Environmental Due Diligence In The Era Of Climate Change

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Public and private pressure to reduce GHG emissions and for green buildings is increasing. Purchasers and their lenders will probably start requiring evaluation of a building's carbon footprint during due diligence very soon.

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TO PRESERVE liability defenses and manage environmental risks associated with properties contaminated with hazardous substances or petroleum, purchasers of real estate, tenants, and their lenders usually perform environmental due diligence. For the most part, the environmental due diligence is based on the federal All Appropriate Inquires ("AAI") Rule that became effective on November 1, 2006 or the ASTM E1527-05 Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process. 70 Fed. Reg. 66,070, 66,081 (Nov. 1, 2005). The AAI rule is limited to satisfying the pre-closing requirements for asserting the landowner liability protections under the federal Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. §6991(b)(h)(9).

The ASTM E1527-05 does not address a number of environmental issues such as asbestos, lead-based paint, lead in drinking water, radon, and mold. These issues are usually addressed as "non-scope" environmental issues or as part of an evaluation of "business environmental risk" as an additional service.

Another "non-scope" environmental issue that is fast becoming a concern to building owners and businesses is climate change. In the absence of federal GHG legislation, states and local governments have adopted ambitious plans for reducing GHG emissions. When one takes a close look at the many GHG initiatives being adopted by local governments, it is clear that brunt of the GHG emissions reductions will fall on owners and operators of multi-family residential and commercial buildings because the buildings account for the largest source of GHG emissions in most cities. Commercial and residential buildings produce 21 percent of the world's carbon dioxide ("CO2") emissions (38 percent in the United States), more than transportation or manufacturing. About 15 million new buildings will be added by 2015. Commercial buildings, the largest source of CO2, are expected to grow emissions 1.8 percent a year through 2030. A recent United Nations study concluded that green buildings can do more to fight global warming than all curbs on GHGs agreed under the Kyoto Protocol, while saving billions of dollars.

Thus, regardless if one believes that climate change is primarily or just partially anthropogenic in origin, it is now clear that purchasers, owners, and lenders as well as their professional service providers, are going to have to take climate change into account when evaluating future transactions. As a result, the costs to comply with the aggressive GHG emissions reduction strategies may soon become an important element of due diligence.

This article will focus on the climate change due diligence for real estate projects. The scope and issues for GHG due diligence involving corporate transactions with operating manufacturing facilities will be more comprehensive.

Nature Of GHG Emissions From Real Estate Development Projects

Protocols have been developed to measure the carbon footprint of a real estate project. A project's carbon footprint will consist of two components: the direct footprint and the secondary footprint.

The direct footprint consists of the GHG emissions from building operations such as emissions from a boiler or smokestack. Other direct emissions can include fugitive emissions from industrial sources, wastewater treatment plants, landfills, and agricultural operations.

The secondary footprint can include the GHG emissions from energy consumption and car or vehicle trips of future employees, customers, vendors, and freight delivery. Other secondary sources of GHG can be diesel emissions from on-site construction equipment, transportation of construction materials to and from the project site, manufacturing of the construction materials, and the emissions associated with the extraction of the raw materials used to manufacture the construction materials. The existence of significant secondary GHG emissions can be important in those states that are now requiring environmental impact statements to assess GHG emissions (see discussion below).

OVERVIEW OF STATE AND CITY GHG INITIATIVES • Twenty-two states have entered into regional pacts that impose mandatory GHG emissions caps on a number of business sectors such as utilities, manufacturing facilities, and transportation. Over 800 cities have adopted their own GHG programs that call for ambitious reductions in GHG emissions.

Indeed, a fact sheet issued by Ceres and Environmental Defense in mid-September 2007 announced that approximately 58 percent of the country's GDP and 54 percent of the nation's population were now subject to some sort of GHG emissions restrictions. The fact sheet also stated that half of the revenues of Standard & Poor's 500 companies occur in nations that are parties to the Kyoto Protocol.

Regional Greenhouse Gas Initiative ("RGGI")

Ten Northeast and Mid-Western states (Connecticut, Delaware, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont [Pennsylvania is an observer]) have agreed to implement CO2 emissions reductions from power plants through a regional cap and trading program. Power plants in the RGGI states must achieve CO2 emissions reductions of 10 percent by 2019. Regulated sources will have to purchase GHG allowances representing the right to emit one ton of CO2. The allowances will be sold through a public auction for certain compliance periods known as "vintages." The first auction of 1,000 allowances is planned for September 2008 and the second auction will take place in December 2008.

Western Climate Initiative ("WCI")

Six Western states and one Canadian province (Arizona, California, New Mexico, Oregon, Utah, Washington, and British Columbia [Colorado, Kansas, Nevada, Wyoming, and Ontario, Quebec, Saskatchewan, and the Mexican State of Sonora are observers]) have agreed to reduce aggregate GHG emissions by 15 percent below 2005 levels by 2020. WCI is broader than the RGGI since the WCI applies to all sectors of the state economies. In addition, the WCI agreement applies to all Kyoto GHGs (CO2, methane, nitrous oxide, hydrofluoucarbons, perfluorocarbons, and sulfur hexafluoride) and not just CO2.

Individual members of WCI have agreed to achieve GHG reductions ranging from 11 percent (Washington) to 32 percent (Oregon) by 2020. These aggregate regional reduction goals do not replace individual GHG emissions reduction targets established by the individual WCI members. It is anticipated that WCI members will establish a cap and trade program for the covered GHG emissions.

New England Governors/Eastern Canadian Premiers Climate Change Auction Plan ("NEG-ECP")

Six states and four provinces agreed to implement a variety of programs and policies to reduce GHG emissions to 1990 levels by 2010 and achieve another 10 percent reduction by 2020. In 2006, the NEG-ECP members recommended implementation of a cap and trade program similar to RGGI.

Midwestern Greenhouse Gas Reduction Accord

Six states and one Canadian province (Iowa, Illinois, Kansas, Michigan, Minnesota, Wisconsin, and Manitoba) have agreed to develop a multi-sector cap and trade program for the Kyoto GHGs. The GHG trading program is slated to begin in 2010 but a reduction goal has not yet been established.

U.S. Conference Of Mayors Climate Protection Agreement

Cities throughout the country have initiated programs to reduce GHG. As of March 2008, over 800 mayors had signed The U.S. Conference of Mayors Climate Protection Agreement, committing to reduce GHG emissions in cities below 1990 levels. Ninety percent of the cities require or anticipate requiring that new city government buildings be more energy efficient and environmentally sustainable. Perhaps most important, three-quarters of the cities plan to launch initiatives to encourage or impose energy efficiency standards and sustainable building techniques for privately owned buildings.

As cities begin to implement their aggressive GHG reduction goals, it is quite likely that the local governments will realize that they will be unable to achieve their aspirational goals simply by imposing green building standards on new construction projects. As a result, building owners and their lenders should anticipate that local governments will soon

start requiring retro-commissioning of existing private buildings and imposing strict green building standards on renovations of existing buildings.

The pressure to operate and build environmentally sensitive buildings is not only coming from government. According to representatives from the real estate industry, influential tenants are demanding green office space in large cities, doing due diligence on buildings' sustainability, and asking about the certification level of the building.

According to the McGraw-Hill Construction's 2007 Residential Green Building SmartMarket Report, the market for green building could approach $60 billion by 2010, or roughly 10 percent of the overall residential and nonresidential construction markets. The study indicated that green buildings currently constitute less than five percent of total construction today but that figure is expected to double by 2010. The Green Building Alliance estimates that the U.S. green building products market is now about $8 billion and may increase to $32 billion by 2010. In contrast, the market was less than $800 million six years ago. The Building Owners and Managers Association ("BOMA") International has indicated that building owners of conventional buildings may be at a competitive disadvantage to green buildings in as soon as 24-36 months.

One of the key questions for developers, building owners, and their professional service providers will be determining the standard to be used to demonstrate compliance. Attorneys will need to ensure that contracts allocate risks for managing and achieving the desired green building certification.

Green Building Standards: Sticks And Carrots

States and local governments are adopting mandatory green building rules for new construction and renovations of existing structures. Approximately 55 cities, 20 states, and eight federal agencies have policies requiring or encouraging various levels of the Leadership in Energy & Environmental Design ("LEED") construction certification standard adopted by the U.S. Green Building Council ("USGBC").

LEED Rating System

Thus far, the LEED standard is the dominant certification tool. More than 1,200 public and private buildings have been certified under LEED with another 4,500 under development. 1,326 private residential and non-residential buildings have earned LEED certification with approximately another 16,000 projects awaiting LEED certification.

Under the LEED system, commercial and residential developers register their buildings and projects to integrate technologies and building materials. LEED rating systems are available for new construction (LEED-NC), existing buildings (LEED-EB), commercial interiors (LEED-CI), building core and shells (LEED-CS), homes (LEED-H), neighborhoods (LEED-ND), LEED for Schools, LEED for Retail, and LEED for Health Care facilities.

Points are awarded based on achievement of benchmarks in six areas: sustainable site development (maximum 14 points), water savings (five possible points), energy efficiency (up to 17 points), materials selection (13 possible points), indoor air quality (possible 15 points), and innovation and design (maximum five points). For new or remodeled buildings, the council has four LEED levels that are based on the points accumulated. To be LEED Certified, the project must achieve 26-32 points. The LEED Silver designation requires 33-38 points, LEED Gold requires 39-51 points and LEED Platinum requires 52-69 points.

Estimates for the cost of LEED compliance vary depending on the building type and LEED certification level. In general, it appears that LEED certification adds one to five percent to a construction project. Some LEED points are more costly than others and may not make economic sense for a particular project. For example, some of the high-

er level wastewater treatment and energy efficiency credits have significant budget impacts. Of course, offsetting some of those costs are lower operating costs as well as state and federal tax incentives.

Green Building Initiative Green Globes Rating System

Another standard growing in popularity is the Green Building Initiative ("GBI") "Green Globes" building rating system. In 2005, GBI became the first green building organization to be accredited by the American National Standards Institute ("ANSI"), the United States' official certifier of more than 10,000 voluntary consensus standards across dozens of business sectors. GBI is in the process of having its Green Globe standard accredited by ANSI. In contrast, USGBC does not plan to submit its LEED system for ANSI certification but is partnering with the American Society of Heating and Air-Conditioning Engineers and the Illuminating Engineering Society of North America to integrate LEED into commercial building codes.

National Association of Home Builders Model Green Home Program

The National Association of Home Builders Research Center ("NAHB") recently developed its own Model Green Home Building guidelines for national standard certification known as NAHB ICC-700. Under the NAHB green building program, a building would simply have to register its project on the new NAHB Web site (www.nahbgreen.org) and then use the software scoring tool for the building components for which the builder seeks certification. Four certification standards are available: bronze, silver, gold, or emerald. Builders must hire NAHB-trained verifiers. The NAHB plans to charge a $150 verification fee per project for members.

Energy Star Program

Because of the scope of the LEED standards and the need for third-party verification, owners of smaller buildings may find that achieving LEED certification may be cost prohibitive. Another option for building owners interested in having their buildings receive environmental recognition is to obtain Energy Star certification from the EPA. Unlike LEED, which examines building materials, air quality, and sustainability as well as energy and water efficiency, Energy Star focuses on a building's energy efficiency only. Because of the extra construction costs and third-party verifications, LEED certification is significantly more expensive than obtaining an Energy Star Certificate.

In New York City, for example, LEED certification can increase construction costs by 20 percent while meeting Energy Star requirements may only result in a 10 percent premium in construction costs. For many small building owners, LEED certification is simply not cost effective. According to some real estate experts, obtaining an Energy Star certificate can increase building value by 15 percent.

To qualify for Energy Star, a building must be among the top 25 percent of energy efficient buildings. Until recently, Energy Star was not available for buildings more than three stories in height. However, the EPA and the New York State Energy Research and Development Authority ("NYSERDA") are finalizing standards to certify mid-rise and high-rise residential buildings.

Building owners that cannot qualify for (or afford) one of the green building standards may still be able offset or minimize the carbon emissions of their building and tenant operations by purchasing carbon offsets such as Renewable Energy Certificates ("RECs") from producers of alternative energy (e.g., wind, solar, geothermal, small-scale hydropower, biomass, etc.) or from a host of third-party voluntary offset certifiers. Because there are differing protocols for measuring and inventorying GHG emissions, it is important that purchasers verify the validity of offsets that will be used to reduce the carbon impact of a particular project.

Building owners and project developers can also purchase emission credits that are traded on one of the regulated markets such as the Chicago Climate Exchange ("CCX"). The 400 members of the CCX have agreed to reduce their GHG emissions through legally binding mechanisms to meet annual GHG emission reduction targets. Those members who reduce below the targets may sell or bank their surplus allowances while those who exceed their targets must purchase additional allowances. Participants must have their emissions reductions verified and GHG emissions are traded using a carbon financial instrument ("CFI") which represents 100 tons of CO2 equivalent ("CO2eq"). Trading is accomplished through a Web-based platform. The CFI contract was recently trading at around $6 per contract, approximately double the cost from the fall of 2007.

Local Green Building Initiatives

Some cities have adopted standards that apply to private construction while others are relying on incentives such as waiving or refunding permit fees, implementing streamlined permitting, or allowing greater density allocations to stimulate green buildings.

San Francisco recently adopted one of the nation's most rigorous green building standards. The green building codes apply to new commercial buildings with over 5,000 square feet and new residential structures over 75 feet in height, and renovations of commercial buildings with more than 25,000 square feet. New, non-high-rise residential buildings would have to achieve GreenPoint. The standards are to be phased in between 2008 and 2012, becoming more stringent each year. For example, new, large commercial buildings would have to meet the basic LEED standard in 2008 but LEED Gold would be required in such buildings starting in 2012. In 2004, the Board of Supervisors approved an ordinance requiring all new municipal construction and major renovation projects to achieve LEED standards. In 2006, the city started fast-tracking permits for developers who voluntarily met LEED standards.

Los Angeles is requiring new buildings with more than 50 residential units or 50,000 square feet of commercial floor space to achieve at least LEED Certified status. Developers willing to achieve LEED Silver will qualify for expedited permit review that could save from two months to a year in processing time. All new school and public buildings 7,500 square feet or larger must also comply with the LEED standards.

In January 2007, Boston added a new section to the city's zoning code that applies to projects involving 50,000 square feet or more of new development or substantial rehabilitation. Unlike San Francisco, Boston does not require developers to go beyond the silver standard. Projects in Boston may substitute up to four "Boston Green Building Credits" to replace the traditional LEED points used to obtain certifiable status. These Boston-specific criteria allow the City to focus on issues of particular local importance, including historic preservation, modernizing the electric grid, groundwater recharge, and transportation demand management.

Both Atlanta and Seattle have adopted ordinances that require new buildings and renovations of buildings that have more than 5,000 square feet to achieve LEED Silver certification.

To achieve New York City's goal of reducing GHG emissions 30 percent by 2030, construction projects involving new buildings or major alterations and substantial reconstruction of existing buildings that cost at least $2 million will have to achieve LEED Silver or higher rating. There are also efficiency requirements for boiler, lighting, HVAC, and plumbing system installation/replacement that exceed certain cost thresholds. The city is also in the process of adopting a comprehensive retrofit program for existing buildings to achieve state-mandated cuts in energy consumption by 2015.

An example of a county-level initiative is Eagle County, Colorado. The county has implemented an its Efficient Building Code ("ECOBuild") that requires new single-family and multi-family homes as well as expansions of existing homes that exceed 50 percent to comply with a point-based system that addresses some of the same components set forth in the LEED rating system. Buildings or projects that achieve LEED certification do not have to comply with ECOBuild. There are incentives for achieving points above the minimal standard such as permit fee rebates and other cash rebates.

Regulatory Incentives

In addition to the regulatory "sticks" requiring reductions in carbon impacts of buildings, many states and the federal government are establishing financial incentives or "carrots" to encourage the construction of green buildings. For example, the Federal Energy Policy Act of 2005 authorizes a tax deduction of up to $1.80 per square foot for commercial buildings that reduce energy consumption for heating and cooling by at least 50 percent. The New York State Green Building Tax Credit provides a credit of up to seven percent for eligible costs.

USING ENVIRONMENTAL REVIEW LAWS TO SPUR ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT • The National Environmental Review Act ("NEPA") was the first national environmental legislation. NEPA requires federal agencies to evaluate and mitigate the environmental impacts of major federal projects. Most states have adopted their own versions of NEPA. Although these laws have been primarily used for traditional developments, states are now looking to them as a means of forcing developers to reduce the GHG effects of their projects as well as to ensure that the developments meet sustainability requirements.

State Agency Consideration Of CHG Under NEPA

Federal courts have required agencies to consider GHG emissions under NEPA but usually have deferred to the agencies' climate change assessments. For example, in *Border Power Plant Working Group v. Department of Energy*, 260 F. Supp.2d 997 (S.D. Cal. 2003), the Southern District of California initially invalidated an Environmental Impact Statement ("EIS") by the Department of Energy ("DOE") involving a proposal to connect the southern California power grid with two coal-fired plants in Mexico but subsequently approved a modified EIS that calculated the project would increase global GHG emissions by 0.088 percent, and the United States' GHG emissions by 0.023 percent but concluded that the expected impacts to global climate change would be "negligible."

Mayo Foundation v. Surface Transp. Bd., 472 F.3d 545 (8th Cir. 2006), involved approval of new railroad lines for transporting low-sulfur coal from the Powder River Basin in Wyoming to power plants in the Midwest. The Eighth Circuit initially ruled that increased coal consumption and associated GHG emissions were a reasonably foreseeable consequence of the project, and Surface Transportation Board (the "Board") should have considered air quality issues in its EIS. However, the court upheld a supplemental EIS in December 2006 concluding that the project would not have significant environmental impacts.

In *Friends of the Earth v. Mosbacher*, 2007 WL 962949 (N.D. Cal. Mar. 30 2007), the plaintiff alleged that the Overseas Private Investment Corporation and Export-Import Bank failed to comply with NEPA when the federal agencies provided funding and loan guarantees to overseas projects without assessing impact of GHG emissions from the energy-intensive projects. The court initially denied the government's motion to dismiss but then held that the agencies were not required to prepare an EIS because the foreign energy projects

were not federal actions. However, in a nod to the plaintiffs, the court said it would be difficult to conclude that there was a genuine dispute that GHGs do not contribute to global warming, and suggested that future NEPA climate change litigation could be focused on whether a particular agency's action was the "but-for" cause of effects on the domestic environment. While this language is technically referred to by lawyers as "dicta" because it was not related to the holding of the issue before the court, it is not unreasonable to expect future litigation involving federally financed projects such as airports, highways, rail projects, ports, or marine terminals that fail to analyze the climate impacts of those projects.

CHG-Related NEPA Actions

A number of GHG-related NEPA actions have been filed. In *Montana Environmental Information Center v. Johanns,* No. 07-CV-01311 (D.D.C. July 20, 2007), a group of environmental organizations have asked the United States District Court for the District of Columbia to enjoin the Rural Utilities Service ("RUS"), a branch of the U.S. Department of Agriculture ("USDA"), from lending billions of dollars to private developers and utilities across the country to build new coal-fired power plants until climate-related impacts of these projects are evaluated under NEPA. The RUS facilitates the electrification of rural areas by making direct loans and issuing loan guarantees to electric utilities to finance the construction of electric distribution, transmission, and generation facilities. The complaint charged that the RUS has already elected to participate in the funding of a 250 megawatt coal plant near Great Falls, Montana and was considering funding an additional seven coal plants located across the country that will accelerate climate change and eliminate the market for clean power. The plaintiffs estimated that the RUS funded projects will account for a "significant share" of U.S. GHGs yet never took a "hard look" at the consequences of proposed major federal actions. Specifically, the plaintiffs alleged that the RUS failed to consider the cumulative or incremental impacts of GHG emissions from the seven other coal plants that it was considering funding, that the actual energy needs were significantly less than what was claimed in the EIS, that RUS failed to consider a reasonable range of alternatives, and that RUS should have prepared a supplemental EIS based upon new information that was received after the issuance of the EIS. The case was settled when EPA agreed to withdraw a letter issued to an industry consultant that owners of new power plants did not have to consider use of Best Available Control Technology ("BACT").

State NEPAs And GHG Impacts

Most states have adopted their own versions of NEPA that have been used to evaluate potential environmental impacts such as air and water pollution, congestion, and noise. In the wake of the United States Supreme Court decision in *Massachusetts v. EPA,* 127 S. Ct. 1438 (2007), environmental organizations and states are beginning to turn to NEPA or state environmental quality laws to force developers to reduce the GHG impacts of their projects as well as to ensure that the developments meet sustainability requirements.

Massachusetts Example

In April 2007, the Massachusetts Executive Office of Energy and Environmental Affairs ("EOEEA") issued a Greenhouse Gas Emissions Policy to be implemented under the Massachusetts Environmental Policy Act ("MEPA"). Under MEPA, projects conducted by either a state agency or a private developer utilizing state funds or requiring state approvals must undergo environmental review if they exceed certain thresholds (e.g., alteration of more than 25 acres of land or the creation of more than 300 new parking spaces). The first step in the process is the filing of an Environmental Notification Form ("ENF") that describes the proj-

ect, its potential impacts, and any required state approvals. If potential environmental impacts are identified, the project proponent must then submit an Environmental Impact Report ("EIR") which is similar to the NEPA EIS.

Under the new GHG Policy, an EIR must quantify the GHG emissions generated by the project and identify measures to avoid, minimize, or mitigate the emissions. A project will be subject to the GHG Policy when an EIR is required and the project falls into one of the following categories:

- The Commonwealth or state agency is a project proponent;
- The Commonwealth or state agency is providing financial assistance to a private project proponent;
- The project is privately funded, but requires an air permit from the Massachusetts Department of Environmental Protection; or
- The project is privately funded but will generate: (i) 3,000 or more new vehicle trips per day for office projects; (ii) 6,000 or more vehicle trips per day for mixed use projects that are 25 percent office space; or (iii) 10,000 vehicle trips per day for other projects.

The Policy will be implemented in phases. Effective immediately, scoping documents for EIRs must identify and describe sources of project-related GHG emissions, and propose measures to avoid, minimize, or mitigate such emissions. Project proponents will not be expected to quantify GHG emissions until the state has developed a GHG protocol.

The Policy applies to the six GHGs covered by the Kyoto Protocol (CO2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride). Applicants must also consider both "direct" emissions such as emissions from boilers and "indirect" emissions such as emissions from vehicles driven by employees and plants supplying electricity to the proposed project.

Although the Policy does not mandate the type of measures that must be used to avoid, minimize, or mitigate GHG emissions, EOEEA has developed a guidance document that provides examples of the type of emission reduction techniques that project proponents will be required to implement. These include:

- Energy efficiency improvements;
- Site orientation and building layout to maximize use of natural light, heating, and cooling;
- Use of low-impact development techniques such as reducing the use of asphalt and increasing the amount of shade provided by building elements or landscaping (e.g., green roofs);
- Transportation demand management (e.g., locating near mass transit, access to shuttle or bus services, ridesharing programs, bicycle and pedestrian accommodations, zip car spaces, etc.);
- On-site renewable energy and combined heat and power generation;
- Use of clean and alternative fuels; and
- On-site reuse and recycling of construction and demolition materials and occupant waste materials.

Harvard University entered into the nation's first legally enforceable GHG restrictions for a major real estate project in connection with the university's 20-year master plan for a new campus in Boston's Allston neighborhood. The project will increase the size of the Allston campus from 140 acres to approximately 215 acres.

Under a Draft Record of Decision issued under the state MEPA, the state DEP granted a waiver of a full environmental impact review for construction of a Science Complex consisting of a four-building, 589,000 square-foot project. The proposed waiver was based on the project's minimal environmental impact, ample available infrastructure, commitments for future environmental reviews of other aspects of the project, and other specified conditions One of the conditions is that the Science Complex

will have to achieve 50 percent reduction in GHG emissions compared with national standards set by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. ("ASHRAE").

Under a second MEPA document, Harvard agreed to establish a Special Review Procedure that would be used in lieu of the traditional two-step environmental review process. (The Special Review Procedure is frequently used to provide environmental review for complex development that will be implemented over several years.) The Special Review Procedure for this project requires Harvard to provide Interim Updates every three years and mandates project-specific filings to go through an extensive public comment process. Harvard also agreed to provide resources to facilitate technical review of documents by a citizens' advisory group.

A third scoping document also delineates "sustainable development principles" that Harvard must implement. These practices include stormwater and wastewater standards and high-level transportation requirements as Harvard develops its Allston Campus Master Plan.

California Model

Likewise, the California Environmental Quality Act ("CEQA") requires state and local agencies to determine if a project that requires discretionary approval may have significant environmental effects and to impose feasible mitigation measures. In general, the project proponent must prepare an EIR and may prepare a Mitigated Negative Declaration to reduce or mitigate a project's potentially significant effects.

Following passage of the California Global Warming Solutions Act of 2006, public agencies began receiving comments on draft EIRs demanding that the project's contribution to climate change be assessed by estimating the project's GHG emissions. Earlier this year, the state Attorney General filed a lawsuit against the County of San Bernardino's General Plan alleging that county's general plan failed to analyze climate change issues.

Recently, San Bernardino settled the lawsuit and agreed to amend its General Plan. Under the terms of the settlement, the General Plan must establish a policy to reduce GHG emissions "reasonably attributable to discretionary land use decisions" and internal operations, and require adoption of a "Greenhouse Gas Emissions Reductions Plan." The Plan must set a baseline inventory of current sources of GHGs within San Bernardino, establish an inventory of the 1990 GHG emissions from those same sources and project new GHG emissions in San Bernardino in 2020 from its discretionary land use decisions and governmental operations. The Plan must then target reductions of those projected emissions.

A key to the San Bernardino settlement will be the identification of feasible mitigation measures that can be used to minimize GHG emissions. At this point in time, feasible measures appear to include high-density development to reduce vehicle trips, promoting carpooling, alternative fuel vehicles, public transportation, transportation impact fees, energy efficient design for buildings and appliances, use of solar panels, water reuse systems, and on-site renewable energy production.

As a result of the settlement, it appears that developers and project proponents will have to address GHG emissions in their CEQA documents. Indeed, air districts and other public agencies are now considering requiring project proponents to estimate their projects' GHG emissions and discuss their contribution to potential global warming effects. It would appear that the future projects will have to be designed to reduce direct and indirect GHG emissions. In addition, to pass CEQA muster, project proponents will have to provide a clear analysis in the CEQA documents showing how those designs or measures will reduce GHG emissions so that public agencies can determine that

climate change impacts have been properly evaluated.

A number of lawsuits have been filed under CEQA challenging the adequacy of climate change analysis prepared for private developments. The plaintiffs have challenged an EIR for a 2,700 unit residential/commercial development in *Center for Biological Diversity vs. City of Desert Hot Springs,* an EIR for a 1,500 unit residential development in Banning (*Center for Biological Diversity vs. City of Banning*), have challenged a permit for commercial composting facility in *Center for Biological Diversity vs. San Bernardino County,* and a permit for a 520,000 square-foot, big-box retail development with a 24-hour Wal-Mart Super center that could generate close to 40,000 daily vehicle trips in *Center for Biological Diversity v. City of Perris.*

The California Public Utilities Commission proposed that all new housing developments and commercial buildings would have to produce all of their own power to achieve "zero net energy" by 2020. The energy would be produced from solar panels, windmills, or small generators. The commission also proposed that California electric utilities create a statewide energy efficiency plan rather than pursuing their own separate programs.

The California Energy Commission is recommending legislation that would mandate regional growth plans for areas with more than 100,000 residents to identify housing needs, development patterns, and areas that should remain off-limits. Some utilities and municipal utility districts are working with local governments to site power stations more efficiently and communicate with developers early on in the planning stage to implement non-transportation efficiency measures.

GHG-RELATED LAWSUITS DIRECTED AT SPECIFIC DEVELOPMENT PROJECTS

• In the face of federal inaction on climate change and emboldened by the United States Supreme Court decision in *Massachusetts v. EPA,* supra, environmental organizations and state governments are increasingly turning to the courts to combat GHG emissions.

Indirect Source Review Challenges

In the early years of the Clean Air Act ("CAA"), the EPA contemplated imposing standards on developments that attracted high numbers of vehicles under its "indirect source review" authority. Because this effort was perceived as potentially stifling growth during an economically challenged era, Congress prevented the EPA from devoting resources to this effort.

Now, though, some states with a large component of transportation-related GHG emissions are dusting off this strategy. A recent example involves the Indirect Source Review rule promulgated by the San Joaquin Valley Air Pollution Control District in 2005. The agency's jurisdiction encompasses the southern half of California's Central Valley, which suffers some of the highest concentrations of ground-level ozone and particulate matter in the nation. The goal of the rule is to achieve "emissions reductions from the construction and use of development projects through design features and on-site measures." It requires developers that build 50 houses or more to offset air emissions. The developers can either pay a mitigation fee to the district for the purchase of off-site emission reductions, or can incorporate into their projects elements that will minimize traffic-related emissions, such as incorporating traffic controls to reduce congestion, siting new homes and businesses near public transit, adding bicycle lanes, or building walkable shopping. The National Association of Homebuilders ("NAHB") filed suit challenging the regulation, arguing that local air districts do not have authority under the CAA to regulate "indirect sources" of air pollution such as tailpipe emissions from construction equipment and motor vehicles related to home construction. The NAHB also argues that instead of reducing emissions, the rule will actually exacer-

bate air quality in the San Joaquin Valley's because residents will not be able to afford homes close to their jobs and will have to commute longer distances. Environmental groups that have sought to intervene in the lawsuit contend that the measure is consistent with a 2003 California law mandating that districts regulate indirect emission sources.

Actions Under Section 303 Of The Clean Water Act

In one of the more innovative actions, the Center for Biological Diversity filed petitions with seven states asking them to declare their coastal waters "impaired" by CO2 emissions under section 303(d) of the Clean Water Act ("CWA"), §1313(d). The petitions were filed in Alaska, Florida, Hawaii, New Jersey, New York, Oregon, and Washington and seek to force the states to adopt total maximum daily loads ("TMDL") for CO2 that would effectively require the states to limit CO2 emissions. Earlier this year, a similar petition was filed in California.

Under section 303 of the CWA, states are required to identify segments of surface waters that do not attain water quality standards and then propose measures to achieve them. The petitioners allege that coastal ocean waters absorbed half of the CO2 emissions emitted into the atmosphere and that as a result of the CO2 emissions, the pH of coastal ocean water has fallen from 8.2 to 8.1. Because the pH scale is exponential, what appears to be an insignificant drop actually translates into 25 percent increase in water acidity. The petitioner alleges that the oceanic acidification will have disastrous effects on the food chain because the acidic water will inhibit plankton from absorbing the calcium carbonate they need to build their skeletons and shells, thereby reducing an important food source for marine animals higher in the food chain and jeopardizing the existence of phytoplankton that are a critical source of atmospheric oxygen. Moreover, the petitioners assert that reduced pH will reduce the ability of marine animals to absorb oxygen.

Other State Actions

Friends of the Chattahoochee, Inc. and Sierra Club v. Couch involved an administrative challenge to a Prevention of Significant Deterioration ("PSD") permit issued to a new 1,200 megawatt pulverized coal-fired power plant. The plaintiffs argued that CO2 was a regulated air pollutant in the wake of the United States Supreme Court's ruling in *Massachusetts v. EPA*, supra, and therefore the Georgia Environmental Protection Division should have required the plant to install BACT to limit CO2 emissions. The administrative law judge upheld the permit, finding that CO2 was not yet a regulated pollutant.

A day before the second anniversary of the Katrina hurricane, a federal district court in Mississippi dismissed a class action lawsuit filed against major coal, oil, electric utility, and chemical companies in *Comer v. Murphy Oil.,* No. 1:05-cv-00436 (S.D. Miss. Aug. 30, 2007). The plaintiffs argued that the defendants knowingly contributed to climate change by emitting large quantities of GHGs and that these emissions produced the conditions that led to the severity of the storm. However, the court ruled that the 14 property owners did not have standing and said that their claims raised political questions best left to Congress and the executive branch.

FTC Green Marketing Initiative

Due to the explosion of green marketing claims being asserted by businesses, the FTC recently announced it was requesting comments to systematically review its green marketing guidelines and was particularly interested in environmental claims for offsetting CO2 emissions.

The FTC's Guides for the Use of Environmental Marketing Claims ("Green Guides") were last revised in 1998. The Green Guides explain how the FTC intends to apply Section 5 of the Federal

Trade Commission Act ("FTC Act") prohibiting unfair or deceptive advertising claims to environmental marketing claims.

As part of the Green Guides review, the FTC will be holding public meetings or workshops on a number of green marketing topics. The first meeting will address claims for carbon offsets and renewable energy certificates ("RECs"), which can be used to compensate for CO2 emissions. The FTC indicated that companies often use offsets or RECs to claim that their products are "carbon neutral" but that it was difficult for consumers to verify the truth of such claims or that they have actually achieved the environmental benefit that they purchased. The FTC plans to focus on whether purchasers of carbon offsets are simply funding projects that would have taken place anyway. This is particularly true for projects mandated by environmental regulations, the agency said. Although the market for carbon offsets is relatively small, it is growing rapidly. Indeed, the amount of CO2 emission credits traded in the United States tripled from 2005 to 2006

The Green Guides apply to environmental claims included in labeling, advertising, promotional materials and all other forms of marketing, whether asserted directly or by implication, through words, symbols, emblems, logos, depictions, product brand names, or through any other means, including marketing through digital or electronic means, such as the Internet or email. They also encompass any claim about the environmental attributes of a product, package, or service in connection with the sale, offering for sale, or marketing of such product, package, or service for personal, family, or household use, or for commercial, institutional, or industrial use.

The Green Guides outline four general principles for environmental claims: qualifications and disclosures should be sufficiently clear and prominent to prevent deception; claims should make clear whether they apply to the product, the package, or just a component of either; claims should not overstate an environmental attribute or benefit; and comparative claims should be presented in a manner that makes the basis for comparison clear. In addition, the Green Guides address eight specific categories of environmental claims: general environmental benefits, degradable, compostable, recyclable, recycled content, source reduction, refillable, and ozone safe/ozone friendly. Each Green Guide describes the basic elements necessary to substantiate the claim, including examples of qualifications that may be used to avoid deception, and contains examples of uses of terms that do and do not comport with the guides. In many of the examples, one or more options are presented for qualifying a claim. The Green Guides state that these options are intended to provide a "safe harbor" for marketers who want certainty about how to make environmental claims, but that they do not represent the only permissible approach to qualifying a claim.

According to a recent study by TerraChoice, there are approximately 1,018 products ranging from flooring to air fresheners to mouthwash that make 1,753 environment claims and that the majority of so-called "green" products were labeled in ways that were vague or deliberately misleading. Topping the list of what it calls the six sins of green marketing is the "sin of the hidden trade-off," such as paper products marketing themselves as 10 percent recycled. Another common form of what the Pennsylvania-based firm termed "greenwashing" was irrelevance. It indicated that labels such as "all natural," are meaningless when one considers the fact that arsenic and mercury are also natural. Similarly, the company said that many products have labels declaring them "CFC-free," even though CFCs, or chlorofluorocarbons have been banned since 1978. The company also identified instances of what it terms false environmental advertising. Such examples included a dishwasher detergent that advertised "100 percent recycled paper" pack-

aging that came in a plastic container and shampoos labeled "certified organic" that had no proof of certification.

Some trade organizations are beginning to caution businesses about their green marketing claims. Indeed, the director of the National Advertising Division of the Council of Better Business Bureaus recently warned that companies should expect an increase in claims by competitors challenging the accuracy of environmental claims. A recent article in Advertising Age indicated that green advertising can be fraught with danger if a company's performance does not match its environmental claims and suggested many companies might be better off not raising their heads above the parapet by touting their green profiles.

WHAT DOES THIS MEAN FOR BUILDING OWNERS? • The conventional wisdom is that the transportation and industrial sectors will be most affected by these local GHG initiatives. However, when one takes a close look at these local regulatory initiatives, it is clear that brunt of the GHG emissions reductions will fall on owners and operators of multi-family residential and commercial buildings since the buildings account for the largest source of GHG emissions in most cities. As a result, the costs to comply with the aggressive GHG emissions reduction strategies may soon become an important element of due diligence.

The Energy Department estimates that all public and private buildings consume about three-quarters of the nation's electricity and emit about half of its GHGs. Commercial buildings consume about 40 percent of the nation's natural gas. In densely populated older cities with well-developed mass transit systems, buildings account for an even higher percentage of GHG emissions. Indeed, New York City just released a GHG inventory that showed that the consumption of electricity, natural gas, fuel oil, and steam needed to operate buildings generates 79 percent of the city's total GHG emissions. City-owned buildings represented 64 percent of the government GHG emissions.

According to a recent McKinsey report, market distortions provide disincentives for building owners and occupants to make energy-efficient investments in residential buildings. For example, a person renting an apartment may be using appliances that consume a lot of electric power but the landlord has little incentive to buy more efficient appliances because the tenant pays the electricity bills. Likewise, renters have little incentive to buy energy efficient appliances that will have to be left in the apartment when they vacate it.

However, BOMA has indicated that developers and building owners are finding their profits squeezed by high energy and water costs. BOMA says that these factors constitute 28 percent of operating costs for downtown office properties and 30.4 percent for suburban properties.

Some real estate firms have started to jump on the green building bandwagon because they have become nervous about holding a portfolio of obsolete, inefficient buildings. Increasingly, clients and tenants show a preference for green buildings, which have been proven to increase productivity, retain employees, and lower absenteeism. Indeed, according to the McGraw-Hill study, green buildings have 3.5 percent higher occupancy rates, 3 percent higher rents, and an average 7.5 percent increase in building value. Corporations with sustainable business policies are building highly visible green headquarters, including Bank of America, Toyota, Goldman Sachs, Hearst, IBM, JPMorgan Chase, and Herman Miller. The Freedom Tower, which replaces the World Trade Center, will be LEED-certified.

Much of the focus to date has been on the indirect GHG emissions of buildings through reducing energy consumption by swapping out inefficient lights, installing light sensors and better-insulated windows, and adjusting HVAC systems. However, energy consumption is only a part of a building's

carbon footprint. Many large buildings have large oil-fired boilers that emit significant amounts of GHG directly into the atmosphere and are considered "major sources" under the CAA that must obtain a Title V air pollution permit. Indeed, a building owner in New York City was recently fined $190,000 for not obtaining Title V permits for two of its buildings.

Since the Supreme Court ruled that GHGs can be considered a pollutant and also relaxed the standing requirements, we should expect numerous lawsuits to challenge new projects. It is not too hard to envision environmental organizations and project opponents using NEPA and state environmental review laws to delay or block projects on climate change grounds. The plaintiffs will likely allege that local regulators did not sufficiently evaluate climate changing factors. Local governments may be required to account for climate change in environmental impact reports, which may also mean that guidance on completing environmental reviews may have to be revised.

Thus, it is not inconceivable that in the near future, purchasers and lenders will be routinely asking if a building meets the requirements of local climate change initiatives and, if not, require cost estimates for bringing the building into compliance. If a building is not located in a jurisdiction that has adopted a climate change program, the lender might as a condition of the loan require the borrower to make capital investments to reduce the carbon footprint of the building. These costs may not only involve energy efficiency measures but possibly boiler retrofits and pollution control technology. For construction loans, lenders or anchor tenants may require developers to covenant that the building will meet certain sustainability standards or certifications, and to require third-party verification that the building achieves the intended standard. Already, some banks are starting to provide better loan terms to owners of "green" buildings. These more favorable terms can include lower interest rates and larger loans as a result of lower operating costs (and lower building reserves). Landlords may start to inquire about the energy needs of tenants and require energy-intensive tenants such as medical offices to take measures to reduce their energy consumption. Shareholders and members of co-ops and condos may want their buildings to reduce the carbon footprint as well.

Green construction will bring with it a host of novel legal contractual issues that attorneys for building owners, developers, and lenders will need to anticipate and address in contracts, leases, and loan agreements, such as the specific responsibilities among the members of the project team. The American Institute of Architects ("AIA") has already issued its Standard Form of Architect's Services for LEED Certification (B214). For now, a summary of the things attorneys need to do includes the following:

- Identifying the design and performance standards, including long-term performance goals, in the bid packages. It is crucial for the project team to determine the certification goals early in the project. Not all credits are feasible for every project. The developer or building owner must understand that certification can involve trade-offs. For example, lighting is the single largest source of energy consumption of a building. Efficient lighting is critical for scoring LEED points. Design professionals should ensure that the project developer/owner understands how certain lighting choices will impact building accents and promote efficient lighting design. Electrical engineers will have to work with architects to develop the most energy-efficient lighting design. Electrical engineers, in turn, need to work with mechanical engineers to select efficient pumps and other systems;
- Informing contractors of sustainable practices such as erosion and sediment controls, site restoration, waste management practices such as on-site sorting to minimize volume of wastes sent to landfills, material reuse and recycling

practices to achieve specified percentages, and use of low-emitting construction equipment and other strategies for reducing emissions;

- Assigning responsibility to a member of the project team for selection of green construction materials, substitutions, use of building materials from local or regional locations, and certified wood. A team member should be responsible for confirming performance of the materials and verifying that the materials have received approval ratings such as Underwriters Laboratories or Factual Mutual rating;
- Verifying that contract language clearly sets forth the specifications for achieving the desired standard, identifies the parties who are responsible, the different categories of points, and ensuring that the various members of the project team are contractually obligated to achieve their respective point goals and certification levels;
- Determining if a liquidated damages clause is appropriate for failure to achieve the mandated certification;
- Determining applicability of intellectual property infringements for certain green building designs, techniques, or equipment, and who is responsible for addressing these issues;
- Verifying the limits and scope of liability coverage of design professionals to determine if the work is covered;
- Reviewing forms, correspondence, and contracts for language that could possibly void insurance coverage under the warranty and guaranty exclusion;
- Reviewing property insurance coverage for the building to determine if costs for certification or requirements to upgrade to a new green building code are covered, considering allocation of such costs in the lease, and responsibility for necessary endorsements and policy enhancements.

CONCLUSION • With the growing public and private pressure to reduce GHG emissions and the demand for green buildings, it would not be surprising if purchasers and their lenders start requiring evaluation of a building's carbon footprint during due diligence. In the not-too-distant future, we may begin to see lenders and building owners performing Climate Impact Assessments or including GHG issues as a non-scope item in the Phase 1 like other environmental issues or perhaps address compliance with local climate change requirements in the Property Condition Assessment reports.

Particularly for existing buildings, purchasers, tenants, and lenders will want to determine if a local government has established green building requirements, if the particular building is subject to local GHG requirements or will be subject to such standards in the future, the implementation schedule of the future requirements, and will want to evaluate the costs of such compliance to determine if the purchase price should be adjusted to reflect those future costs. Purchasers or tenants of buildings marketed as a green building will want to verify the certification. Owners of buildings that will be subject to renovation upgrades who either plan to modify their buildings after the closing or who have tenants planning substantial renovations will want to ensure that the modifications comply with the applicable green building requirements. Lenders will want to know the anticipated costs of such future upgrades so that appropriate building reserves may be established. Building owners will also want to calculate any savings in operating expenses to determine if the projected savings can result in more favorable loan terms or reduced insurance premiums.