
Climate Change and the Environmental Impact Review Process

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In the explosion of modern environmental law that occurred in the 1970s, the first major statute was the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321–4347, signed into law by President Richard M. Nixon on January 1, 1970. It spawned “little NEPAs” in about twenty-five states and eighty countries. Council on Environmental Quality, *The National Environmental Quality Act: A Study of Its Effectiveness After Twenty-Five Years* (1997). All of these laws were designed to require governments to consider environmental issues in their decisions. The chief mechanism of NEPA and its state equivalents is the preparation of environmental impact statements (EISs) (called environmental impact reports in some jurisdictions), which are typically large books that examine a broad range of impacts and alternatives.

A generation later, with the emergence of climate change as the preeminent environmental issue, it is not surprising that those implementing NEPA and little NEPAs are under pressure to consider climate change in EISs and other required documents. So far, as in most aspects of this issue, the states have been ahead of the federal government in considering climate change and are developing procedures that may be applied more broadly if a more sympathetic presidential administration comes into office. Meanwhile, the courts are being asked to spur action, and some are doing so.

NEPA requires the preparation of an EIS for “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4322. EISs must address not only direct effects, but also indirect effects that are “reasonably foreseeable.” *Id.* Among the topics to be discussed are “[e]nergy requirements and conservation potential of various alternatives and mitigation measures.” *Id.* The idea of disclosing indirect as well as direct energy impacts in NEPA documents was first discussed many years ago (I wrote an article on the subject while a law student in 1975), but it did not catch on.

In 1989 the U.S. Department of Energy filed papers in a lawsuit in New York arguing that the Shoreham Nuclear Plant should not be shut down without an evaluation of the climate impacts of shifting from nuclear to fossil fuel power plants. In 1990 Richard B. Stewart, Assistant Attorney General for Land and Natural Resources, wrote a memo urging

the office of Management and Budget to coordinate federal efforts to address climate change in the NEPA process. In 1997 the Council on Environmental Quality, the White House office charged with overseeing the implementation of NEPA, issued a draft guidance document finding that the available scientific evidence indicates that climate change “is reasonably foreseeable” and therefore should be assessed in NEPA documents. Though the scientific evidence has become considerably more definitive in the past decade, this draft guidance has never been made final.

Many federal EISs these days do include a mention of climate change. In preparing this article, I found such mentions in ten federal EISs. In none was the discussion very extensive. Most of the EISs provided only the unsurprising and not especially useful information that the emissions of greenhouse gases (GHGs) from the particular project would be an insignificant portion of global emissions. They then concluded that no further analysis was needed. Two of the EISs—for an offshore wind energy project and a high-speed rail project—said the actions would help fight climate change.

Federal Court Decisions

Several federal courts have addressed the question of whether a particular action required an EIS-level discussion of climate impacts. The first such decision was *City of Los Angeles v. National Highway Traffic Safety Administration*, 912 F.2d 478 (D.C. Cir. 1990). It concerned the setting of the corporate average fuel economy (CAFE) standard. The complaint alleged that a lower standard would worsen global warming. The court found that plaintiffs had standing to bring the lawsuit (itself a significant holding), but that the one-mile per gallon change in the CAFE standard at issue was not so significant as to require an EIS. This court, like all subsequent federal courts to address the question, did not doubt that global warming was a proper subject for analysis under NEPA; it merely found a particular action’s impacts to fall below the threshold of significance.

The next decision, *Border Power Plant Working Group v. Department of Energy*, 260 F. Supp. 2d 997 (S.D. Cal. 2003), concerned the construction of transmission lines to carry electricity from new power plants in Mexico to users in Southern California. The court found that carbon dioxide (CO₂) emissions should have been analyzed under NEPA. The same year, the Eighth Circuit in *Mid States Coalition for Progress v. Surface Transportation Board*, 345 F.3d 520 (8th Cir.

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2003), considered the construction of a rail line to bring coal from mines in Wyoming to power plants in Minnesota and South Dakota. The court found that the EIS should have considered the air emissions, including CO₂, from the power plants. The agency went back and supplemented its EIS, including a cursory discussion of climate change impacts; when that new document was challenged, the court found it to be sufficient. *Mayo Foundation v. Surface Transportation Board*, 472 F.3d 545 (8th Cir. 2006).

In another case, plaintiffs won several procedural motions. *Friends of the Earth, Inc. v. Mosbacher*, 488 F. Supp. 2d (N.D. Cal., Mar. 20, 2007), concerns the actions of the Overseas Private Investment Corporation (OPIC) and the Export-Import Bank (Ex-Im Bank) in financing several energy projects abroad. Plaintiffs said these projects would generate GHGs that would affect the climate in the United States, and OPIC and Ex-Im Bank should have analyzed the projects under NEPA. The U.S. District Court for the Northern District of California ruled that the case should go forward. It found that, because domestic effects were alleged and the relevant decisions were made in the United States, the case did not fail for alleging only extraterritorial impacts. It found disputed issues of fact as to whether the federal actions in financing the projects were so significant that EISs should have been prepared. The district court subsequently certified several key issues in the case for interlocutory appeal to the Ninth Circuit.

Most recently, the Ninth Circuit annulled the average fuel economy standards for light trucks, in part because no EIS had been prepared. The court declared, “The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct.” *Center for Biological Diversity v. National Highway Traffic Safety Administration*, Nos. 06-71891, 06-72317, slip op. at 14909 (9th Cir. Nov. 15, 2007).

The U.S. Environmental Protection Agency (EPA) has begun to comment on the GHG aspects of other agencies’ EISs. In June 2007, for example, EPA Region VIII criticized a draft EIS for additional mining activities by the Mountain Coal Company at its West Elk Mine in Colorado for not quantifying emissions of methane (a potent GHG) or analyzing ways to capture the methane that would be vented into the atmosphere.

Outside of the rubric of NEPA, EPA has performed several detailed analyses of climate change impacts. For example, on March 29, 2007, EPA issued *Federal Register* notices seeking public comment on documents stating the potential impact of climate change on combined sewer overflow projects and on publicly owned treatment plants. On August 10, 2007, EPA published draft documents about the impacts of climate change on watersheds, aquatic invasive species, and stream and river biological indicators. All of these would be useful in eventual NEPA analysis.

Massachusetts

As noted above, some states are ahead of the federal government on this issue. Massachusetts is the one state that has

issued a formal policy. MASSACHUSETTS EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS, GREENHOUSE GAS EMISSIONS POLICY (Apr. 23, 2007). It applies to many (but not all) projects undergoing analysis under that state’s equivalent of NEPA, the Massachusetts Environmental Policy Act (MEPA). Mass. Gen. Laws. ch. 30, §§ 61–62H. The policy requires quantification of project-related GHG emissions, and it states that

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MEPA will also require that proponents consider a project alternative in the [EIS] that incorporates measures to avoid, minimize, or mitigate such emissions. For projects subject to the policy, MEPA will immediately begin incorporating into new scoping certificates the requirement that the proponent identify and describe sources of, and propose measures to avoid, minimize, or mitigate for, project-related GHG emissions.

The state formed a technical advisory committee to formulate a protocol for quantifying GHG emissions. The resulting document includes a useful list of suggested ways to mitigate climate impacts through siting, site design, building design and operation, and transportation. MASSACHUSETTS EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS, MEPA GREENHOUSE GAS EMISSIONS POLICY AND PROTOCOL (Oct. 19, 2007).

California

California has received a great deal of attention for its Global Warming Solutions Act of 2006, also known as AB 32. But that law delegates formulation of detailed regulations to the California Air Resources Board, and the regulations are not due to be adopted until January 1, 2011, and to be effective by January 1, 2012.

Meanwhile, several lawsuits have been filed alleging that environmental impact reports issued under California’s impact assessment law, the California Environmental Quality Act (CEQA), Cal. Pub. Res. §§ 21000 et seq., should consider climate change. The only two of these cases decided to date challenged development projects that were approved without consideration of the potential impact of climate change and resulting regulations. In a tentative ruling in the first of these, the court found that petitioners had not demonstrated that

significant new information has become available with regard to climate change and its effect on the particular project between certification of a supplemental environmental review document and the approval of the permits for the project. The court took pains to explain the narrowness of its ruling:

Petitioners have made a persuasive showing that there is a growing consensus on the issue that has caused state environmental agencies to give it closer attention. As the projected effects of climate change become clearer and can be related to specific sites, there is little doubt that those effects will have to be factored into the analysis of many projects under CEQA.

Natural Resources Defense Council v. Reclamation Board of the Resources Agency of the State of California, Case No. 06 CS 01228 (Super. Ct., Sacramento County, Apr. 27, 2007). Similarly, *American Canyon Community United for Responsible Growth v. City of American Canyon*, Case No. 26-27462 (Super. Ct., Napa Co., May 22, 2007) (rejecting demand for supplemental environmental review of proposed Wal-Mart supercenter to consider climate change impacts).

There is no settled method for analyzing climate change in the impact assessment of a project.

California Attorney General Jerry Brown has submitted to twelve local governments formal comments seeking analysis of climate change in CEQA documents. In April 2007 he brought a lawsuit against the county of San Bernardino, in southeastern California, the largest county by square miles in the contiguous forty-eight states with one of the fastest growing populations. The lawsuit was so controversial that critics, who feared that GHG analysis would make it harder to build new housing and other needed projects, held up passage of the state budget hoping to obtain a prohibition on CEQA climate litigation; they obtained a limited and temporary ban on certain kinds of this litigation and a mandate for guidelines on climate analysis under CEQA. In August 2007 that lawsuit was settled under terms that require the county to develop an inventory of GHG emissions related to land use decisions and county operations, set emissions reduction goals, and adopt mitigation measures. At the end of a thirty-month period, the county will amend its general plan, which governs growth in the county. Among the measures that the county may include in its general plan are parking spaces for high-occupancy vehicles and car-share programs; electric vehicle charging facilities; high-density developments that reduce vehicle trips and increase public transit use; parking limits; transportation impact fees on developments that fund public transit; standards requiring energy-efficient buildings,

appliances, and lighting; methane recovery at landfills; and renewable energy options.

In September 2007, Brown settled another CEQA dispute by reaching an agreement with ConocoPhillips to reduce the GHG emissions and energy consumption at an oil refinery in Contra Costa County.

To help local agencies cope with the uncertainty, the California-based professional society issued a white paper on March 5, 2007, on how to analyze GHGs in CEQA documents. ASSOCIATION OF ENVIRONMENTAL PROFESSIONALS, ALTERNATIVE APPROACHES TO ANALYZING GREENHOUSE GAS EMISSIONS AND GLOBAL CLIMATE CHANGE IN CEQA DOCUMENTS (June 29, 2007). The paper lays out several possible approaches, several of which involve an inventory of GHG emissions expected from a project and an assessment of the project's compliance with emission-reduction strategies contained in a report of the California Climate Action Team to the governor. (A more comprehensive list of strategies is being developed to help implement AB 32.) The white paper also discusses the consideration of off-site mitigation, such as reforestation, planting/replanting, and carbon trading.

Additionally, a computer model that is widely used to conduct impact analysis in California, URBEMIS, is currently being updated to report on CO₂ emissions.

New York

The New York State Environmental Quality Review Act (SEQRA), N.Y. Env'tl. Conserv. Law §§ 8-0101 et seq., like MEPA and CEQA, was based on NEPA and has a similar requirement for the preparation of EISs for significant actions. The statute provides that EISs should discuss the "effects of the proposed action on the use and conservation of energy resources, where applicable and significant." N.Y. Env'tl. Conserv. Law § 8-0109.2(g). EISs under SEQRA, like those under NEPA, are also required to consider, among many other things, a project's effects on air pollution. Because the principal source of GHGs is the use of energy and the most important GHG, CO₂, was declared by the U.S. Supreme Court to be an air pollutant in *Massachusetts v. EPA*, 127 S.Ct. 1438, (2007), the New York State Department of Environmental Conservation (DEC) would seem to have ample authority to require consideration of climate change in EISs under SEQRA. DEC is known to be taking steps in that direction. The New York City Office of Environmental Coordination is also considering requiring analysis of climate change in EISs prepared by the City of New York. Meanwhile, on October 11, 2007, DEC released a draft EIS for its implementation of the Regional Greenhouse Gas Initiative, a multistate effort to reduce CO₂ emissions from power plants.

The New York State Department of Transportation (NYDOT) has been requiring GHG analysis for several years. In November 2003 NYDOT issued three "draft interim guidance" documents setting forth, in some detail, how to calculate CO₂ emissions from proposed projects as well as from Transportation Improvement Programs and Long Range Plans. These documents were written for inclusion in

NYDOT's guidance document *The Environmental Procedures Manual*. Though they have not been finalized, NYDOT is already applying them in project review. They examine direct vehicle use of fuel, GHG emissions from that fuel, and emissions in roadway and rail line construction and maintenance. The stated authority for this analysis is the 2002 State Energy Plan, which adopted a goal of reducing GHG emissions 5 per cent below 1990 levels by 2010 and 10 per cent below 1990 levels by 2020.

No judicial decision under SEQRA appears to have addressed the issue of climate change. However, one decision upheld DEC's decision to impose energy conservation conditions in approving an action (a shopping center). *Town of Henrietta v. DEC*, 76 A.D.2d 215, 430 N.Y.S.2d 440 (4th Dept. 1980).

King County, Washington

The Executive of King County, Washington (which includes Seattle), issued an order requiring county agencies to consider climate change in their review of projects. Ron Sims, Executive Order on the Evaluation of Climate Change Impacts through the State Environmental Policy Act (June 27, 2007). The order requires "that climate impacts, including but not limited to those pertaining to GHGs, be appropriately identified and evaluated" for every public or private project where a county department is acting as lead agency under SEPA. In this respect it goes further than the Massachusetts rule, which applies only to projects that meet certain criteria. The County is now circulating a draft worksheet that project proponents can use in estimating their GHG emissions and has issued several executive orders with details on actions that county agencies must take. See www.kingcounty.gov/exec/globalwarming/execorders.aspx.

Australia

As the only major industrialized country in the world other than the United States that has not signed the Kyoto Protocol, it is unsurprising that Australia has also seen litigation on how climate change should be considered in environmental impact review. On November 27, 2006, the New South Wales Land and Environment Court ruled that the environmental impact review of a major coal mine project was inadequate under the Environmental Planning and Assessment Act of 1979. The emissions directly from the project, and from its electricity use, had been assessed, but the court found there should also have been a study of the indirect impacts of burning the coal by third parties, including by overseas purchasers. *Gray v. Minister for Planning and Ors* [2006] NSWLEC 720 (Nov. 27, 2006).

Less than three months later, the Land and Resources Tribunal of Queensland came to a quite different conclusion. It ruled that the environmental review of a coal mine need not consider GHG impacts, and it went on to express skepticism about the gravity of climate change. With reference to the application to impose GHG reduction measures, the court

found that "[a]part from having no demonstrated impact on global warming or climate change, any such condition would have . . . the real potential to drive wealth and jobs overseas and to cause serious adverse economic and social impacts upon the State of Queensland." *Re Xstrata Coal Queensland Pty Ltd & Ors* [2007] QLRT 33 (Feb. 15, 2007).

Pending Litigation

As of November 2007, several cases pertaining to the consideration of climate change impacts in environmental impact review were pending. For example, the Montana Environmental Information Center and others have brought a suit in the U.S. District Court for the District of Columbia claiming that the Rural Utilities Service, part of the U.S. Department of Agriculture, was required by NEPA to consider CO₂ emissions before funding several coal-fired power plants. The Center for Biological Diversity (CBD) has sued the City of Banning, California, in state court in California under CEQA for not considering the GHG impacts of a 1,500-unit housing development.

Of course, litigation is not the only avenue opened by NEPA and its state equivalents to those wishing to reduce projects' GHG impacts. The impact assessment process offers numerous opportunities for public participation. During the scoping process, in which interested persons may offer suggestions on the contents of the EIS, and during the hearing and public comment period on the draft EIS, comments may be submitted urging consideration of GHG impacts. The process attending an EIS is often noisy and provides numerous political as well as legal pressure points.

What to Analyze

As is apparent from the above, there is no settled method for analyzing climate change in the impact assessment of a project. Several different protocols have been circulated, including those from the above-mentioned Massachusetts Executive Office of Energy and Environmental Affairs and California's Association of Environmental Professionals. A third, from the Canadian Environmental Assessment Agency, is entitled "Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners." (Nov. 2003). The fourth, from Levett-Therivel Sustainability Consultants, is called "Strategic Environmental Assessment and Climate Change: Guidance for Practitioners" (May 2004) and is designed for use in England and Wales. The World Resources Institute and the World Business Council for Sustainable Development have developed a GHG Protocol Initiative that includes a project activity protocol that is useful in making many of the calculations described above. See www.ghgprotocol.org/.

These protocols differ considerably in their form and details, but they and other emerging technical literature on analyzing climate change in the impact assessment of a project generally call for consideration of five different kinds of impacts.

The first kind is direct operational impacts (i.e., smoke-

stack emissions from the facility; fugitive emissions such as methane escaping from oil and gas wells; emissions of methane and nitrous oxide from agricultural operations; methane from landfills and wastewater treatment plants; and impacts on carbon “sinks,” such as forests, agricultural soils, and wetlands. A publication of the U.S. Energy Information Administration, “Documentation for Emissions of GHGs in the United States 2003,” provides factors that are useful in such analysis. The California Climate Action Registry has published a GHG reporting protocol that can be used as well.

The second is purchased electricity, the GHGs emitted when electricity that the facility will purchase is generated off-site. Energy modeling software is available that quantifies projected energy usage of various kinds of buildings. The total purchased electricity usage is then multiplied by an emissions factor that calculates the CO₂ emitted per unit of power. This will vary by region, depending on the kinds of generating facilities. An area with mostly coal plants will have much higher emission factors than an area with mostly hydro and nuclear plants, for example. The independent system operators in some regions have published marginal emissions reports with the factors that can be used.

The third kind of impact is induced trips, which are employee, customer, and vendor travel and the transport of raw materials, manufactured goods, and other freight to and from the facility. The daily vehicle miles of travel are projected, and that figure is multiplied by emission factors.

The fourth, construction impacts, is the GHG emissions from the extraction and fabrication of construction materials such as cement, whose manufacture can be highly emitting, and from the equipment at the construction site and that services it. This impact is not as widely accepted as the others, and the methodologies are not as advanced.

The fifth kind, the impact of climate change on the project, is how climate change affects the project, rather than the other way around as with the preceding four categories. Among these types of factors could be the effects of rising sea levels and water tables, increased flooding, greater temperature variations, water shortages, reduced snowpack, and activities needed to adapt to climate changes. Another possible factor in this category is the effect of anticipated future regulations of GHG emissions.

Key Questions

As federal and state agencies develop their own procedures for consideration of climate change in the impact review process, several policy and analytical choices must be made. Among them are the following:

1. Will the EIS be purely a disclosure document? Or will mitigation measures, once identified, have to be adopted?
2. If mitigation measures are adopted, how will compliance be monitored and enforced?
3. Will GHG emission guidelines be adopted for various kinds of projects? Will proposed projects merely be measured against them, or will they have to meet them?
4. Can alternatives, such as smaller or different kinds of

projects or different sites, be mandated if they would have lower climate impacts?

5. Are offset purchases or trading considered to be acceptable mitigation? Can offsets be purchased from anywhere in the world or only nearby?

6. How far upstream need the analysis go? For example, in considering the GHGs generated in the construction of a building, should the EIS consider the fabrication of the building materials? The extraction of the raw materials?

7. Will climate analysis be required for all projects subject to the impact review law (as in King County), or only those of a certain type or over a certain size (as in Massachusetts)?

8. Will climate change impacts alone be enough to trigger the need for an EIS, or must some other significance criterion be tripped?

9. In assessing the impact of a project on transportation-related emissions, how does one account for the reality that if the project were not built, people driving there might be driving somewhere else instead, casting into doubt the net increase in these emissions?

10. To what extent should GHG emissions beyond the borders of the state or the United States be considered? For example, how should GHG emissions be considered if a U.S. agency funds a project abroad as in *Friends of the Earth* or if a domestic project involves the purchase of materials manufactured in China from timber grown in Indonesia?

11. What kinds of future climate changes should be assumed? For example, should worst-case scenarios for sea level rise be used and corresponding flood protections be required?

Looking Forward

The federal and state agencies that conduct environmental impact review already appear to have statutory authority to consider climate impacts; therefore, unless the executive branch is resisting, there is no necessity for action by Congress or, in those states with NEPA-equivalent laws, by state legislatures. To the extent that the agencies do not use the authority they have, rulemaking petitions may be an option. Agencies may also consider creating incentives for GHG reduction by setting emissions thresholds or technology standards; applicants that met the thresholds and standards might be exempt from further requirements for review of their GHG impacts or might be given other benefits.

Many of the current state and regional efforts to fight climate change are undertaken because of the federal government's refusal to adopt a regulatory program and may become unnecessary if such a program comes into being. Because of the considerable GHG impacts of buildings and other projects that have no federal involvement, however, state-level impact review would continue to be important even after a mandatory federal program takes effect. Moreover, analysis of GHG emissions of proposed projects in the environmental impact review process may become an important element of a national strategy of achieving GHG reduction goals, whether purely domestic or in conjunction with a future international agreement. 🌳