cap-and-trade legislation where reliable and transparent emissions data would be the foundation for developing allocation systems, reduction targets, and enforcement provisions.

Tucked into the \$500 billion omnibus budget package signed into law by President Bush in December 2007 is a provision that requires EPA to establish a mandatory program that

⁶¹ Press Release, Dep't of Energy, DOE Awards \$126.6 Million for Two Large-Scale Carbon Sequestration Projects (May 6, 2008), available at <http://www.doe.gov/news/6231.htm>.

⁶² Press Release, U.S.E.P.A., EPA To Develop Regulations for Geologic Sequestration of Carbon Dioxide (Oct. 11, 2007), available at http://yosemite.epa.gov/opa/admpress.nsf/names/hq_2007-10-11_carbon.

⁶³ Asia-Pacific Partnership on Clean Development & Climate Charter (Jan. 2006); available at <http://www.asiapacificpartnership.org/charter.pdf>.

⁶⁴ *Id.* at § 2.1.

⁶⁵ *Id.* at § 1.1.

⁶⁶ White House, Office of the Press Secretary Fact Sheet, A New International Climate Change Framework (May 31, 2007), available at <http://www.state.gov/g/oes/rls/fs/2007/92156.htm>.

⁶⁷ *Id.*

will require U.S. companies to report their greenhouse gas emissions.⁶⁸ The reporting provision directs EPA to publish draft reporting rules by August 2008, and final rules by June 2009. The law does not specify which industries must report or how often reporting must occur, but leaves those details to EPA. A significant issue for EPA in designing the new reporting program will be the extent to which it tries to harmonize its program with reporting regimes being developed by states or by voluntary registration programs such as the Climate Registry.⁶⁹

3. Energy Policy

By promoting or discouraging energy consumption (and attendant greenhouse emissions), federal energy policy is inextricably intertwined with climate change policy. In December 2007, President Bush signed the Energy Independence and Security Act of 2007 (the 2007 Energy Act)⁷⁰ into law, which contains numerous energy efficiency provisions, including:

- **Motor Vehicle Fuel Economy:** Requires the Department of Transportation to increase fuel economy standards (known as corporate average fuel economy, or CAFE) for new passenger vehicles and light trucks to 35 miles per gallon for model year 2020.⁷¹
- **Renewable Fuel Standards:** Requires EPA to develop regulations to increase the annual volume of biofuels, including cellulosic ethanol, biodiesel, and waste-derived ethanol, from 9 billion gallons in 2008 to 36 billion gallons in 2022.⁷²

⁶⁸ Consolidated Appropriations Act, 2008, Pub. L. No. 110-161, 121 Stat. 1844 (Dec. 26, 2007). *See also* Fred Sissine, Energy Independence and Security Act of 2007: A Summary of Major Provisions (Dec. 21, 2007), available at http://energy.senate.gov/public/_files/RL342941.pdf. Consistent with its obligations under the U.N. Framework, the United States prepares an annual report of greenhouse gas emissions by source and reductions by sinks. In April 2008, EPA published its most recent emissions report – Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006 (Apr. 15, 2008), available at <http://www.epa.gov/climatechange/emissions/usinventoryreport.html>. Furthermore, the Department of Energy has been operating a voluntary greenhouse gas registration program (known as the 1605b Registry) since 1992. 42 U.S.C. § 13385(b); *see also* Energy Information Administration, Voluntary Reporting of Greenhouse Gases 2005 – Summary (Dec. 2007), available at <http://www.eia.doe.gov/oiaf/1605/vrrpt/summary/introduction.html>. Currently, only coal-fired power plants are required to report their greenhouse gas emissions to the federal government. 40 C.F.R. § 75.10(a)(3)(i).

⁶⁹The Climate Registry is a collaboration between more than 30 states and several Canadian provinces to develop and manage a common greenhouse gas registry. The Climate Registry aims to standardize best practices in greenhouse gas emissions reporting and to establish a set of common reporting protocols that corporations, governments, and nonprofit groups can use nationwide to track emissions and coordinate policy. For more information on the Climate Registry, *see generally* <http://www.theclimateregistry.org/>.

⁷⁰ Energy Independence & Security Act of 2007, Pub. L. No. 110-140, 121 Stat. 1492 (Dec. 19, 2007).

⁷¹ *Id.* at § 102.

⁷² *Id.* at §§ 201-10.

- **Lighting & Appliance Efficiency:** Establishes new efficiency standards for incandescent lamps, and appliances such as refrigerators, residential boilers, and dishwashers.⁷³
- **Federal Buildings:** Requires 30 percent decreased total energy use in federal buildings by 2015.⁷⁴

B. Climate Change & Existing Federal Law

States and environmental groups have had some success addressing climate change under existing federal law, notably the federal Clean Air Act, the National Environmental Policy Act, and the Endangered Species Act. In the absence of federal legislation explicitly addressing greenhouse gas emissions, significant litigation under existing federal law is likely to continue.

1. The Federal Clean Air Act

The Clean Air Act is the primary federal statute regulating air pollutant emissions from stationary sources (e.g., power plants) and mobile sources (e.g., passenger cars).⁷⁵ To date, the most visible climate change litigation under the Clean Air Act has focused on whether EPA must regulate greenhouse gas emissions from mobile sources, and whether stringent motor vehicle fuel efficiency standards adopted by states run afoul of EPA's exclusive authority over mobile source emissions under the Clean Air Act.



In April 2007, the United States Supreme Court issued its landmark decision in *Massachusetts v. EPA*, holding that carbon dioxide and other greenhouse gases qualify as air pollutants which are potentially subject to regulation under the Clean Air Act.⁷⁶ Although EPA has yet to formally respond to the Supreme Court's holding, a decision by EPA to regulate greenhouse gases under the Clean Air Act will likely have far-reaching implications for a host of stationary and mobile sources.

a. *Massachusetts v. EPA*

States and environmental groups have been petitioning EPA to address climate change through Clean Air Act rulemaking for over eight years. In October 1999, twelve states and various environmental organizations filed a rulemaking petition which asked EPA to regulate greenhouse gas under section 202(a)(1) of the Clean Air Act, which requires EPA to develop standards for emissions from new motor vehicles that "cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health

⁷³ *Id.* at §§ 301-16, 321-25.

⁷⁴ *Id.* at § 431.

⁷⁵ The Clean Air Act is codified at 42 U.S.C. § 7401, *et seq.*

⁷⁶ *Massachusetts v. Env'tl Prot. Agency*, 127 S. Ct. 1438, 167 L. Ed.2d 248 (2007).

or welfare.”⁷⁷ Following a lengthy review and public comment period, EPA denied the rulemaking petition in September 2003.⁷⁸ Rather than addressing the merits of whether greenhouse gases “endanger public health or welfare,” EPA concluded that it lacked statutory authority to address global climate change under the Clean Air Act. EPA also contended that even if it did have statutory authority to regulate greenhouse gases, doing so would be unwise given scientific uncertainty and political and foreign policy considerations.⁷⁹

In April 2007, a sharply divided Supreme Court held that carbon dioxide and other greenhouse gases fell within the Clean Air Act’s “sweeping” and “unambiguous” definition of “air pollutant.”⁸⁰ While the Court acknowledged EPA’s “significant latitude as to the manner, timing, content, and coordination” of its rulemakings, the Court held that EPA’s “reasons for action or inaction must conform to the authorizing statute.”⁸¹ Thus, EPA acted arbitrarily and capriciously when it denied the rulemaking petition based on foreign relations and other policy factors.⁸² The Court remanded the matter back to EPA with instructions to resolve “[t]he statutory question [of] whether sufficient information exists to make an endangerment finding.”⁸³

EPA has yet to formally issue a determination of whether greenhouse gases endanger human health and the environment. In March 2008, EPA Administrator Stephen Johnson announced that EPA would open a public comment period sometime in 2008 that would outline various options for regulating greenhouse gases under the Clean Air Act and solicit public input on the issue.⁸⁴ Administrator Johnson’s letter does not commit EPA to any particular timeline, and it is likely that EPA’s ultimate response to *Massachusetts v. EPA* will come after the next administration assumes power in January 2009.

A determination that greenhouse gases threaten human health would not only require EPA to develop emission regulations for new motor vehicles, but could potentially open the door for widespread regulation of greenhouse gases from a broad range of mobile and stationary sources under the Clean Air Act.⁸⁵ Furthermore, an endangerment finding that

⁷⁷ Clean Air Act § 202(a)(1), 42 U.S.C. § 7521(a)(1).

⁷⁸ Control of Emissions from New Highway Vehicles and Engines, 68 Fed. Reg. 52922 (Sept. 8, 2003).

⁷⁹ *Id.*

⁸⁰ *Massachusetts*, 127 S. Ct. at 1459.

⁸¹ *Id.* at 1462.

⁸² *Id.* at 1463.

⁸³ *Id.*

⁸⁴ Letter from Administrator Johnson to Representative Waxman et al. (Mar. 27, 2008), available at <http://oversight.house.gov/documents/20080327170233.pdf>.

⁸⁵ In addition to the motor vehicle petition at issue in *Massachusetts*, EPA is currently considering additional rulemaking petitions by California and other states which address greenhouse gas emissions from a variety of mobile sources, including airplanes, ocean vessels, and nonroad engines such as agricultural, mining, and construction equipment. See California Petition for Rule Making Seeking the Regulation of Greenhouse Gas Emissions from Ocean-Going Vessels (Oct. 3, 2007), available at http://ag.ca.gov/cms_pdfs/press/N1474_Petition.pdf; NGO Petition for Rulemaking Under the Clean Air Act to Reduce the Emissions of Air Pollutants from Marine Shipping Vessels that Contribute to Global Climate Change (Oct. 3, 2007), available at http://www.oceana.org/fileadmin/oceana/uploads/Climate_Change/Marine_GHG_Petition_FINAL.pdf; Petition for Rule Making Seeking the Regulation of Greenhouse Gas Emissions from Aircraft (Nov. 6,

triggers EPA's obligation to develop greenhouse gas regulations has the potential to result in significant regulatory confusion. Based in large part on federal inaction, greenhouse gas regulation has largely been adopted on the state level, and it is unclear how federal regulations would affect the growing patchwork of state-level mandates. Ironically, regulatory action by EPA that applies nationwide could potentially precede federal climate change legislation – a concern that EPA raised in 2003 when it denied the motor vehicle petition at issue in *Massachusetts*.

b. State Clean Car Laws

In an effort to reduce transportation-related emissions, California, Washington, and a number of other states have attempted to adopt greenhouse gas emission standards for new passenger cars.⁸⁶ Nationally, emissions from the transportation sector account for over 31-percent of all carbon dioxide emissions, and efforts to adopt stringent vehicle emission standards play a critical role in efforts to achieve greenhouse gas caps that have been adopted in many states. However, EPA's recent rejection of the California standard leaves uncertain the fate of state-level emission standards for passenger cars and other motor vehicles.

As a general rule, the Clean Air Act prohibits states from adopting or enforcing motor vehicle emission standards.⁸⁷ Because California enacted automobile emissions regulations several years before the federal government did, there is a limited exception from the general rule of federal preemption. Specifically, EPA may grant a preemption waiver for emission standards adopted by California based on "compelling and extraordinary" circumstances.⁸⁸ Other states may, in turn, adopt the California standards so long as they are adopted at least two years prior to the model year to which they will apply.⁸⁹

In March 2008, EPA denied California's request for a waiver with respect to passenger vehicle emission standards the California legislature enacted in 2002.⁹⁰ EPA based its denial on grounds that the "effects of climate change in California are [not] compelling and extraordinary compared to the effects in the rest of the country."⁹¹ EPA's decision to

2007), available at http://cdn.sfgate.com/gate/pictures/2007/12/05/ga_aircraftpet6.pdf; and Petition for Rulemaking Seeking the Regulation of Greenhouse Gas Emissions from Nonroad Vehicles and Engines (Jan. 29, 2008), available at http://ag.ca.gov/cms_attachments/press/pdfs/n1522_finaldraftnonroadpetition3.pdf.

⁸⁶ In 2002, California adopted legislation (AB 1493) directing the California Air Resources Board (CARB) to adopt the maximum feasible and cost-effective method for reducing greenhouse gas emissions from motor vehicles. In response, CARB adopted emission standards in 2004 intended to apply to new passenger cars and light-duty trucks starting with model year 2009. California's standards are designed to reduce fleet-wide greenhouse gas emissions by 30 percent in 2016. Ca. Code Regs. tit. 13, § 1961.1. Washington and thirteen other states have adopted California's clean car standards.

⁸⁷ 42 U.S.C. § 7543(a).

⁸⁸ *Id.* at § 7543(b).

⁸⁹ *Id.* at § 7507.

⁹⁰ California State Motor Vehicle Pollution Control Standards; Notice of Decision Denying a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles, 73 Fed. Reg. 12156 (Mar. 6, 2008).

⁹¹ *Id.* at 12156-57.

reject California's emission standards has, for the time being, derailed the efforts by Washington and other states to implement those standards. The ultimate resolution of this issue, however, remains uncertain as California has filed a lawsuit challenging EPA's waiver denial.⁹²

2. The National Environmental Policy Act – *Center for Biological Diversity v. NHTSA*

Under the National Environmental Policy Act (NEPA), federal agencies must consider environmental consequences as part of their decision making process for major projects. Similarly to state-level environmental review statutes such as Washington's State Environmental Policy Act, NEPA requires agencies to prepare a detailed environmental impact statement (EIS) if a proposed action is likely to have significant environmental effects.⁹³ In recent years, a growing body of case law indicates that federal agencies must assess climate change impacts as part of their environmental review under NEPA; however, those cases do not necessarily obligate agencies to affirmatively mitigate greenhouse gas emissions because NEPA is a procedural rather than substantive statute.

In December 2007, the Ninth Circuit Court of Appeals held that the "impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impact analysis that NEPA requires agencies to conduct."⁹⁴ The Ninth Circuit's decision in *Center for Biological Diversity v. NHTSA* arose out of challenges to new fuel efficiency (CAFE) standards for light trucks and SUVs developed by the National Highway Traffic Safety Administration (NHTSA). NHTSA determined that its project did not require a full EIS under NEPA because the growth of carbon dioxide emissions from light trucks would be reduced by between 2.4 to 3.8 percent as compared to an earlier standard; thus emissions attributable to the standard were not "significant."⁹⁵ The Ninth Circuit, however, disagreed, holding that a decreased emission growth rate as compared to earlier CAFE standards "does not necessarily mean that [the new standard] will not have a 'significant effect' on the environment."⁹⁶

In light of the Ninth Circuit's strongly worded opinion, federal agencies will be hard pressed to avoid evaluating climate change impacts for a broad range of public and private projects requiring federal approvals or permits, such as energy facilities and transmission lines, casinos, landfills, mines, and transportation projects. Furthermore, the decision may extend to local and private development projects subject to state

⁹² *California v. EPA*, Appeal No. 08-70030 (9th Cir.).

⁹³ 42 U.S.C. § 4332(c).

⁹⁴ *Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 508 F.3d 508, 550 (9th Cir. 2007). Litigation addressing the issue of whether federal agencies must assess greenhouse gas emissions and other climate change impacts has been ongoing since at least 1990. See, e.g., *Los Angeles v. NHTSA*, 912 F.2d 478 (D.C. Cir. 1990) (per curiam) (holding that a theoretical one-percent increase in greenhouse gas emissions attributable to revised CAFE standards did not constitute a significant impact requiring analysis in an EIS).

⁹⁵ Final Environmental Assessment – National Highway Traffic Safety Administration Corporate Average Fuel Economy (CAFE) Standards (Mar. 29, 2006), available at http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/Rulemaking/Rules/Associated%20Files/2006_EA.pdf.

⁹⁶ *Center for Biological Diversity*, 508 F.3d at 557.

environmental review statutes such as the Washington State Environmental Policy Act, as case law interpreting such statutes frequently follows NEPA jurisprudence.⁹⁷ Indeed, the battle over climate change and environmental review has been waged largely at the state level.⁹⁸

3. The Endangered Species Act

In two opinions, a federal district court has required NOAA Fisheries and the U.S. Fish and Wildlife Service (the Services) to analyze climate effects on species during consultations performed under Section 7 of the Endangered Species Act (ESA).⁹⁹ Under Section 7(a)(2) of the ESA, federal agencies must ensure that “any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered ... or threatened species or result in the destruction or adverse modification of [designated critical] habitat...”¹⁰⁰ This requires analysis of both direct and indirect effects on the relevant species and its critical habitat, “together with



the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline.”¹⁰¹ Accordingly, climate change effects can be an element of the environmental baseline analyzed during consultation.¹⁰²

On May 15, 2008, the U.S. Department of Interior listed the polar bear as a threatened species under the ESA as a result of diminishing sea ice (*i.e.*, habitat loss) caused by climate change.¹⁰³ Many listing opponents argue that the listing will open litigation

⁹⁷ See, e.g., *Kucera v. State Dept. of Transp.*, 140 Wn.2d 200, 224, 995 P.2d 63 (2000) (holding that NEPA decisions and NEPA’s implementing regulations may be used to help interpret Washington’s SEPA).

⁹⁸ Numerous lawsuits challenging both private development projects and regional land-use plans have arose under California’s Environmental Quality Act and other state environmental review statutes. See generally Dustin T. Till, *Assessing Climate Change – Trends Under State Environmental Policy Acts and the National Environmental Policy Act*, 3 ABA Env’tl Impact Comm. Newsletter 1 (Nov. 2007), available at http://www.abanet.org/environ/committees/environtimpactassess/newsletter/nov07/EIA_Nov07.pdf.

⁹⁹ See *Pacific Coast Fed’n of Fishermen’s Ass’ns v. Gutierrez*, No. 06-00245, 2008 U.S. Dist. LEXIS 31462 (E.D. Cal. April 16, 2008); *Natural Resources Def. Council v. Kempthorne*, 506 F.Supp.2d 322 (E.D. Cal. 2007). The Endangered Species Act is codified at 16 U.S.C. §§ 1531 *et seq.*

¹⁰⁰ 16 U.S.C. § 1536(a)(2).

¹⁰¹ 50 CFR § 402.02.

¹⁰² Under Service regulations, the “environmental baseline” includes, among other impacts, all “past and present impacts of all Federal, State, or private actions and other human activities in the action area[.]” *Id.*

¹⁰³ Dep’t of the Interior, Fish and Wildlife Service, *Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Polar Bear (Ursus maritimus) Throughout its Range; Final Rule*, 50 CFR Part 17, 73 Fed. Reg. 28212-28303 (May 15, 2008); see also Dep’t of the Interior, Fish and Wildlife Service, *Special Rule for the Polar Bear (Ursus maritimus) Throughout its Range; Final Rule*, 50 CFR Part 17, 73 Fed. Reg. 28305-28318 (May 15, 2008); Memorandum from H. Dale Hall (USFWS) to Regional Directors, Regions 1-9 (May 14, 2008); Memorandum from M. Myers (USGS) to Director, USFWS, Subject: The Challenges Of Linking Carbon Emissions, Atmospheric Greenhouse Gas

floodgates, enabling environmental groups to challenge a broad spectrum of greenhouse gas-emitting activities under the ESA. However, in light of regulations and guidance issued concurrently with the listing, the reach of the listing will likely be far narrower than anticipated by the regulated community and environmental groups. Interior limited the regulatory impact of its decision by, among other things, indicating that consultation will not be required simply because a federal agency authorizes a project that will emit greenhouse gases.¹⁰⁴ In light of the listing parameters, it is highly unlikely that agency actions must undergo consultation to analyze impacts to climate-affected species that do not occur in or near the action area.

C. Prospects for the Future

To date, the federal government has generally declined to enact mandatory emission caps or binding emission requirements, due in large part to economic concerns. Congress, however, appears poised to adopt comprehensive climate change legislation, and both major party Presidential candidates have expressed support for binding greenhouse gas emission caps.

As noted above, at least seven climate change bills proposing economy-wide greenhouse gas emission caps and market-based cap-and-trade systems were introduced before the 110th Congress.¹⁰⁵ One of those bills, the Lieberman-Warner Climate Security Act of 2008 (S. 2191/S. 3036) passed out of the Senate Environment and Public Work Committee in December 2007. In June 2008, however, supporters failed to gather sufficient support to end floor debates and move the bill to a final vote by the Senate.

The Lieberman-Warner bill provides a general model of legislation that Congress may debate again in 2009. That bill would have establish a nationwide cap on greenhouse gas emissions with the objective of reducing those emissions to 15 percent below 2005 levels by the year 2020, and to 70 percent below 2005 levels by the year 2050.¹⁰⁶ To achieve these goals, the bill would have create an economy-wide emissions trading system similar to the one adopted by the European Union.

The Lieberman-Warner bill would have regulated emissions from the electric utility, transportation, and manufacturing industries, and would cover approximately 80% of the greenhouse gases emitted in the United States.¹⁰⁷ Covered facilities specifically included

Concentrations, Global Warming, and Consequential Impacts (May 14, 2008) (issued concurrently with the final listing rule).

¹⁰⁴ Memorandum from H. Dale Hall (USFWS) to Regional Directors, Regions 1-9 (May 14, 2008), available at http://www.doi.gov/issues/polar_bears/GHG%20Final.pdf. See also Special Rule for the Polar Bear (*Ursus maritimus*) Throughout its Range; Final Rule, 50 CFR Part 17, 73 Fed. Reg. 28305-28318 (May 15, 2008) (“the best scientific data currently available does not draw a causal connection between [greenhouse gas] emissions resulting from a specific Federal action and effects on listed species or critical habitat by climate change, nor are there sufficient data to establish the required causal connection to the level of reasonable certainty between an action’s resulting emissions and effect on species or critical habitat.”).

¹⁰⁵ See *supra* n.44.

¹⁰⁶ Lieberman-Warner Climate Security Act of 2008, S.2191, 110th Cong., § 1201 (2007).

¹⁰⁷ *Id.* at § 1202.

those that emit more than 10,000 MtCO₂e from the use of coal, all carbon dioxide emissions from the use of petroleum fuels, and all emissions from the use of natural gas. Different industries/economic sectors would have been regulated at different points in the economy. For example, the bill proposed regulating the transportation sector “upstream” at refineries and at facilities that import refined petroleum products, while regulating electric utilities and large manufacturing sources “downstream” at the facility or source of emissions.¹⁰⁸

Covered facilities would have been allocated emission allowances by EPA. An emission allowance represents an authorization to emit one Mt CO₂e.¹⁰⁹ At the end of each year, the owner or operator of a covered facility would be required to surrender emission allowances, or offset allowances, equal to the amount of greenhouse gases emitted by the facility over the course of the preceding year.¹¹⁰ Covered facilities, as well as any other lawful holder of an emission allowance, would have the flexibility to buy additional allowances or to sell surplus allowances generated from reducing their emissions. In meeting their compliance requirements, facilities would be permitted to deduct from their submission requirement emissions that have been geologically sequestered, destroyed, or used as feedstock and not released into the atmosphere.¹¹¹

The limited Senate debate on the Lieberman-Warner bill failed to resolve many significant issues that must be addressed before Congress adopts a national cap-and-trade system. For example, a growing number of states have adopted binding greenhouse gas emission caps or joined regional greenhouse gas trading systems, and the issue of whether the Lieberman-Warner bill would preempt those state and regional requirements is being debated. In May 2008, Senators Boxer (D-Ca.), Lieberman (I-Conn.), and Warner (R-Va.) introduced a substitute bill which proposed, among other things, \$560 billion over four decades for states that voluntarily discontinued their own cap-and-trade programs. Additional unresolved issues include: the appropriateness of cost containment provisions or “safety valves” that would permit emissions beyond the cap if the price of carbon rose above a predetermined level; credits for emission reduction actions taken prior to a federal cap (*i.e.*, early action credit); credits for international reforestation projects; and linkage with the European Trading System and other foreign markets. Furthermore, rising energy prices and general concerns about the U.S. economy will likely play a significant role in future Congressional climate change debates.

¹⁰⁸ *Id.*

¹⁰⁹ *Id.* at § 4.

¹¹⁰ *Id.* at § 1202.

¹¹¹ *Id.*

IV. Washington – State and Local Responses to Climate Change

In the absence of binding federal action on climate change, state and local governments have assumed a lead role in crafting emission reduction requirements and strategies for achieving them. Washington and at least seventeen other states have adopted greenhouse gas reduction targets, either through legislation or executive order.¹¹² In an effort to coordinate market-based approaches to achieving local emission goals, three regional emission trading systems are currently under development, including the Western Climate Initiative (WCI), the Regional Greenhouse Gas Initiative (RGGI), and the Midwest Greenhouse Gas Reduction Accord (MGGRA).¹¹³ States and local jurisdictions throughout the country are also enacting a host of other measures designed to reduce emissions associated with land use development, transportation, and energy production.

Washington is aggressively developing broad frameworks for reducing the state's greenhouse gas emissions. Washington has enacted legislation requiring the state to reduce its emissions to 1990 levels by 2020 and to 50 percent below 1990 levels by 2050. Washington's current legislation is only the first step in a rapidly evolving process, and there will be significant regulatory development over the next several months and in the next legislative session to address greenhouse gas emissions. Businesses, public entities, and non-profits are already positioning themselves this year to adapt to a changing regulatory and business climate that has far-reaching impacts. Existing state and local climate change mandates, as well as those currently under development, will likely play an increasingly significant role in determining when, where, and how residential and commercial development occurs, and the way in which businesses operate in Washington State.

This section summarizes state and local climate change efforts in Washington, including: (1) major legislation and emission reduction goals; (2) land use planning and the Growth Management Act; (3) the project review and the State Environmental Policy Act; (4) green building; (5) transportation; and (6) energy production and efficiency.

A. 1990 by 2020: Washington's Emission Reduction Requirements

1. Legislative Framework

In February 2007, Governor Gregoire issued Executive Order 07-02 which established a series of measurable goal designed to reduce Washington's contribution to global greenhouse gas emissions.¹¹⁴ Specifically, EO 07-02 committed the state to incrementally reduce its greenhouse gas emissions from all economic sectors as follows:

¹¹² Pew Center for Global Climate Change, State Greenhouse Gas Emission Targets (June 6, 2008), available at http://www.pewclimate.org/what_s_being_done/in_the_states/emissionstargets_map.cfm.

¹¹³ For information on the WCI, see generally Section IV(A)(3) and <http://www.westernclimateinitiative.org/>. For information on RGGI, see generally <http://www.rggi.org/>. For information on MGGRA, see generally <http://www.midwesterngovernors.org/govenergynov.htm>.

¹¹⁴ Executive Order 07-02 – Washington Climate Change Challenge (Feb. 7, 2007), available at http://www.governor.wa.gov/execorders/eo_07-02.pdf.

- 1990 levels by 2020;
- 25 percent below 1990 levels by 2035; and
- 50 percent below 1990 levels by 2050.

Later that year, the Legislature enacted ESSB 6001, which codified the nonbinding targets established in EO 07-02.¹¹⁵

Unlike current federal policy, which is aimed at *slowing* the growth of emissions, Washington’s emission reduction targets require the state to *reverse* the growth of emissions. Indeed, achieving the 2020 goal (1990 levels) requires absolute reduction of 33.6 MMt CO₂e, or 27-percent below expected emissions if no action was taken (*i.e.*, a “business as usual” or “BAU” approach).¹¹⁶

Figure 5 – Washington’s Greenhouse Gas Emission Targets

Year	Reduction Requirements	Absolute Reductions Below 2004 Levels ¹¹⁷
2020	1990 levels	10 MMt CO ₂ e
2035	25% below 1990 levels	30 MMt CO ₂ e
2050	50% below 1990 levels	50 MMt CO ₂ e

In March 2008, the Legislature passed HB 2815 which replaces the nonbinding emission goals adopted in ESSB 6001 with concrete, enforceable emission reduction requirements designed to ensure that the reduction targets are achieved.¹¹⁸ As discussed below, HB 2815 requires the Department of Ecology to implement, in coordination with other members of the WCI, a regional multi-sector, market-based cap-and-trade program for achieving emission reduction requirements by 2012.¹¹⁹

The regional cap-and-trade system, however, is only one mechanism available for reducing greenhouse gas emissions, and HB 2815 requires the state to assess other emission reduction strategies, including strategies which will likely impact residential and commercial development. For example, as discussed in Section IV(E) below, HB 2815 requires the Department of Transportation to adopt statewide goals for reducing annual per capita vehicle miles traveled (VMT), including adopting benchmarks to

¹¹⁵ See Engrossed Senate Substitute Bill 6001 (May 3, 2007), available at <http://apps.leg.wa.gov/billinfo/summary.aspx?year=2007&bill=6001>.

¹¹⁶ 1990 GHG emissions estimated at 84 MMtCO₂e and 2020 emissions are projected at 122 MMtCO₂e. Washington State Greenhouse Gas Inventory, *supra* n.23 at ES-2,5.

¹¹⁷ EO 07-02, *supra* n. 114.

¹¹⁸ House Bill 2815 (Mar. 13, 2008), available at <http://apps.leg.wa.gov/billinfo/summary.aspx?bill=2815&year=2007>.

¹¹⁹ HB 2815 at § 4.

decrease the annual per capita VMT as follows: 18 percent by 2020; 30 percent by 2035; and 50% by 2050.¹²⁰

HB 2815 also requires Ecology to develop a state-level emission reporting program – a requirement that may have the most immediate impact on businesses in the state.¹²³

Under the program, Ecology must identify a *de minimis* level of emissions below which reporting will not be required. The program must, however, require reporting by stationary sources (e.g., power plants, cement kilns) that produce at least 10,000 MtCO₂e of emissions annually and on-road motor vehicle fleets that produce at least 2,500 MtCO₂e of emissions annually. Reporting for these entities would begin in 2010 for year 2009 emissions.¹²⁴

Figure 6 - Select Emission Reduction Targets¹²¹	
Washington (ESSB-6001)	2020 – 1990 levels 2035 – 25% below 1990 2050 – 50% below 1990
California (AB-32)	2010 – 2000 levels 2020 – 1990 levels 2050 – 80% below 1990
Oregon (HB 3543)	2010 – Stop emissions growth 2020 – 10% below 1990 2050 – 75% below 1990
Lieberman-Warner (S. 2191/S. 3036)	2020 – 15% below 2005 2050 – 75% below 2005
Kyoto Protocol (average emission reductions) ¹²²	2008-2012 – 5.2% below 1990

Finally, HB 2815 directs Ecology and the Department of Community, Trade, and Economic Development (CTED) to submit a report to the Legislature by December 1, 2008 that includes, among other things:

- Information on the progress to date in achieving the required emission reduction targets;
- A request for additional resources and authority needed to limit and reduce emissions, including implementation of the most promising recommendations of the Governor’s Climate Advisory Team;

¹²⁰ HB 2815 at § 8.

¹²¹ Pew Center for Global Climate Change, State Greenhouse Gas Emission Targets, *supra* n.112.

¹²² Kyoto Protocol Article 3(1).

¹²³ HB 2815 at § 5.

¹²⁴ The reporting requirement has two noteworthy aspects. First, emissions from the burning of biomass are to be reported separately from emissions from fossil fuels because HB 2815 does not consider carbon dioxide emissions from the industrial combustion of biomass as greenhouse gases “as long as the region’s silvicultural sequestration capacity is maintained or increased.” Second, the law allows Ecology to defer the reporting requirement for emissions associated with commercial aircraft, rail, truck and marine vessels, until “there is a federal requirement to report these emissions” or “the department finds that there is a generally accepted reporting protocol for determining interstate emissions from these sources.” Accurate and transparent emission reporting provides regulators with information to assess compliance of regulated sources and measure progress on achieving emission reduction obligations, as well as provide reliable information for entities participating in market transactions.

- Recommendations for how local governments can participate in the regional trading system being developed by the WCI;
- Recommendations for how generation of electricity or fuels from landfill gas and anaerobic digesters may receive offset credits in the regional trading system being developed by the WCI; and
- Recommendations for how the state forestry and agricultural sectors may participate as offset providers in the regional trading system being developed by the WCI.¹²⁵

As noted in Section III(C) above, it is unclear what impact federal climate change legislation will have on state-level emission reduction requirements. For example, would a federal emission cap absolutely preempt state caps or would states be permitted to adopt more stringent emission reduction requirements? The federal Lieberman-Warner bill did not explicitly preempt state-level climate change laws, but proposed \$560 billion in incentives for states that voluntarily discontinued their own cap-and-trade programs in favor of a federal program. Debate over federal preemption, and ultimately the future of Washington's state-level emission cap, will likely continue in Congress in 2009.

2. Process for Developing State Emission Reduction Strategies

Over the next months, there will be significant regulatory development as working groups evaluate emission reduction options. Ecology's and CTED's climate change working group processes are open to the public, and public participation and comment is invited. Existing legislation does not mandate specific mechanisms for achieving the greenhouse gas reductions required by HB 2815. EO 07-02 established the Governor's Climate Advisory Team (CAT), which is comprised of representatives from Ecology and CTED, as well as stakeholders from local government, the business community, and non-profit organizations.¹²⁶ The CAT is charged with assessing and recommending, through a public process, strategies for achieving the state's emission reduction obligations. In February 2008, CAT technical working groups (TWGs) issued an interim set of recommendations for reducing emissions from the agricultural; forestry; energy; transportation; and residential, commercial, and industrial (RCI) sectors of the economy.¹²⁷ The CAT identified twelve broad recommendations for reducing emissions:

- Develop market-based mechanisms such as a regional cap-and-trade system;
- Require emissions reporting;
- Assess emissions under the State Environmental Policy Act during project development;
- Invest in worker training for the clean energy economy;

¹²⁵ HB 2815 at § 4.

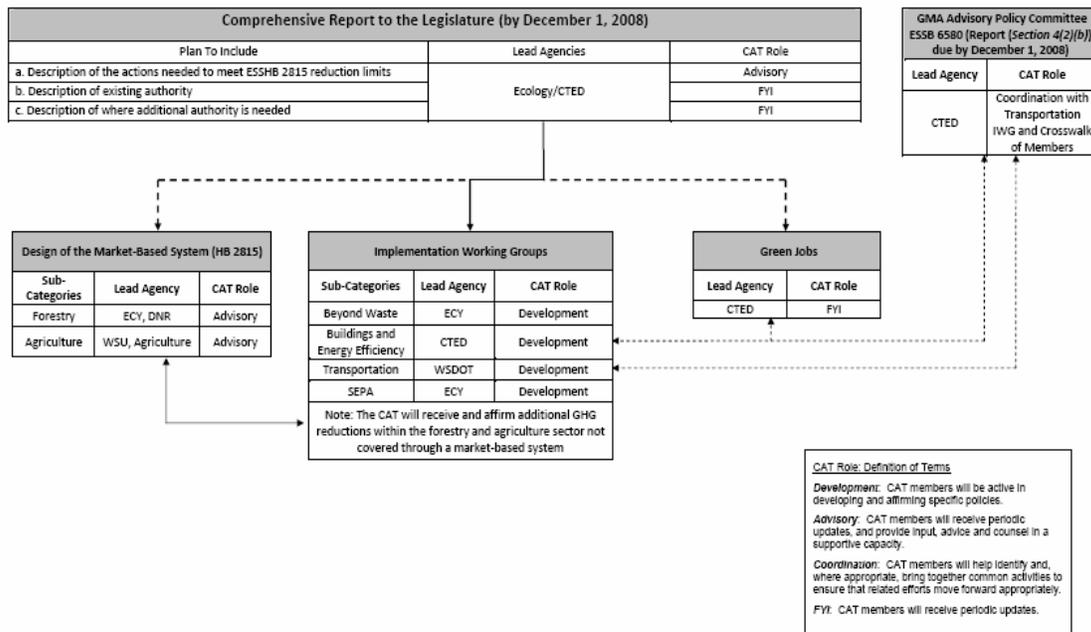
¹²⁶ For more information on CAT, *see generally* http://www.ecy.wa.gov/climatechange/cat_overview.htm.

¹²⁷ CAT's initial recommendations were presented in its report – Leading the Way: A Comprehensive Approach to Reducing Greenhouse Gases in Washington State (Feb. 1, 2008), *available at* http://www.ecy.wa.gov/climatechange/CATdocs/020708_InterimCATreport_final.pdf.

- Offer reliable alternatives to single occupancy vehicles;
- Encourage vehicle fuel efficiency and lower or non-carbon vehicle fuels;
- Invest in efficient transportation infrastructure;
- Design, build, upgrade, and operate efficient buildings;
- Deliver energy from lower or non-carbon sources;
- Retain farm and forest land to increase natural sequestration;
- Reduce waste; and
- Allocate sufficient State resources necessary to implement emission reduction strategies.

The CAT, Ecology, CTED have convened four implementation working groups (IWGs) which will assess and select preferred emission reduction strategies pertaining to SEPA, transportation, building and energy efficiency, and waste.¹²⁸ Public participation in the IWG processes and public comment on IWG recommendations is invited. As required by HB 2815, the CAT, Ecology, and CTED will submit a comprehensive report to the Legislature by December 1, 2008 that describes the initial set of actions needed to achieve emission reduction targets. The report will also describe how the state can use existing authority such as SEPA or GMA to achieve targets, as well as where additional authority is needed.

Figure 7 – 2008 Washington Climate Change Process



¹²⁸ For more information on the IWGs, including documents and meeting schedules, see generally http://www.ecy.wa.gov/climatechange/2008CAT_iwg_overview.htm.

3. Western Climate Initiative

HB 2815 also directs Ecology to coordinate with the WCI to develop a cap-and-trade system for achieving emission reductions. The WCI is a collaboration between seven western states, three Canadian provinces, and six Mexican states to reduce regional greenhouse gas emissions.¹²⁹ In August 2007, WCI members announced plans to reduce greenhouse gas emissions, in the aggregate, by 15 percent below 2005 levels by 2020.¹³⁰

In May 2008, the WCI released its initial draft recommendations for a regional cap-and-trade system.¹³¹ The WCI's initial recommendations include:

- **Emission Reporting:** establish an accurate and transparent reporting system consistent with the Climate Registry;
- **Regulated Entities:** all facilities emitting a minimum of 10,000 MtCO₂e per year would be subjected to the cap-and-trade system.
- **Allocations:** the WCI will allocate emission allowances to member states, who will in turn auction the credits to regulated entities. The WCI recommends that a portion of the allowances should be distributed through a regional auction process.
- **Offsets:** prioritize offset projects located within the WCI, and allow trading with other markets such as RGGI and the European emission trading system (EU-ETS).

The WCI is scheduled to submit its final report and recommendations on the cap-and-trade design in September 2008.¹³²

B. Land Use/Growth Management

1. SB 6580 and the Growth Management Act

In April 2008, the Governor signed SB 6580 – which addresses climate change and Washington's Growth Management Act (GMA).¹³³ A significant proportion of Washington's emissions are the result of infrastructure and development decisions which influence residential, occupational, and transportation patterns. Less dense, more disperse development and the trend towards decentralizing employment from urban cores

¹²⁹ Current WCI Partners include: Arizona, British Columbia, California, Manitoba, Montana, New Mexico, Oregon, Quebec, Utah, and Washington. Alaska, Colorado, Idaho, Kansas, Nevada, Wyoming, the Canadian providences of Ontario and Saskatchewan, and the Mexican states of Baja California, Chihuahua, Coahuila, Nuevo Leon, Sonora, and Tamaulipas are participating in the WCI as observers.

¹³⁰ WCI, Statement of Regional Goals (Aug. 22, 2007), available at <http://www.westernclimateinitiative.org/ewebeditpro/items/O104F13006.pdf>.

¹³¹ WCI, Draft Design Recommendations on Elements of the Cap-and-Trade Program (May 16, 2008), available at <http://www.westernclimateinitiative.org/ewebeditpro/items/O104F17390.PDF>.

¹³² For more information, please see WCI, Work Plan: October 2007 – August 2008 (Oct. 29, 2007), available at <http://www.westernclimateinitiative.org/ewebeditpro/items/O104F13792.pdf>.

¹³³ Senate Bill 6580 (Apr. 1, 2008), available at <http://apps.leg.wa.gov/billinfo/Summary.aspx?bill=6580&year=2007>.

results in increased vehicle miles traveled (VMT) and corresponding greenhouse gas emissions. Indeed, transportation, residential, commercial, and industrial fuel use accounted for over 67 percent of Washington's emissions in 2005, and it is seemingly inevitable that land use regulation and climate change will be inextricably linked for the foreseeable future.¹³⁴

The GMA requires cities and counties to manage land use and growth by identifying and protecting critical areas and natural resource lands, designating urban growth areas, and preparing comprehensive plans and consistent development regulations.¹³⁵ When developing comprehensive plans and development regulations, planning jurisdictions must be guided exclusively by the list of planning goals identified in the GMA.

As initially proposed, SB 6580 and its companion bill HB 2797, would have substantively amended GMA by requiring local jurisdictions to include a climate change element in their comprehensive plans. Planning jurisdictions would have been required to "mitigate the impacts of climate change by minimizing emissions of greenhouse gases related to existing development, land use patterns, transportation, and the provision of public facilities and services; and adapt to the effects of global warming and climate change." Among other things, the original bill would also have required planning jurisdictions to estimate 1990 and present-day emission levels, project future emissions, and evaluate programs for transferring rights from rural and natural resource lands to urban growth areas.

As passed, SB 6580 does not substantively amend GMA. Instead, SB 6580 directs CTED to develop protocols to assist planning jurisdictions inventory, measure, and estimate greenhouse gas emissions associated with land use decisions. The bill also created a competitive grant program for cities and counties that are addressing climate change through land use and transportation planning. Finally, SB 6580 established a CTED Advisory Committee comprised of city, county, and tribal officials, as well as representatives from the Department of Transportation and the real estate, building, forestry, and agricultural industries. The Advisory Committee must submit a report to the Legislature by December 1, 2008 that recommends further amendments to GMA designed to facilitate achieving the emission reduction targets established in HB 2815.

Despite the current lack of substantive GMA requirements, local planning jurisdictions are beginning to incorporate climate change into their comprehensive plans. For example, King County is currently updating its Comprehensive Plan to include new climate change elements.¹³⁶ On February 29, 2008 King County Executive Ron Sims presented his proposed 2008 Comprehensive Plan update which includes, among other things: (1) a commitment to reduce the County's aggregate greenhouse gas emissions 80-percent below current levels by 2050;¹³⁷ (2) a requirement to integrate climate change

¹³⁴ Washington State Greenhouse Gas Inventory and Reference Case Projections, *supra* n.23 at 8.

¹³⁵ GMA is codified at Chapter 36.70A RCW.

¹³⁶ More information on the 2008 King County Comprehensive Plan update is available at <http://www.metrokc.gov/permits/codes/CompPlan/2008/>.

¹³⁷ *Id.* (Proposed Element FW-102).

into future economic and natural resource management planning;¹³⁸ and (3) a commitment to reduce greenhouse gas emissions from County operations to six percent below 2000 levels by 2010.¹³⁹ As discussed in detail in Section IV(C)(2) below, the proposed update would also permit King County to condition or deny project approvals under SEPA based on climate change impacts.¹⁴⁰ Other jurisdictions, including small municipalities like Langley, are amending their land use planning documents to ensure that climate change is considered along with other environmental considerations.¹⁴¹

The relationship between land use policy and climate change may well arise again during the 2009 legislative session. SB 6580 was one of the environmental community's top priorities for 2008, and substantive legislation mandating climate change evaluations under the GMA may be proposed again, depending on the approach CTED proposes to the Legislature.

2. Adapting to Climate Change

In addition to mitigating or lowering greenhouse gas emissions, state and local planners are also beginning to incorporate strategies for adapting to the environmental effects of climate change (*e.g.*, rising sea levels) into land use plans. As discussed in Section I(B) above, Washington will likely experience a range of environmental changes over the coming decades, including rising sea levels, diminished fresh water supplies, diminished snow packs, and increased strains on forest lands and other natural resources. Adaptation planning is in its nascent stages, but will likely influence new development and require changes to existing buildings and infrastructure in the coming years.¹⁴²

The CAT has convened a number of Preparation and Adaptation Working Groups (PAWG) that are evaluating resource vulnerabilities and identifying appropriate adaptation strategies.¹⁴³ Local jurisdictions are also beginning to incorporate adaptation into their planning decisions. For example, the City of Olympia recently authorized \$130,000 for further analysis of how rising sea levels may impact the City's waterfront downtown.¹⁴⁴ Seattle is currently engaged in water-supply planning based on projected climate change impacts. Similarly, King County's Climate Plan includes adaptation

¹³⁸ *Id.* (Proposed Element RP-105a).

¹³⁹ *Id.* (Proposed Element E-205).

¹⁴⁰ *Id.* (Proposed Element E-207).

¹⁴¹ Langley's Comprehensive Plan (Dec. 2007), available at <http://www.langleywa.org/documents/compplan08.pdf>.

¹⁴² For general information on adaptation planning, see University of Washington Climate Impacts Group, Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments (Sept. 2007), available at <http://cse.washington.edu/cig/fpt/guidebook.shtml#downloading>.

¹⁴³ For more information on the initial adaptation recommendations of the agricultural, forestry resources, human health, water resource and quality, and coastal and infrastructure PAWGs, see generally Leading the Way: Preparing for the Impacts of Climate Change in Washington – Recommendations of the Preparation and Adaptation Working Groups (Feb. 2008), available at <http://www.ecy.wa.gov/pubs/0801008c.pdf>.

¹⁴⁴ City of Olympia, Sea Level Rise Analysis – 2008 Work Plan (May 6, 2008), available at http://www.ci.olympia.wa.us/documents/CouncilPackets/20080519/OB_SeaLevelRiseATT1.pdf.

elements addressing climate science, public health and safety, emergency preparedness, surface and freshwater management, and biodiversity and ecosystems.¹⁴⁵

Adaptation responses in other jurisdictions suggest how adaptation may be incorporated into land use planning in Washington. Massachusetts recently began advising coastal residents to elevate their homes 1 to 3 feet to protect against rising sea levels and increased storms activity attributable to climate change.¹⁴⁶ Other adaptation planning projects include assessment of infrastructure loss due to erosion in Alaska, salination of freshwater resources due to sea level rise in North Carolina and Florida, and proposals for desalination plants in California to address projected droughts.¹⁴⁷

C. State Environmental Policy Act

State and local governments are increasingly looking at SEPA as a tool for addressing climate change. Ecology is currently preparing guidance on how climate change should be incorporated into SEPA environmental review documents. Furthermore, King County and the City of Seattle currently require project proponents to prepare greenhouse gas inventories as part of their initial SEPA review and, as discussed in Section IV(C)(2), King County has prepared a draft ordinance that would require all projects within the county to mitigate greenhouse gas emissions by 15 percent. Based on these trends, it is likely that SEPA will play an increasingly important role in project development and may be used by local jurisdictions as a tool for requiring active greenhouse gas mitigation when approving new residential and commercial development projects.

1. Ecology's SEPA IWG

Over the past year, lawsuits filed under the California Environmental Quality Act (CEQA) have raised climate change challenges to a broad range of projects, including private developments and county-level comprehensive land-use plans.¹⁴⁸ In an effort to avoid similar “regulation by litigation,” Ecology issued a letter to all potential SEPA lead agencies (including municipalities, counties, and state departments) indicating that authority already exists under SEPA to require climate change assessments.¹⁴⁹

Ecology has also convened a SEPA implementation working group (the SEPA IWG) to make recommendations on how, where, and when to address climate change in the SEPA

¹⁴⁵ King County Climate Action Plan, *available at* <http://www.metrokc.gov/exec/news/2007/pdf/climateplan.pdf>.

¹⁴⁶ See Massachusetts Office of Coastal Zone Management Storm Smart Program at http://www.mass.gov/czm/stormsmart/mitigation/mitigation_and_shore_protection_home.htm.

¹⁴⁷ For a summary of state and local adaptation measures, *see generally* Pew Center on Global Climate Change, Adaptation Planning – What U.S. States and Localities are Doing (Feb. 2008), *available at* http://www.pewclimate.org/docUploads/State-Adapation-Planning-02-11-08_0.pdf.

¹⁴⁸ See Assessing Climate Change, *supra* n.98.

¹⁴⁹ Letter from Department of Ecology Director Jay Manning (Apr. 30, 2008), *available at* http://www.ecy.wa.gov/programs/sea/SEPA/climatechange/sepa_letter.pdf. SEPA regulations already include “climate” as an element of the environment that must be assessed under SEPA. WAC 197-11(1)(b)(iii).

process.¹⁵⁰ Public participation is encouraged during the SEPA IWG process. Issues the SEPA IWG is considering will likely include:

- What methods are available for counting or quantifying a project's greenhouse gas emissions?
- What types of emissions must be quantified, such as direct emissions from on-site power generation or indirect emissions associated with transportation and building materials?
- When are emissions attributable to a certain project? For example, does a new mixed-use development result in "new" transportation emissions, or just redistribute existing transportation emissions?
- When must project proponents affirmatively mitigate or reduce the greenhouse gases attributable to their projects?
- When and how should project proponents incorporate adaptation measures into their project plans?

The SEPA IWG will present its recommendations on climate change and SEPA as part of the December 1, 2008 report to the Legislature.

2. King County & City of Seattle

King County and the City of Seattle explicitly require project proponents to quantify and disclose greenhouse gas emissions as part of their initial SEPA Checklist.¹⁵¹ Currently, both jurisdictions require project proponents to quantify the following emission types:

- Embodied – emissions attributable to building materials (*e.g.*, cement) and construction transportation.
- Energy – emissions attributable to on-site energy production and energy demand.
- Transportation – emissions attributable to transportation demand created by the project after it is completed.

In response to concerns from the regulated community about the complexity and cost of quantifying emissions, King County prepared an electronic spreadsheet which calculates approximate project emissions using basic design information provided by the project proponents such as the number of units and square footage.¹⁵² The County's spreadsheet

¹⁵⁰ SEPA Implementation Working Group Scope of Work, Approaches, and Schedule, *available at* http://www.ecy.wa.gov/climatechange/2008CATdocs/IWG/sepa/052808_sepa_scope.pdf.

¹⁵¹ King County Executive Order PUT 7-10-1 (Effective Oct. 15, 2007), *available at* <http://metrokc.gov/recelec/archives/policies/aeo/put7101aao.pdf>; Seattle Ordinance 122574 (Effective Mar. 31, 2008), *available at* <http://clerk.ci.seattle.wa.us/~scripts/nph-brs.exe?s1=&s2=&s3=&s4=122610&s5=&Sect4=and&l=20&Sect2=THESON&Sect3=PLURON&Sect5=CBOR1&Sect6=HITOFF&d=CBOR&p=1&u=%2F%7Epublic%2Fcbor1.htm&r=1&f=G>.

¹⁵² King County's SEPA GHG Emission Worksheet is available at <http://www.metrokc.gov/ddes/forms/SEPA-GHG-EmissionsWorksheet-Bulletin26.xls>.

is based on local and national averages regarding material usage, energy consumption, and per capita transportation.

Figure 8 – Example of King County’s Greenhouse Gas Worksheet

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			Lifespan Emissions (MTCO2e)
			Embodied	Energy	Transportation	
Single-Family Home	0		98	672	792	0
Multi-Family Unit in Large Building	0		33	357	766	0
Multi-Family Unit in Small Building	0		54	681	766	0
Education		0.0	39	646	361	0
Food Sales		0.0	39	1,541	282	0
Retail		0.0	39	577	247	0
Office		0.0	39	723	588	0

In addition to using King County’s worksheet, project proponents may prepare individualized greenhouse gas assessments tailored to their particular projects. The City of Seattle permits applicants to use the County’s greenhouse gas worksheet.

Currently, neither King County nor Seattle affirmatively require greenhouse gas mitigation under SEPA. King County, however, has proposed legislation that would amend its SEPA ordinance and require all projects to mitigate greenhouse gases by 15 percent below a “business as usual” approach.¹⁵³ The draft ordinance identifies a non-exhaustive list of potential mitigation measures, including:

- High efficiency building design, such as LEED or Built Green;¹⁵⁴
- Sustainable building materials, such as low greenhouse gas concrete;
- Renewable energy measures such as solar or wind power;
- High density, mixed use development;
- Water conservation;
- Open space protection;
- Greenhouse gas offsets; and
- Transferring development rights from rural to urban areas.

¹⁵³ Draft King County SEPA Climate Change Ordinance (Apr. 30, 2008), available at <http://www.metrokc.gov/permits/codes/pdf/PubComment08May-SEPA-GHG-Ord080430-1.pdf>.

¹⁵⁴ See *infra* Section IV(D) for more information on green building.

There are still significant unresolved issues regarding SEPA and climate change, including developing appropriate methodologies for quantifying emissions, identifying “business as usual” development techniques and approved mitigation techniques, obtaining credit for projects that reduced emissions prior to the affirmative obligation (*i.e.*, early action credit), mitigation compliance and enforcement, and local emission trading. Accordingly, the draft ordinance requires King County to adopt additional regulations which would, among other things: identify acceptable greenhouse gas measurement standards; identify a “Green List” of mitigation measures that would exempt the project from additional climate change review; and establish standards for greenhouse gas offsets.

Significantly, King County has proposed amendments to its comprehensive plan that would allow it to condition or deny project approvals based on greenhouse gas emissions or other climate change considerations.¹⁵⁵

D. Green Building

Jurisdictions throughout Washington and the rest of the country are increasingly looking towards green building standards as another mechanism for reducing greenhouse gas



emissions – a trend that will directly impact private and public building construction. Nationally, residential and commercial buildings account for over 72 percent of electricity consumed and 39 percent of total carbon dioxide emissions – an amount equal to the combined emissions of the United Kingdom, France, and

Japan.¹⁵⁶ In Washington, emissions from residential, commercial, and industrial energy use accounts for 20 percent of the state’s greenhouse gas emissions.¹⁵⁷

Early green building efforts saw states and municipalities using their buying power to insist on green certification for new public buildings. However, jurisdictions are increasingly using a variety of tools – both carrots and sticks – to encourage green building in private developments, and mandatory state and local green building regulations are likely in the foreseeable future. This section briefly summarizes green building standards, and describes green building requirements and incentives in Washington.

¹⁵⁵ Proposed King County Comprehensive Plan Element E-207, *available at* <http://www.metrokc.gov/permits/codes/CompPlan/2008/>.

¹⁵⁶ U.S. Dept. of Energy, 2007 Buildings Energy Data Book (Sept. 2007), *available at* http://buildingsdatabook.eere.energy.gov/?id=view_book.

¹⁵⁷ Washington State Greenhouse Gas Inventory, *supra* n.23 at 8.

1. What Is Green Building?

Green building, or high performance building, is the practice of designing buildings to increase energy efficiency, conserve water, minimize human health impacts (*e.g.*, indoor air quality), and reduce impacts on the environment through siting and design.¹⁵⁸ While green buildings construction generally costs more than building traditional structures, initial cost increases are often recouped through reduced operational costs over a building's lifespan. The long term cost effectiveness of green buildings will likely increase as the costs of reducing greenhouse gases under a cap-and-trade system (*e.g.*, increased electric costs) are incorporated into the economy.

The most widely-used building rating system is the United States Green Building Council's Leadership in Energy and Environmental Design, or LEED®.¹⁵⁹ Adopted in 1998, LEED addresses six major aspects of sustainable design: sustainable siting, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, and innovation and design process. For new construction projects, LEED has four progressive levels of certification – Certified, Silver, Gold, and Platinum – based on the number of sustainable features incorporated into the design. Over 13,000 projects throughout the world covering over 3.6 billion square feet of building space are involved in the LEED rating system.¹⁶⁰ Other green building certification programs include the Green Building Initiative's Green Globes program.¹⁶¹

2. Green Building Requirements and Incentives in Washington

Green building requirements and incentives for public and private projects are increasingly common throughout Washington. In April 2005, Washington became the first state to adopt green building standards for state-funded projects.¹⁶² Washington's high-performance building statute generally requires all state-funded new construction exceeding 5,000 square feet, and any remodeling over 5,000 square feet when the cost is greater than 50 percent of assessed value, to meet or exceed a LEED-Silver rating.¹⁶³ King County and the City of Seattle have adopted similar requirements for publicly-funded projects.¹⁶⁴

¹⁵⁸ For a comprehensive summary of green building practices and requirements, please see Mark J. Bennett et al., *Green Buildings and Sustainable Development* (LexisNexis, June 2008).

¹⁵⁹ For more information on LEED, *see generally* <http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>.

¹⁶⁰ U.S. Green Building Council, *Green Building by the Numbers* (May 2008), *available at* <http://www.usgbc.org/ShowFile.aspx?DocumentID=3340>.

¹⁶¹ For more information on Green Globes, *see generally* <http://www.thegbi.org/home.asp>.

¹⁶² High Performance Buildings, ESSB 5509 (Effective July 24, 2005), *available at* <http://www.leg.wa.gov/pub/BillInfo/2005-06/Pdf/Bills/Session%20Law%202005/5509-S.SL.pdf>.

¹⁶³ Certain projects, such as hospitals and research facilities, may be exempted if achieving LEED-Silver is "not practicable."

¹⁶⁴ *Building a Better City – City of Seattle Sustainable Building Program 5 Year Report*, at 5 (2005), *available at* http://www.seattle.gov/dpd/static/5-year_report_LatestReleased_DPDP_009930.pdf; King County Ordinance 15118 (Feb. 7, 2005), *available at* http://www.metrokc.gov/dnrp/swd/about/green-building-team/documents/Ordinance_15118.pdf.

In an effort to promote green building, both Seattle and King County have adopted incentive programs for private developments that achieve LEED or similar certifications. Seattle's LEED incentive applies only to commercial and residential buildings in downtown zoning areas, and allows greater heights and/or greater maximum floor area if a project achieves, among other requirements, a LEED Silver rating.¹⁶⁵ The King County/Seattle Built Green™ grant program provides grants ranging from \$5,000 to \$20,000 for residential projects that comply with the Master Builders Association's Built Green program.¹⁶⁶ Similarly, King County's Green Building Grant Program provides grants from \$15,000 to \$25,000 for qualifying commercial projects that achieve a minimum LEED-Silver certification.¹⁶⁷

Washington has not yet adopted mandatory green building requirements for private development projects. Ecology, however, has convened an Energy Efficiency and Green Building implementation working group (EE/GB IWG) that is currently assessing options for reducing greenhouse gas emissions attributable to the built environment. The EE/GB IWG has identified a preliminary range of proposals including green building incentive programs and amendments to the building code addressing green building and energy efficiency improvements in new and existing buildings.¹⁶⁸ Like the other working groups, the EE/GB IWG invites public participation and comment as it develops its proposals. Furthermore, local jurisdictions throughout the nation are imposing green building requirements on private development projects and it is likely that Washington cities and counties will start imposing such requirements in the foreseeable future as part of their climate change strategies.¹⁶⁹

E. Transportation

Due to abundant hydropower resources, Washington's energy sector does not generate the level of greenhouse gas emissions that are typical in states where coal- or natural gas-fired power plants predominate. Instead, greenhouse gas emissions from the

¹⁶⁵ For more information on Seattle's LEED Incentive Program, *see generally* <http://www.seattle.gov/dpd/greenbuilding/OurProgram/PublicPolicyInitiatives/DevelopmentIncentives/default.asp>.

¹⁶⁶ For more information on the Built Green Grant program, *see generally* <http://www.builtgreen.net/incentive.html>.

¹⁶⁷ For more information on King County's Green Building Grant Program, *see generally* <http://www.metrokc.gov/dnrp/swd/greenbuilding/incentives/commercial.asp>.

¹⁶⁸ EE/GB IWG, Reducing Carbon in the Built Environment (Energy Efficiency and Green Buildings) Implementation Working Group Draft Scope of Work (June 3, 2008), *available at* http://www.ecy.wa.gov/climatechange/2008CATdocs/IWG/bee/060308_bee_scope.pdf.

¹⁶⁹ For example, the Dallas, Texas city council adopted one of the nation's most aggressive green building ordinances in April 2008 as a strategy for achieving its goal of "carbon neutrality" by 2030. Starting October 1, 2009, new residential and commercial buildings must satisfy stringent energy efficiency criteria, water reduction strategies, and "cool roof" requirements. Effective October 1, 2011, new residential and commercial buildings must be certifiable under LEED, Green Built North Texas, or comparable programs. *See Dallas Citywide Green Building Program – Summary of Task Force Recommendations and Ordinance Requirements* (Apr. 9, 2008), *available at* http://www.dallascityhall.com/pdf/OEQ/green_building_ordinance040908.pdf. For a summary of green building statutes and ordinances throughout the United States, please see Green Buildings and Sustainable Development, *supra* n.159.

transportation sector constitute a significant proportion of Washington’s aggregate emissions. Nationally, transportation fuel use accounts for approximately 28 percent of aggregate emissions, while in Washington, transportation fuel use accounts for approximately 47 percent.¹⁷⁰ As such, reducing transportation-sector emissions will play a central role in Washington’s efforts to achieve its greenhouse gas reduction commitments. Washington’s efforts to address transportation emissions have focused on fuel efficiency and renewable fuel standards, and reducing per capita VMT. Efforts to reduce VMT will likely have an indirect impact on commercial and residential development by promoting or discouraging certain types of development.

1. Fuel Efficiency and Renewable Fuel Standards

Washington has adopted legislation designed to increase motor vehicle fuel efficiency and increase the use of renewable fuels. In 2005, Washington adopted California’s vehicle emission standards, which are designed to reduce greenhouse gas emissions by 5.5 million metric tons by 2020 – an amount equivalent to eliminating approximately one million cars from Washington’s roads.¹⁷¹ As discussed in Section III(B)(1)(b) above, EPA declined to approve the California emission standard – a decision which is currently being appealed by Washington and a coalition of other states. While not directly tied to greenhouse gas emissions, Washington has also adopted renewable fuel standards which require increasing proportions of ethanol and other biofuels to be sold in the state.¹⁷² Other strategies for reducing vehicle fuel emissions currently under consideration include low-carbon fuel standards similar to those adopted in California.¹⁷³

2. Vehicle Miles Traveled

Washington is also assessing options for reducing per capita VMT as part of its climate change strategy. HB 2815 requires the Washington Department of Transportation to adopt broad statewide goals for reducing annual per capita VMT, including adopting benchmarks to decrease the annual per capita vehicle miles traveled by 18% by 2020, by 30% by 2035, and by 50% by 2050.¹⁷⁴ In order to achieve these benchmarks, the Department of Transportation is required to facilitate a collaborative process with other government agencies and business



¹⁷⁰ Washington State Greenhouse Gas Inventory, *supra* n.23 at 8.

¹⁷¹ Leading the Way on Climate Change, *supra* n.127 at 170.

¹⁷² ESSB 6508 (Enacted Mar. 30, 2006), available at <http://apps.leg.wa.gov/billinfo/summary.aspx?year=2006&bill=6508>.

¹⁷³ See California Energy Commission Low Carbon Fuel Standards at http://www.energy.ca.gov/low_carbon_fuel_standard/index.html.

¹⁷⁴ HB 2815 at Section 8.

interests to develop tools and best practices for reducing VMT. As part of this process, DOT must, among other things:

- Identify VMT reduction strategies being successfully implemented in other jurisdictions;
- Identify new revenue options for implementing VMT reduction efforts;
- Provide effective tools for measuring VMT reduction strategies;
- Establish a process for measuring the success of VMT reduction programs; and
- Estimate projected reductions in greenhouse gas emissions if VMT benchmarks are achieved.

The Department of Transportation must provide a report to the Legislature by December 1, 2008 on the collaborative process and recommended strategies for reducing VMT.¹⁷⁵ Those recommendations will likely include options that directly and indirectly impact land use and development patterns, including added road and mass transit capacity, improvements to freight and inter-city rail lines, pricing signals such as tolling and congestion pricing, and measures to promote compact, transit-friendly development.

F. Energy Production

Even with Washington's abundant carbon neutral hydroelectric resources, electrical power generation accounts for 20 percent of the state's greenhouse gas emissions.¹⁷⁶ In an effort to reduce emissions associated with electricity consumption, Washington has adopted greenhouse gas emission and renewable portfolio standards for utilities selling power in the state. These standards will place increasing pressure on the state to develop new sources of clean renewable power and efficient fossil-fuel fired generation.

1. Emission Performance Standards

ESSB 6001, passed by the Legislature in 2007, prohibits electric utilities from entering into long-term power contracts after June 30, 2008 with power plants whose greenhouse gas emissions exceed an emission performance standard (EPS).¹⁷⁷ The practical effect of this requirement is that Washington utilities will no longer be able to purchase coal generated power (from either in-state or out-of-state generators) unless the greenhouse gas emissions from the facility can be permanently sequestered in underground geologic formations – a process that is in its nascent stages. Indeed, the Washington Energy Facility Site Evaluation Council (EFSEC) suspended the application for a coal-fired plant

¹⁷⁵ For more information, please see the Transportation Implementation Working Group's Scope of Work (May 2008), available at http://www.ecy.wa.gov/climatechange/2008CATdocs/iwg/tran/050908_tran_scope.pdf.

¹⁷⁶ Washington State Greenhouse Gas Inventory, *supra* n.23 at 12.

¹⁷⁷ ESSB 6001 at § 5. The EPS is set at the lower of: (1) 1100 pounds of GHG per megawatt hour, or (2) the "average available GHG emissions output" of a new combined-cycle natural gas turbine.

in Kalama, Washington based on the failure to present a detailed plan for sequestering carbon dioxide emissions.¹⁷⁸

2. Renewable Portfolio Standards

In November 2006, Washington voters narrowly passed I-937, the Clean Energy Initiative, which requires large public and private utilities to obtain 15 percent of their electricity from renewable resources such as wind, solar, tidal, and biomass (but excludes most hydropower projects).¹⁷⁹ Meeting the targets of I-937 will require the development of approximately 1,250 additional MW of renewable resource capacity and associated distribution infrastructure in Washington by 2020. Developing renewable generation and distribution infrastructure will likely increase energy costs, and may create opportunities for site-specific renewable energy generation (solar and wind, for example) that can be incorporated into designs for commercial and residential developments.

V. Conclusion

While international efforts to address climate change have been ongoing for over a decade, the past three years have witnessed a profusion of climate change regulation in the United States. At least eighteen states, including Washington, have adopted mandatory greenhouse gas emission targets, and Congress is currently considering legislation that would impose mandatory greenhouse gas emission caps on the national economy. Despite economic and population growth, these ambitious targets require jurisdictions to reduce greenhouse gas emissions to pre-1990 levels over the coming decades. Businesses, public entities, and non-profits are already positioning themselves to address the potential benefits and costs associated with this changing regulatory and business climate.

The emission reduction strategies currently under development in Washington and elsewhere are not limited to large emission sources such as power plants. Instead, they will regulate all economic sectors, including transportation and development. Issues such as project permitting, environmental review, and building design and efficiency have been specifically targeted as promising avenues for achieving initial emission reductions. These requirements will directly influence how, when, and where new residential and commercial development occurs, as well as the cost of that development.

Ecology and CTED have convened a number of implementation working groups that are developing initial legislative and regulatory proposals for achieving emission reductions via GMA and land use/transportation planning, SEPA, and energy efficiency and green building. Implementation working group meetings are open to the public and present a unique opportunity for involvement by Washington REALTORS and other business associations. In December 2008, the working groups will present their initial proposals

¹⁷⁸ *In the Matter of Applicant No. 2006-01, Energy Northwest*, Prehearing Order No. 4 (Dec. 21, 2007), available at <http://www.efsec.wa.gov/FILES/orders/835.pdf>.

¹⁷⁹ Initiative I-937, available at <http://www.secstate.wa.gov/elections/initiatives/text/I937.pdf>.

to the Legislature, and it is likely that significant climate change legislation will be proposed during the 2009 legislative session.

Marten Law Group PLLC
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