

**SUCCESS BY A THOUSAND CUTS: THE USE OF
ENVIRONMENTAL IMPACT ASSESSMENT IN ADDRESSING
CLIMATE CHANGE**

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INTRODUCTION

On April 17, 2007, the members of the United Nations Security Council listened to ambassadors and leaders from fifty-five nations discuss the role of climate change as a global security threat.¹ Many of the most impassioned pleas came from small Pacific island nations, whose geographic isolation and low land levels create an extreme vulnerability to the impacts of climate change. Ambassador Afelee Pita of the coral atoll nation of Tuvalu decried that climate change was a global conflict not “fought with guns and missiles but with weapons from everyday life—chimney stacks and exhaust pipes.”² Ambassadors from other Pacific island nations called attention to the unprecedented loss of entire nations to rising sea levels, while noting both the immediate potential for widespread population displacement and how related ocean acidification threatens breeding grounds within some of the world’s wealthiest fisheries.³ Despite the significance of the impacts, climate change remains more often a distant diplomatic and political issue.

Ambassador Colin Beck of the Solomon Islands remarked on how ineffectual political treatment produced few tangible results, noting that “currently the issue of climate change is discussed—like a comet—in a substantial way once every four to five years through a conference . . . [but] as soon as such conferences come to a close, it disappears again.”⁴ Implied in the Ambassador’s warning was a concern that the slothful pace, international divisions; and poor domestic implementation of international climate change agreements will fail to stem the rising tide. There is an immediate need for more effective implementation tools. Considerable potential still remains in further elaborating strategies which will integrate climate change goals with localized action.

1. Edith Lederer, *Security Council Tackles Climate Change*, WASH. POST, Apr. 18, 2007, available at <http://www.washingtonpost.com/wpdyn/content/article/2007/04/18/AR2007041800219.html>.

2. U.N. SCOR, 62nd Sess., 5663rd mtg. at 8, U.N. Doc. S/PB.5663 (Resumption 1) (2007), available at <http://www.auswaertiges-amt.de/diplo/de/Aussenpolitik/InternatOrgane/VereinteNationen/ForumGF/17-GF/17GF-DebatteVN.pdf>.

3. Ambassador Alfred Capelle of the Republic of the Marshall Islands remarked that: As our coral reefs continue to vanish due to bleaching and our marine ecology is altered by increasing greenhouse gas emissions, we must emphasize to the Security Council the severe and growing threat posed by climate change to our fish stocks—a critical global food source. The diminishment of food supplies in the face of rising populations not only threatens our own national subsistence, but will also intensify international competition for increasingly scarce essential resources. Such future rivalries will create an invitation to global conflict.

Id. at 17; see also *id.* at 14 (Statement of Ambassador Stuart Beck of Palau).

4. *Id.* at 13.

The complex search for a universal solution to global climate change continues to perplex environmental policy experts. Never before has environmental law faced such a grave but distant challenge that cuts across so many levels of government and involves a multitude of political and socio-economic issues. Yet with all of the attention placed on creating a cooperative international solution, some of the most effective strategies for addressing climate change impacts may already exist in site-specific, localized decision tools such as Environmental Impact Assessment (EIA) laws, which allow a government actor to weigh a variety of environmental impacts and alternatives to proposed action or construction while also allowing both key stakeholders and the interested public to participate in the study and decision-making process. While the legal structure and process may differ between jurisdictions, EIA as a general norm has been unilaterally adopted on a global scale by many national and local governments, as well as independent international institutions. However, relatively few of these jurisdictions have started to analyze climate change impacts as part of their EIA processes. Instead, much of the collective hope for addressing climate change appears to rest on the slow pace of global diplomatic dialogue.

This pursuit for a singular global solution can be likened to many fables, one of which might be King Arthur's legendary search for the Holy Grail. In the satirical film *Monty Python and the Quest for the Holy Grail*, a fictional King Arthur knocks upon the walls of a castle and announces his noble search, only to discover that a taunting Frenchman within the fortress claims "we've already got one."⁵ A disbelieving King Arthur retreats to continue his search only to discover, to his chagrin, that the sarcastic Frenchman did indeed have the Holy Grail.

In analyzing the ability of EIA to address climate change issues, one hopes that global decision-makers do not repeat King Arthur's follies by completely forsaking an obvious answer. That the United States Senate first recognized the viable application of EIA to climate change in the mid-1980s, and that this application is still not accepted professional practice, suggests that we are still searching in vain for the "Holy Grail" of unified global policy solutions.

This Article, in explaining both the science of climate change as well as the creative flexibility inherent within EIA, demonstrates that EIA can readily analyze and discuss climate change issues in a wide variety of projects. An EIA project can often easily quantify the expected amount of specific greenhouse gasses associated with a particular project, but need not

5. MONTY PYTHON AND THE HOLY GRAIL (Columbia/TriStar Studios 1975).

always do so.⁶ This Article first provides an overview of the EIA structure and typical process, focusing upon United States EIA laws which served as a general global template for subsequent EIA laws. Next, this Article provides a brief overview of progress on current global, national and regional efforts to address climate change impacts. The Article then undertakes a critical and detailed examination of the typical EIA process as a means to address climate change impacts, with a focus on structural challenges and existing guidance. The Article compares efforts in other nations under EIA laws to address climate change with limited action taken to date within the United States to do the same. Next, the Article briefly discusses how climate change could be treated in typical EIA studies. Finally, the Article concludes that, while perhaps an imperfect solution by itself, EIA nonetheless provides an important but largely unrealized opportunity for immediate global action on climate change.

I. NEPA & EIA OVERVIEW

The United States enacted the National Environmental Policy Act of 1970 (NEPA) in an effort to “encourage productive and enjoyable harmony between man and his environment,” in response to environmental degradation brought about by a largely unbridled postwar economic expansion.⁷ The law was introduced by President Nixon as a tool to

6. See generally Michael Gerrard, *Climate Change and the Environmental Impact Review Process*, 22 NATURAL RES. & ENV'T 20–24, available at http://www.abanet.org/environ/pubs/nre/winter08/climate_change_environ.pdf (summarizing pending and recent litigation on climate change and briefly discussing comparative policies and procedures under which climate change would be addressed in an EIA study processing).

7. National Environmental Policy Act, Pub. L. No. 91-190, § 2, 83 Stat. 852 (1970) (codified at 42 U.S.C. § 4321 (2000)); see also Kevin Preister & James A. Kent, *Using Social Ecology to Meet the Productive Harmony Intent of the National Environmental Policy Act*, 7 HASTINGS W.-NW. J. ENV. L. & POL'Y 235 (2001). Discussing the creation of NEPA, Preister and Kent note:

NEPA was symmetrically fashioned—section 101 laid out the policy intent, while section 102 laid out the procedural requirements for performing an EIS. For every ‘major federal action,’ analyses of current conditions and a range of alternatives are to be accomplished, with mitigation measures at least listed and considered that will reduce negative impacts or enhance positive effects.

In section 101, the concept of productive harmony proposes an integration or a balance between people and nature, and states that the benefits of the environment should be shared widely (and fairly) while maintaining environmental quality. Diversity and options are to be preserved. Congress also intended that citizens take individual responsibility to ‘preserve and enhance’ environmental quality. . . .

encourage federal agencies to bridge complex conflicts between the competing tangle of economic, social, and ecological concerns often surrounding a proposed infrastructure project.⁸ When agencies chose to utilize the process as a means to engage and negotiate different interests, NEPA worked effectively in diffusing mutual animosity and in allowing balanced projects to progress. The potential success of NEPA did not go unnoticed. The decade following its inception saw many states create their own versions of NEPA. These “mini-NEPAs,” eventually adopted by at least twenty states, applied to the actions of state agencies and their applicants for permits or discretionary approval.⁹ At least six “mini-NEPAs,” including New York’s State Environmental Quality Review Act (SEQRA), extended environmental review to state authority delegated to the local or municipal level for a variety of land use planning actions.¹⁰

The American experience with EIA was also noticed by the international community. The NEPA model was adopted in varying forms by over 100 nations within their domestic law.¹¹ This international phenomenon of EIA is unique, given that its rapid international codification took place unilaterally without the mandate of an explicit multilateral environmental agreement or treaty. The prevalence of EIA was noted

By contrast, section 102 focuses on procedures by which the effects analysis is to be achieved. It is the action-forcing provisions of the law that call for the creation of environmental impact assessments for federal actions. Although section 102 calls for interdisciplinary approaches that include the social sciences, in almost all cases reviewed by the authors, the social and economic portions of EISs consisted of just a few paragraphs that have little meaning for accomplishing productive harmony.

Preister & Kent, *supra*, at 239–40.

8. *See id.* at 248–50 (proposing six different ways NEPA can harmonize the competing interests which complicate proposed projects).

9. According to a working paper at the Public Law Research Institute at the University of California-Hastings College of Law, the following states are among those with “mini NEPAs”: California, Connecticut, District of Columbia, Florida, Georgia, Hawaii, Indiana, Maryland, Massachusetts, Michigan, Minnesota, Montana, New York, North Carolina, Puerto Rico, South Dakota, Virginia, and Wisconsin. Ariela Freed, *Legal Analysis of the Conflicts Between the California Environmental Quality Act and the Forest Practices Act: A Comparison of California, Washington and Federal Law*, at app. (Public L. Research Inst., PLRI Working Papers Series, 2007), available at <http://w3.uchastings.edu/plri/96-97tex/califwash.htm#top>.

10. Kathryn C. Plunkett, Comment, *Local Environmental Impact Review: Integrating Land Use and Environmental Planning Through Local Environmental Impact Reviews*, 20 PACE ENVTL. L. REV. 211, 211–12 (2002).

11. For a thorough inventory of national EIA laws, regulations and policies, see Nicholas A. Robinson, *International Trends in Environmental Impact Assessment*, 19 B.C. ENVTL. AFF. L. REV. 591 app. (1992). Note that in the sixteen years subsequent to the publication of this list, other nations may have adopted EIA.

during the Rio Declaration on Environmental and Development.¹² The Declaration specifically discusses the universal importance of EIA as an environmental decision-making tool, remarking that EIA, “as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.”¹³ EIA is emerging as customary international law.¹⁴

It is important to note that there are critical legal distinctions between NEPA, SEQRA, and the myriad other EIA laws and regulations.¹⁵ For example, SEQRA’s jurisdiction over state agency action is broader than NEPA’s jurisdiction upon federal agencies.¹⁶ In addition, SEQRA requires further approval to satisfy the statute than NEPA.¹⁷ Such comparative analysis is beyond the focus of this article and is not described in substantial detail. Again, for the limited purposes of this Article, it is acceptable to discuss EIA as a generic term. All EIA laws and regulations share the overarching goal of encouraging government agencies to “stop, look and listen” to the environmental impacts of an action, approval or policy, and to consider the integration of environmental stewardship with their own development goals.¹⁸

Based upon the framework first codified in NEPA, EIA is a generic term that encompasses a wide spectrum of national and regional laws. These laws mandate a similar pattern of informed governmental decision-making for specific policies, approvals, or infrastructure projects. EIA is

12. The U.N. Conference on Environment and Development, June 3–14, 1992, *Report of the United Nations Conference on Environment and Development*, ¶ 17, U.N. Doc. A/CONF.151/26 (Aug. 12, 1992).

13. *Id.* The importance of “shall” in the construction implies an affirmative duty on behalf of the Declaration’s participants, although the Declaration is not a legally binding treaty.

14. Julie A. Lemmer, *Cleaning up Development: EIA in Two of the World’s Largest and Most Rapidly Developing Countries*, 19 GEO. INT’L ENVTL. L. REV. 275, 276 (2007); see also Erika L. Priess, *The International Obligation to Conduct an Environmental Impact Assessment: The ICJ Case Concerning the Gabčíkovo-Nagymaros Project*, 7 N.Y.U. ENVTL. L.J. 307, 308 n.6 (1999).

It is becoming a norm of customary international law that nations should engage in effective EIA before taking action that could adversely affect either shared natural resources, another country’s environment, or the Earth’s commons. EIA is the means of assuring that no state acts so as to harm the environment of another state: a prohibition that exists for all states under international law, as embodied in Principle 21 of the United Nations Stockholm Declaration on the Human Environment.

Robinson, *supra* note 11, at 602.

15. GERRARD ET AL., ENVIRONMENTAL IMPACT REVIEW IN NEW YORK §§ 5.01–5.23, 6.02 (2007).

16. *Id.* §§ 5.01–5.23.

17. *Id.* § 5.01.

18. *Id.*

codified in the United States at both the federal level, as NEPA, and the state level. Over twenty-eight states have so-called “little NEPAs” imposed upon state agencies.¹⁹

Additionally, the utility of EIA is reaching the international community as well. The primary international models for management of climate change, namely the Kyoto Protocol and United Nations Framework Convention on Climate Change, are still in formulation. These models are in jeopardy of failure as certain developed and developing states have not fully assented to the treaty, and participant states may not meet benchmark emissions goals.²⁰ Alternative models for coping with climate change, such as EIA, provide valuable secondary tools that immediately advance the issue and work toward establishment of a primary international mechanism. Important international institutions, including the World Bank, mandate EIA for specific funded projects. In addition to the United States, over 100 nations have unilaterally adopted EIA. Although beyond the focus of this Article, EIA is well on its way to achieving the status of customary international law.²¹

Although the precise application varies somewhat depending upon the jurisdiction, EIA applies to major government actions, such as the funding of an infrastructure project, adoption of an administrative rule or policy, or discretionary approval of a private development project.²² EIA generally requires agencies to first identify and study a wide variety of ecological and social impacts from proposed actions. Then agencies evaluate multiple alternative actions, and, to varying degrees of effectiveness, finalize an alternative that balances the agency’s initial goals with environmental

19. Nicholas A. Robinson, *SEQRA's Siblings: Precedents from Little NEPAs in the Sister States*, 46 ALA. L. REV. 1155, 1156–57 (1982).

20. Catherine Brahic, *Carbon Emissions Rising Faster than Ever*, NEW SCIENTIST.COM, Nov. 10, 2006, <http://www.newscientist.com/article/dn10507-carbon-emissions-rising-faster-than-ever.html>.

21. ECON. & TRADE BRANCH, U.N. ENV'T PROGRAMME [UNEP], ENVIRONMENTAL IMPACT ASSESSMENT TRAINING RESOURCE MANUAL (2nd ed. 2002), available at http://www.unep.ch/etu/publications/EIAMan_2edition_toc.htm; see also Lemmer, *supra* note 14, at 279 (“EIA is increasingly considered to be a general principle of international law.”). In addition, the Lemmer notes that:

The existence of the many treaties and other soft law instruments requiring EIA, as well as the number of countries adopting their own domestic EIA regulations, illustrates the fact that the international community has accepted the importance of assessing environmental impacts with a view to reducing and mitigating environmentally harmful aspects of development. Acceptance of the principle is the first step. Successful implementation, however, has proven to be a bigger challenge.

Lemmer, *supra* note 14, at 281.

22. ECON. & TRADE BRANCH, *supra* note 21, at 108.

stewardship.²³ While EIA may address environmental issues in a rote fashion long after decision-makers have reached consensus, it also holds the promise as a creative means of integrating conflicting public goals.²⁴ An EIA's success, or failure, as a means to advance environmental goals is often rooted in the method and sincerity of its application. The outcome of an EIA project is often determined by the questions investigated during the study process.

EIA has traditionally been used to address more obvious and localized ecological impacts. In practice, EIA has had an increasing tendency to operate on autopilot, producing voluminous amounts of technical data, but often not taking advantage of the process as an opportunity for creative decision-making. This practice has led to the mistaken presumption that EIA is unable to tackle the complex challenges of climate change. Climate change is a nontraditional environmental topic demonstrated by immense volumes of cumulative contribution of pollutant gasses, but few, if any, major contributing sources responsible for a distinctive degree of environmental harm divisible from other sources.²⁵

EIA projects also evaluate, and sometimes implement, means of mitigating or minimizing significant environmental effects.²⁶ Because of the vast cumulative nature of emissions contributions, it is difficult to quantify with reasonable precision a "significant" amount of greenhouse gas emissions. Yet defining "significant" is critical to the application of EIA to climate change. The overwhelming global scale of climate change, which also lacks localized direct impacts,²⁷ permits no easy scientific delineation between a significant and an insignificant increase in GHG emissions. The only factor by which significance is judged is the aggregate rate of increase in emissions. Using a small rate of increase in GHG emissions as a benchmark permits minimal increases and also ensures that the cumulative impact of infrastructure and development projects will not substantially interfere with other government policies to significantly reduce GHG emissions.

The use of EIA as a means of integrating climate change planning into project-level decision-making will not be considered a primary means to

23. *See id.* at 105 (discussing the two objectives of an EIA, which are to "inform the process of decision-making" and "promote sustainable development").

24. James T.B. Tripp & Nathan G. Alley, *Streamlining NEPA's Environmental Review Process: Suggestions for Agency Reform*, 12 N.Y.U. ENVTL. L.J. 74, 85–86 (2003).

25. *Id.*

26. ECON. & TRADE BRANCH, *supra* note 21, at 105.

27. Michael Weisslitz, *Rethinking the Equitable Principle of Common but Differentiated Responsibility: Differential Versus Absolute Norms of Compliance and Contribution in the Global Climate Change Context*, 13 COLO. J. INT'L ENVTL. L. & POL'Y 473, 474–75, 490–91 (2002).

manage global climate change. Climate change strategies must not only ensure that future projects do not increase GHG emissions, but must also tackle existing emissions levels. EIA is not intended and could not be used as a comprehensive regulatory or market strategy. Yet as a secondary path, this method provides many compelling advantages. EIA is already a unilateral global custom; it needs no lengthy conferences and no time-consuming treaties.²⁸ Nor does it require the debate, creativity, political diplomacy, or technical study needed to bring about a novel global solution.

Rather, this application can be immediately and effectively brought into force using existing laws that have been well seasoned by litigation and decades of practice. EIA works to familiarize decision-makers and private interests with the practical, local decisions that will help to implement a multifaceted global approach to climate change. The use of EIA to address climate change compliments a wide range of existing or future regulatory schemes specifically addressing climate change. Moreover, the inherent creativity and deference provided to government agencies in carrying out EIA allows EIA to become a laboratory for novel approaches to integrate climate change into decision-making.

The power of EIAs to implement environmental policy is grossly underestimated. EIA laws are modeled upon NEPA's "hard look" standard, balanced decision-making, and provide the opportunity to creatively integrate lofty environmental goals into a specific level of decision-making and design.²⁹ As climate change creeps outwards from the staid halls of diplomacy and into the daily lexicon of civil society, designers, and low-level bureaucrats, EIA may prove particularly effective in linking global goals with municipal action.

II. OVERVIEW OF CURRENT ENVIRONMENTAL IMPACT ASSESSMENT LAWS AND PRACTICE

EIA is a model process for environmental decision-making. Broadly speaking, EIA applies directly to government agency action, such as the decision to construct an interstate highway or other infrastructure. In addition, EIA applies to private projects or policies in which a government agency has a sufficient threshold degree of discretionary involvement, such as the granting of a permit to construct over wetlands.³⁰ The precise

28. Preiss, *supra* note 14, at 308.

29. See ECON. & TRADE BRANCH, *supra* note 21, at 108 (discussing international adoption of the EIA process after its implementation in NEPA).

30. *Id.* at 105.

threshold for EIA varies upon the relevant statute and is often a subject of litigation. EIA may also apply to the analysis of generic actions or government policies. Although rarely used, such an application promises to minimize the repetition of later conflicts.

Once it has been decided that EIA applies to a particular action or undertaking, the first step is often a basic “environmental assessment,” which provides a basic screening of numerous study categories to determine if the project would potentially result in a significant environmental impact.³¹ These study categories vary depending upon the project, but most often include archaeology, historic buildings or landscapes, economic impact, ecological categories, as well as visual or audible impacts.³² Once the potential for a significant impact is identified, the EIA process will usually move forward toward the compilation of an Environmental Impact Statement (EIS). The EIS is usually more comprehensive than the baseline “environmental assessment” and often includes a greater degree of public participation.³³

The first step of an EIS is “scoping,” in which an agency identifies issues that should be addressed in the assessment.³⁴ After thorough studies are complete, relevant information is summarized into a Draft Environmental Impact Statement (DEIS), which examines significant impacts of the proposed action within each study category, as well as a reasonable variety of alternatives to the proposed action, including the “no build” alternative, which compares the baseline.³⁵ After comment and response, the agency then issues a Final Environmental Impact Statement (FEIS), which includes a decision on a preferred action. This decision will typically include a discussion of planned mitigation items, which help offset significant impacts, as well as a justification of the final alternative.³⁶ It is in the alternatives analysis and in particular the mitigation planning that an agency can outline a creative solution that balances development goals and environmental protection.³⁷ Although underutilized, agencies may also elect to develop a “generic” or programmatic EIS, which would cover impacts typically associated with a long-term policy or building

31. *See id.* at 191–200 (outlining methods for screening proposed projects to determine the need for a full EIA).

32. *Id.* at 256.

33. *Id.* at 191–200.

34. *Id.* at 227.

35. *Id.*

36. *Id.*

37. MICHAEL GERRARD ET AL., *supra* note 15, §§ 6.01–6.05.

campaign.³⁸ These actions can then be “tiered” with streamlined, project-specific analysis.³⁹

The EIS project can be complex and resource intensive. However, it has played a key role in slowly shifting public agencies away from the “decide, design, and defend” model of expert-oriented planning.⁴⁰ One means of escaping the intensive EIS process is the increasingly common use of conditional environmental assessments, under which an agency modifies or mitigates actions earlier in the process, thus avoiding potential significant impacts.⁴¹ While deservedly criticized for evading the participatory formalities, scrutiny, and rigors of the EIS process, conditional assessments may permit for an earlier integration of environmental planning and agency decision-making.⁴² EIA is most often utilized on a site-specific or project-by-project basis, in which impacts are often easily quantifiable or discretely defined within a narrow geographic area. Less readily apparent—but by no means less important or nonexistent—is the ability of EIA to address the seemingly complex topic of climate change.

III. THE CURRENT STATE OF CLIMATE CHANGE

It is beyond credible scientific debate that climate change, at some rate, is occurring primarily as a result of green-house gas (GHG) emissions.⁴³ It

38. See ECON. & TRADE BRANCH, *supra* note 21, at 493–524 (a generic or programmatic EIS may also be referred to as a Strategic Environmental Assessment).

39. *Id.*

40. See Leroy Paddock, *Environmental Accountability and Public Involvement*, PACE ENVTL. L. REV. 243, 251–52 (2004).

[T]he growth in government agency responsibility beginning in the early twentieth century led federal and state governments to employ professional managers who became experts in the mission of their agencies. These expert managers were delegated the responsibility for making decisions on behalf of the government and the people. . . . The rapid expansion of government during the New Deal era significantly increased the role of the executive branch of government and its expert managers. . . . Among other programs designed to make government more accountable to the public, Congress passed the Freedom of Information Act in 1966 . . . providing for the preparation and public view of environmental impact statements. Although there are a number of legal requirements related to public involvement in administrative matters, the procedures for public involvement in agency decision-making still rely on the basic APA public participation requirements enacted some 57 years ago. . . notification only a few weeks before an agency intends to issue a permit.

Id.

41. Bradley C. Karkkainen, *Whither NEPA?*, 12 N.Y.U. ENVTL. L.J. 333, 348 (2004).

42. *Id.*

43. See UNEP & World Meteorological Org. [WMO], Intergovernmental Panel on Climate Change [IPCC], *IPCC Third Assessment Report, Climate Change 2001: The Scientific Basis (Summary*

is unlikely to bring about an immediate and single cataclysmic event and is far less obvious to the general public than the visible impacts, such as polluted rivers and hanging smog that spurred NEPA's creation.⁴⁴ However, its transformative impact upon ecosystems is felt most urgently in the growing intensity of natural hazards. A sea level rise of only a few centimeters over several generations may escape immediate perception, but its related impacts will most certainly affect both the natural ecosystem and those humans who closely depend upon it.

The most important, but less direct, results of climate change will be felt in four primary areas. First, the productivity of natural and managed biological resources and ecosystems—forest, agricultural and marine—will be affected. Second, climate change will also impact the emergence and distribution of infectious diseases in plants, animals, and humans. Third, extreme weather is expected to raise the costs of travel, trade, tourism, and infrastructure—especially in developing nations. Finally, the character and intensity of ambient air pollution and synergies with climate change will be altered (for example, increased heatwaves).⁴⁵

The ultimate impact of climate change will be borne by both human populations and natural ecosystems. There is general scientific agreement on certain aspects of climate change, including at least a meaningful causal link with human activity and on the long-term catastrophic impact.⁴⁶ Less certain is the uniform understanding of the exact timing of long-term impacts, with potential impacts forecasted within a general finite range of outcomes.⁴⁷ As with any natural science, global ecology rests upon a settled discipline and continues to increase its knowledge base. This area is a targeted priority for research, development, and funding, therefore increasing the frequency of important conclusions and innovations.

for *Policymakers*) 9 (2001), available at <http://www.ipcc.ch/pdf/climate-changes-2001/scientific-basis/scientific-spm-en.pdf> [hereinafter IPCC, *The Scientific Basis*] (expressing high confidence of link between human activities and climate change); see also UNEP & WMO, IPCC, *IPCC Fourth Assessment Report, Climate Change 2007: The Physical Science Basis (Summary for Policymakers)* (Susan Solomon et al. eds., 2007), available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf> (contribution of Working Group I) (addressing new research findings compiled over the six years since the previous IPCC assessment report).

44. See generally IPCC, *The Scientific Basis*, *supra* note 43. (outlining long term consequences of climate change).

45. CTR. FOR HEALTH & THE GLOBAL ENV'T, HARV. MED. SCH., *CLIMATE CHANGE FUTURES: HEALTH, ECOLOGICAL AND ECONOMIC DIMENSIONS* 6 (2005), available at http://www.climatechange-futures.org/pdf/CCF_Report_Final_10.27.pdf.

46. *Id.* at 16–18.

47. *Id.* at 9–10, 112–13.

A. International Initiatives: United Nations Framework Convention on Climate Change

Although primarily centered at the international or multilateral level, there are a variety of current mechanisms at all levels of government which address climate change issues. The most familiar of these tools is the Kyoto Protocol. Based upon the overarching United Nations Framework Convention on Climate Change (UNFCCC) Rio agreement, the Kyoto Protocol set forth specific limits for so-called Annex I nations, developed nations which used GHG emissions to fuel their historical industrialization.⁴⁸ Annex I nations must achieve an average of 5% reduction below 1990 levels by the year 2012.⁴⁹ Additionally, Annex II nations are a smaller subset of these industrialized nations, which must assist in paying developing nations to help meet GHG emissions targets.⁵⁰ Nations which miss this target may be subject to further reductions in future agreements.

National goals for non-Annex I nations, which are primarily developing nations and include both India and China, are not specified in the Kyoto agreement. Such nations may be required to limit GHG emissions in future agreements and must currently report GHG inventories each year.⁵¹ Annex I nations may achieve their goals through national strategies, which include international tradable credits (from other projects which are performing below the targets) and the purchase of offsetting mitigation projects (including forestry-based carbon sequestration) in non-Annex I nations.⁵² The United States was a signatory to the Rio Declaration and the UNFCCC; however, the Senate has since repeatedly refused to ratify the Kyoto treaty.

The United States, Australia, China, India, Japan, and South Korea are all member nations in the Asia-Pacific Partnership on Clean Development and Climate, which encourages technological solutions to reduce GHG emissions.⁵³ The Partnership does not bind members to any specific emissions reduction targets⁵⁴ and has been criticized as an ineffectual

48. Laura H. Kosloff, *Climate Change and Sustainable Development: Linking Climate Change Mitigation with Sustainable Economic Development: A Status Report*, 3 WIDENER L. SYMP. J. 351, 354, 362 (1998).

49. *Id.* at 372–74.

50. *Id.*

51. *Id.*

52. *See id.* at 372 (discussing various carbon offset projects).

53. Asia-Pacific Partnership on Clean Dev. & Climate, <http://www.asiapacificpartnership.org> (last visited Apr. 30, 2008).

54. *Id.*

response to climate change.⁵⁵ However, a number of Annex I nations are struggling to meet their targets, and the ultimate success of the Kyoto methodology is far from certain, regardless of the United States' lack of participation in Annex I.⁵⁶ Recent discussions in Bali, Indonesia, at the twelfth meeting of the UNFCCC parties in December 2007 provided a roadmap to future discussions in 2009 in Copenhagen for a post-Kyoto agreement. While difficult political barriers remain regarding the definition of emissions reduction targets for both developing and developed nations, there is relatively little global discussion over specific means to implement and achieve such reduction targets.

B. Domestic Possibilities for Regulating CO₂

Regardless of the slow rate of global discussions, the issue of climate change is one of rapidly increasing national political attention. Recently decided at the national level was *Massachusetts v. EPA*, in which numerous states and cities successfully sued the federal Environmental Protection Agency (EPA), claiming that the agency is required to designate CO₂ as a criteria pollutant under the Clean Air Act.⁵⁷ Despite the Supreme Court's five to four holding that CO₂ could constitute a criteria pollutant for the purposes of the Clean Air Act,⁵⁸ no clear direction to date has been provided by the EPA regarding the regulation of greenhouse gases under the Act. Notably the majority opinion in *Massachusetts* provided a general legal recognition of climate change.⁵⁹ While it encouraged regulation of GHGs under the Clean Air Act, the Court provided validation of climate change impacts as a legitimate public threat, even though some of its scientific complexities were not yet fully understood.

The regulation of GHGs under the Clean Air Act would be compatible with the consideration of climate change issues in EIA documents. While potentially overlapping in discrete areas, such as power plant construction, NEPA has a much broader potential jurisdictional reach.⁶⁰ Furthermore, in

55. See Amanda Griscom Little, *Pact or Fiction? New Asia-Pacific Climate Pact Is Long on PR, Short on Substance*, GRIST, Aug. 4, 2005, <http://www.grist.org/news/muck/2005/08/04/little-pact/index.html> (quoting various officials about the pact, including David Sandlow of the Brookings Institution and a former State Department official) ("It's a great lineup of countries; I just wish they were doing something serious . . . Basically these kind of technology-cooperation partnerships have been around for years. This seems to be nothing but repackaging of existing technology partnerships tied up in a bow.").

56. Brahic, *supra* note 20.

57. *Massachusetts v. Env'tl. Prot. Agency*, 127 S. Ct. 1438, 1449 (2007).

58. *Id.*

59. *Id.* at 1443.

60. See 42 U.S.C. §§ 7411 (d)(1), (2) (2000); see also *id.* §§ 4331, 4332.

the industry-specific areas where it does regulate, the “command and control” outcome-oriented structure of the Clean Air Act supersedes the more generalized decision-making approach of NEPA.⁶¹

Although it repudiated the Kyoto Protocol, the George W. Bush Administration concedes that increasing CO₂ levels are the most important cause of climate change. During a 2004 report to Congress, the administration acknowledged that increasing CO₂ emissions from human sources is the most likely explanation for global warming trends.⁶² In addition, the administration predicts that the nation’s GHG emissions, if current policies stay in place, will rise 43% between 2000 and 2020.⁶³ This serious policy issue has caught the attention of numerous states within the United States.

Two important state government initiatives are attempting to establish GHG regulations. The Regional Greenhouse Gas Initiative is an agreement between seven northeastern states, which establishes CO₂ emissions limits for power plants and features a tradable credit and offset program similar to the Kyoto Protocol.⁶⁴ In addition, California has committed itself to attaining GHG emissions goals similar to those of the Kyoto Protocol.⁶⁵ Pending legal action at the state level is further defining California’s state initiative, particularly in relation to the California Environmental Quality Review Act (CEQRA), the state-level EIA law. Finally, over 168 mayors, including those from New York City and San Francisco, have committed to ensuring that municipal operations meet Kyoto targets.⁶⁶ Recent attention on climate change issues is not limited to the political arena; popular mass media have also provided increased attention to the issues. While considerable apathy and misinformation persists, the topic is often discussed as reality and is generally within the public lexicon.

61. *Id.*

62. U.S. GLOBAL CHANGE RESEARCH PROGRAM & THE SUBCOMMITTEE ON GLOBAL CHANGE RESEARCH, *OUR CHANGING PLANET: THE U.S. CLIMATE CHANGE SCIENCE PROGRAM FOR FISCAL YEARS 2004 AND 2005*, at 4 (2004), available at <http://www.usgcrp.gov/usgcrp/Library/ocp2004-5/ocp2004-5.pdf>.

63. Bradford C. Mank, *Standing and Global Warming: Is Injury to All Injury to None?*, ENVTL. L. 1, 15 (2005).

64. Randall S. Abate, *Kyoto or Not, Here We Come: The Promise and Perils of the Piecemeal Approach to Climate Change Regulation in the United States*, 15 CORNELL J.L. & PUB. POL’Y 369, 374 (2006).

65. *Id.*

66. *Id.*

IV. ENVIRONMENTAL REVIEW IN DEPTH

EIA is intended to be utilized as a decision-making tool. The process works best when an agency chooses to actively engage the impact assessment areas and work with stakeholders to shape a project. An understanding of the boundaries and potential of EIA as a decision-making tool is necessary in detailing how the EIA process may incorporate climate change issues. EIA affords government actors (and private applicants) considerable flexibility as a potential problem-solving opportunity, before construction or program implementation. A primary structural challenge underlying EIA (and in particular its application to the issue of climate change) is in the sometimes ambiguous process of distinguishing “significant” and insignificant environmental impacts, as well as the challenge in analyzing cumulative environmental impacts, particularly in which multiple and external sources combine to cause an impact.

A. EIA as a Flexible Decision-Making Tool

While the EIA process may work relatively well as a means of identifying and disclosing scientific data, it is often lacking in its capacity as a decision-making tool.⁶⁷ In practice, EIA is often delayed until long after decisions have been made. EIA documents have grown in their length and scientific complexity, but not necessarily in meaning or relevance.

Commentators have written extensively regarding the factors for this insufficiency, including a lingering concept of an expert-based top-down administrative structure, the growing cost and burden of completing an EIS, and that many of the general goals of EIA have already entered the pre-application project design stage.⁶⁸ EIA often has a difficult time tackling non-ecological issues outside of natural science. According to Dr. Lynton Caldwell, one of NEPA’s principle drafters:

Persons hired to prepare NEPA analysis are often unprepared professionally to thoughtfully analyze the social and economic effects of environmental impacts. As a result, rather than an integration of these three critical components, a reader is subjected to a data dump of information about such things as the number of

67. Bradley C. Karkkainen, *Toward a Smarter NEPA: Monitoring and Managing Government’s Environmental Performance*, 102 COLUM. L. REV. 903, 904 (2002).

68. *Id.* at 904.

manufacturing plants, bridges, cemeteries, and schools in a given area.⁶⁹

There is often a gap between the dry, technical, and overwhelming approach of EIA analysis (Caldwell's "data dump"), and the impassioned public opinions that often accompany a project. However, increased public participation and professional training can remedy the legal shortcomings. Such deficiencies should be no excuse for overlooking the potential benefits of EIA as a problem-solving tool.⁷⁰ While many commentators have urged for more effective and responsive EIA practice, the need for improved implementation does not prevent the application of the EIA process to climate change issues.

Primarily due to defects in the oversight and administration of the EIA process, agency decisions regarding projects and sufficiency of EIA decisions are often litigated. Generally agencies receive considerable judicial deference regarding the substantive sufficiency of their decisions under EIA; more judicial scrutiny is accorded to alleged violations of the statute's administrative procedure.⁷¹ Consequently, agencies have considerable flexibility in how they describe and analyze impacts.⁷² In this regard, EIA differs considerably from a stricter "command and control" method of environmental law. The application of EIA to climate change issues may be an advantage for agencies as their stewardship decisions are less likely to be overturned.

This deference and freedom to custom-tailor solutions will produce fewer challenges from agencies and development interests. This deference allows the regulated community an opportunity to design its own stewardship solutions in which participation is likely to result in more active adoption or "ownership" of custom-tailored climate change solutions. Furthermore, EIA can serve as a laboratory for a wide variety of unproven climate change strategies. While the flexibility and deference cause the EIA process to be viewed by skeptical environmentalists as a "paper tiger;" this same elasticity provides a means of "buy in" which is critical to those entities ultimately entrusted with implementing climate change strategies. Though other strict regulatory avenues of climate change

69. Dinah Bear, *Some Modest Suggestions for Improving Implementation of the National Environmental Policy Act*, 43 NAT. RES. J. 931, 955 (2003). Dinah Bear is the long-time General Counsel to the Federal Council on Environmental Quality.

70. Karkkainen, *supra* note 67, at 904-05.

71. *Id.* at 903.

72. *Id.* at 908.

also may be pursued, EIA offers a feasible opportunity to bridge local action and international goals on a unilateral and project-specific basis.

Finally, the growing complexity of environmental science has created a quandary for agencies: exactly what is the best means to ensure a “hard look” at environmental impacts? Ultimately, an agency is provided great deference in this determination, but such deference is of little consolation in trying to decipher the myriad of potential EIA study categories. Accordingly, some government entities that oversee respective EIAs have issued various forms of technical guidance.⁷³ This guidance often describes means in considerable detail by which to conduct inventories and ways to define the threshold of significant impact.⁷⁴ However, generic guidance is increasingly used and abused by agencies and courts. The guidance is only intended to broadly describe recommendations, and the ultimate decision of environmental impact description belongs to the agency. Too often, rote compliance with generic guidance has become the *de facto* benchmark of avoiding significant impacts, and technical guidance has been used by courts and attorneys as a substitute for the law itself.⁷⁵ This interpretation is generally incorrect; significance of an impact is an inherent characteristic relative to the particular situation and project, and is not an arbitrary delineation by an external source.⁷⁶ This confusion over EIA’s mandate as a “stewardship” statute, rather than a compliance statute, is important to bear in mind in evaluating how to best tackle climate change issues on a project-specific basis.

B. Pinning the Tail: The Elusive Definition of “Significance”

In defining the “significance” of an environmental impact, EIA is often more reflective of political realities than of a precise scientific threshold. Notably, the process fails to put forth a “magical formula or set of fixed objective standards for determining the environmental significance of an action.”⁷⁷ One of the few EIA cases at the state level, which attempts to define the “significance” threshold, noted that significant impacts occur “whenever more than a moderate effect on the quality of the environment is

73. *Id.* at 916.

74. *Id.*

75. *Id.* at 917.

76. *Id.*

77. *Spitzer v. Farrell*, 294 A.D.2d 257, 258 (N.Y. Sup. Ct. 2002) (mem.), *rev’d on other grounds*, 100 N.Y.2d 186 (2003) (quoting *GERRARD ET AL.*, *supra* note 15, § 2.06, at 2-110 (Instead of automatically meeting a predetermined threshold, “the agency must identify and thoroughly analyze the relevant areas of environmental concern (6 NYCRR 617.7 [c] [1]) and determine if the proposed action may have a significant adverse impact on those areas.”)).

a reasonable probability.”⁷⁸ As courts have generally been either unwilling or unable to draw a line in the regulatory sand, “significance” is a term of art set by project decision-makers. One commentator noted that the subjective determination of environmental “significance” is best summarized in the following famous judicial quote from Supreme Court Justice Potter Stewart regarding the definition of pornography: “I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description; and perhaps I could never succeed in intelligibly doing so. But I know it when I see it”⁷⁹

However subjective, the administrative definition of “significance” should not be “glossed over” or buried in semantics at the expense of the basic purpose of EIA to inform the public and agencies of the environmental footprint of their decisions.⁸⁰ While the procedural steps that lead to the finding of significance are formalized, the ultimate decision (the determination of whether a particular action may have a significant effect on the environment) has subjective elements and is within the lead agency’s discretion, subject to judicial review. The determination of significance can have a profound effect on whether the action under consideration will ultimately be implemented. While the exercise of this subjective authority often calls for examination of engineering or scientific data, the latitude accorded to decision-makers in reaching the determination is considerable. As the New York Court of Appeals has recognized: “[T]he question of significance is not arrived at solely by gathering data and making calculations; instead, it is ultimately a policy decision, governed by the rule of reasonableness, that the particular facts and circumstances of a project do or do not call for preparation of a full impact statement.”⁸¹ Accordingly, the determination of a “significant” environmental impact of GHG emissions is not a matter of exact quantification, but represents a well-reasoned policy judgment.

The widespread impacts of climate change and the massive volume of GHG emissions on a global scale both prevent the determination of a precise data calculation of “significance.” However, this does not prevent the application of climate change to the EIA process. From a purely mathematical standpoint, it is a “reasonable probability” that some degree of climate change would result in increased GHG emissions, but far less

78. *Norway Hill Pres. & Prot. Ass’n v. King County Council*, 87 Wash.2d 267, 278 (1976).

79. GERRARD ET AL., *supra* note 15, § 2.06[2] (quoting *Jacobellis v. State of Ohio*, 378 U.S. 184, 197 (1964) (Stewart, J., concurring)).

80. *Sierra Club v. U.S. Army Corps of Engr’s*, 772 F.2d 1043, 1053 (2d Cir. 1985).

81. GERRARD ET AL., *supra* note 15, § 3.05 (quoting *Coca-Cola Bottling Co. v. Bd. of Estimate of the City of New York*, 532 N.E.2d 1261 (N.Y. 1988)).

certain that a “more than moderate” impact would be realized solely from the presence of particular project or policy. Even substantial GHG increases relative to single projects would result in climate or sea level impacts imperceptible to all but the most advanced of scientific measurements.

C. Climate Change as a Cumulative Issue Under EIA

The determination of a “significant” environmental impact must also consider the incumbent duty within EIA to evaluate cumulative impacts. Such impacts may be “individually minor” but, when viewed in totality, “collectively significant.”⁸² Although EIA does generally avoid consideration of impacts too attenuated to be reasonably linked to the particular project in question, it also requires consideration of cumulative impacts.⁸³ The case law concerning cumulative impacts indicates that these “analyses are appropriately concerned with impacts that are sufficiently ‘likely’ to occur and not with the speculation of any impact that can be conceived of or imagined.”⁸⁴ For example, a global sense of fear may be too speculative or attenuated. However, science does not indicate that the generalized physical and economic impacts climate change are not merely expected, but are indeed “likely” to occur as a cumulative result of GHG emissions. In many cases, the quantification of precise impacts of climate change may be impossible, either because of a lack of data procedure or because specific causation is inseparable from vast cumulative emissions contributions.

When the cumulative impact of a particular undertaking or project exceeds the ability of sensible quantification, EIA is not necessarily exhausted. Rather, guidance and prudence indicate that qualitative analysis may be applied. “Even when the analyst cannot quantify cumulative effects, a useful comparison of relative effects can enable a decision-maker to choose among the alternatives.”⁸⁵

82. 40 C.F.R. § 1508.7 (2006); *see also* Fritiofson v. Alexander, 772 F.2d 1225, 1242–43 (5th Cir. 1985) (illustrating the importance of cumulative-impacts analysis where EA is the only environmental review taken).

83. N.Y. COMP. CODES R. & REGS. tit. 6, §§ 617.11(b), 617.14(f)(3) (2006); *see also* 40 C.F.R. § 1508.27(b)(7) (requiring consideration of the cumulative significance of an action for the purpose of a NEPA analysis).

84. FED. HIGHWAY ADMIN., QUESTIONS AND ANSWERS REGARDING THE CONSIDERATION OF INDIRECT AND CUMULATIVE IMPACTS IN THE NEPA PROCESS, [http://nepa.fhwa.dot.gov/ReNEPA/ReNepa.nsf/All+Documents/8AE2449A6338CAB185256CC50047CC24/\\$FILE/q&aattachment.doc](http://nepa.fhwa.dot.gov/ReNEPA/ReNepa.nsf/All+Documents/8AE2449A6338CAB185256CC50047CC24/$FILE/q&aattachment.doc) (last visited Apr. 30, 2008).

85. COUNCIL ON ENVTL. QUALITY, CONSIDERING CUMULATIVE EFFECTS UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT 41 (1997), *available at* <http://ceq.eh.doe.gov/Nepa/ccnepa/>

As a means of distinguishing the severity of cumulative actions, one may rely upon NEPA's regulatory guidance document, which states that the intensity of an impact may be judged by factors such as duration, frequency, and geographic extent, all of which lend themselves to a consideration of climate change as a significant cumulative effect. Notably, EIA does not always mandate the implementation of precise mitigation alternatives, although it does generally require identification and analytical discussion of such alternatives. While EIA frequently concludes with some degree of mitigation, it is entirely conceivable that a cumulative impact could be identified but not mitigated, were such mitigation deemed infeasible.⁸⁶

Under the existing EIA framework, it is reasonable to discuss climate change on a cumulative basis. The underlying intent and policy of EIA also should be analyzed in light of a cumulative analysis of climate change. If EIA practitioners and agency decision-makers are unwilling to identify or disclose the role of their projects within a complex environmental problem, then these statutes have lost much of the luster and social worth once assigned to them. Actions that are individually minor have led to a wide variety of catastrophic scenarios (genocide not the least among them) which could have been prevented had society chosen to recognize that such actions were "collectively significant." However, if we trust a leaderless chorus, we run the social risk of implicitly encouraging the very sort of blameless catastrophe that has repeatedly marked the last century.

That the cumulative impacts of climate change extend beyond domestic territories does not necessarily exempt EIA. NEPA's section 101(f) recognizes that, in addition to domestic environmental impacts, there is a

worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, [the government may] lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment.⁸⁷

exec.pdf.

86. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989); *see also* 40 C.F.R. §§ 1502.14(f), .16(e)–(h), 1505.2(c), 1508.25(b)(3) (2007) (noting that the statute does not require adoption of mitigation measures, only an explanation as to why none were adopted).

87. 42 U.S.C. § 4332(f) (2000).

While multiple judicial decisions have generally not supported the extraterritorial application of EIA,⁸⁸ the global nature of climate change is not divisible from acute impacts (ecological and otherwise) that would echo within domestic borders. Therefore, climate change is not an exclusively extraterritorial application of EIA as much as it is an acknowledgement of domestic impacts linked to a shared and larger global challenge. Certainly EIA may analyze the impacts of climate change within a discrete area under domestic jurisdiction (such as the coastal area or shoreline of a domestic state). If climate change also has extraterritorial impacts, then that does not prevent an analysis of more discrete domestic impacts.

1. EIA, Causation & Climate Change

EIA has always been a hotspot of controversy and litigation, as it is implanted at the center of the conflict between its own environmental values and the goals of development. These goals are most often espoused by those agencies charged with carrying out its decision-making process. Judge Harold Leventhal, author of the decision in *Natural Resources Defense Council v. Morton*, noted in 1974 that this conflict is both intentional and expected:

It is the premise of NEPA that environmental matters are likely to be of secondary concern to agencies whose primary missions are nonenvironmental. NEPA looks toward having environmental factors play a central role in the decisions of such agencies. This goal does not mean environmental considerations are to be more important than every nonenvironmental agency mission; questions of housing, energy, and inflation might have equal claim or even higher priority. But it does mean that environmental factors must serve as significant inputs to governmental policy and must be weighed heavily in the decisional balance. It is the function of review under NEPA to ensure that this purpose is served.⁸⁹

Therefore one can rationally extend Judge Leventhal's 1974 argument to the incorporation of climate change within EIA. Under this regulatory

88. *Mayaguezanos por la Salud y el Ambiente v. United States*, 198 F.3d 297, 301 n.8 (1st Cir. 1999) (listing cases where courts declined to apply NEPA to extraterritorial actions).

89. See James Allen, Note, *NEPA Alternatives Analysis: The Evolving Exclusion of Remote and Speculative Alternatives*, 25 J. LAND RES. & ENVTL. L. 287, 310 (2005) (quoting Harold Leventhal, *Environmental Decisionmaking and the Role of the Courts*, 122 U. PA. L. REV. 509, 515 (1974)).

scheme, climate change need not outstrip or control other more primary agency development goals. Climate change considerations need not halt the march of development. EIA does not mandate specific “caps” to pollution or any other specific outcome, provided that whatever outcome is produced is one which generally well reasoned and provides for some degree of stewardship consistent with the broad goals of EIA. An agency must, in accordance with Judge Leventhal’s discussion of judicial review, reach a decision which would satisfy a reviewing court that

the decision reached is the product of ‘reasoned discretion’ in light of ‘ascertainable legislative intent.’ ‘The court exercises this aspect of its supervisory role with particular vigilance if it becomes aware, especially from a combination of danger signals, that the agency has not really taken a hard look at the salient problems, and has not genuinely engaged in reasoned decisionmaking.’⁹⁰

EIA alone need not mandate compliance with any particular target or emissions level, as long as the agency in question has provided a reasoned analysis and discussion of relevant impacts. Consistent with the overwhelming judicial treatment of EIA, Judge Leventhal correctly notes that EIA affords the agency relative liberty to design its own flexible solutions, provided that a strict process is followed which affords a “hard look” at environmental impacts.⁹¹ Utilizing this standard of administrative deference mixed with rational analysis, it would be difficult for an agency to deny that an increased rate of GHG emissions is not a “salient” environmental problem, nor that it is unable to conduct a genuine, reasoned analysis of the issue. Climate change has immense challenges for the nations (and people) of the world. Yet “reasoned decision-making” and rational management is well within grasp and can permit at least some degree of management of the GHG emissions relative to population growth and development.

Moreover, causation is an important factor in EIA. Impacts which are too broad, vague, or attenuated often are excluded from the formal decision-making process. For example, the Supreme Court noted that the indirect psychological problems potentially brought about by nuclear power, such as anxiety and fear, were “too remote from the physical environment” to justify its inclusion within EIA analysis.⁹² The Court noted

90. *Id.*

91. *Id.*

92. *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983).

specifically that “some effects that are ‘caused by’ a change in the physical environment in the sense of” ‘but for’ causation, will nonetheless not fall within section 102 because the causal chain is too attenuated.”⁹³

Specifically, the relationship between the environmental effect and the proposed action must have “a reasonably close causal relationship between a change in the physical environment and the effect at issue. This requirement is like the familiar doctrine of proximate cause from tort law.”⁹⁴ In analyzing the relationship between a proposed action and impacts to climate change, a court “must look to the underlying policies or legislative intent in order to draw a manageable line between those causal changes that may make an actor responsible for an effect and those that do not.”⁹⁵ Finally, the Court reiterated that the extent of this causation “must be manageable” and limited to the extent that agencies must be able to complete the goal of ensuring informed decision-making.⁹⁶

The causation element pertaining to the wide-ranging impacts of climate change is problematic unless it is understood within its proper legislative context. Proximate causation would provide an easy loophole in which the ultimate conclusion would be that if “everyone” or every GHG emission causes climate change, then no one project could be pinned with a catastrophic burden. Yet the application of climate change issues within an EIA context need not assign the “but for” impact of global fear entirely to a single action (as the plaintiffs would have in *Metro Edison*), but may instead address a cumulative contribution to a large-scale problem to the extent that climate change informs agency decision-making. Such informed decision-making is practiced by many actors and follows a well-reasoned analytical path. Consideration of climate change is well within the underlying policy and intent of EIA as addressing a broad range of potential environmental categories or cumulative impacts, rather than a specific, enumerated list of criteria pollutants.

2. Making the Case: EIA and Climate Change

EIA has the strong potential to be a useful tool in addressing climate change. As a secondary approach, it ensures that other governmental efforts that address existing GHG emissions will not be unraveled by forthcoming (and inevitable) economic development and population growth. In addition, EIA is a process already familiar to many national

93. *Id.*

94. *Id.*

95. *Id.* at 774 n.7.

96. *Id.* at 776.

governments, and it does not require the lengthy creation of a single global agreement. Finally, rather than creating a top-down approach, EIA allows agencies to custom-tailor solutions based on their own local or situational needs. In so doing, EIA can serve as an important link between international standards and local decisions.

3. Existing Guidance

Merely recognizing the philosophical potential for EIA to serve as a means of incorporating climate change issues does not provide real evidence of the realistic feasibility its application. Instead it is necessary to examine both existing guidance documents and best practices that encourage a more deliberate approach to incorporating climate change issues. Once this approach is taken, it is evident that EIA is not only a valid avenue, but a desirable means by which to balance increasing global development with the growing threat of climate change.

4. The CEQ Draft Guidance Document & Congressional Interest

In 1997, the President's Council on Environmental Quality issued a draft guidance document regarding the incorporation of climate change into NEPA documents.⁹⁷ While the guidance document is largely silent about recommendations for specific analytical processes for this inclusion, it nonetheless provides a philosophical and legal foundation for an EIA process inclusive of climate change. There is little recorded information regarding the motivation or subsequent treatment of climate change issues by federal agencies or private applicants.⁹⁸ This failure to finalize or implement this guidance document underscores the importance of developing specific procedural recommendations, as well as the incorporation of climate change analysis into project-specific EIA documents. Had this issue been pursued with greater fervor, it is less likely that the United States would be lagging behind the global community in regards to climate change planning.

97. Memorandum from Kathleen A. McGinty, Chairman, Council on Env'tl. Quality, to Heads of Federal Agencies, Draft Guidance Regarding Consideration of Global Climatic Change in Environmental Documents Prepared Pursuant to the National Environmental Policy Act (Oct. 8, 1997), available at <http://www.mms.gov/eppd/compliance/reports/ceqmemo.pdf> [hereinafter CEQ, Draft Guidance].

98. The draft guidance was included in at least one federal policy EIS shortly after its issuance. See TETRA TECH, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE CONVEYANCE AND TRANSFER OF CERTAIN LAND TRACTS ADMINISTERED BY THE DEPARTMENT OF ENERGY AND LOCATED AT LOS ALAMOS NATIONAL LABORATORY, LOS ALAMOS AND SANTA FE COUNTIES, NEW MEXICO 17-9 (1999), available at <http://www.eh.doe.gov/nepa/eis/eis0293/Chapters/Chap-17.pdf>.

In the draft guidance document, the CEQ noted first that based upon scientific evidence, in particular the IPCC's scientific conclusions, climate change was a "reasonably foreseeable" impact of GHG emissions and should be considered in NEPA documents.⁹⁹ However, federal agencies were granted a very long leash in determining exactly how this goal would be achieved as "each agency must exercise its own independent judgment and discretion . . . to determine the extent to which it should assess global climate change in its NEPA documents."¹⁰⁰ While this statement could hardly be considered a resounding mandate, it also does not completely excuse a failure to consider the issue and does not circumvent NEPA's most basic goal of encouraging a "hard look" at environmental impacts, even when cumulative and indirect. Rather, the draft guidance document may be viewed as an incomplete statement of responsibility. The ensuing decade has provided the environmental and public affairs communities with more experience in the specifics of climate change planning.

The 1997 draft guidance document noted specifically that climate change should be considered by agencies at two levels:

[T]here are two aspects of global climate change which should be considered for NEPA documents: (1) the potential for federal actions to influence global climate change (e.g. increased emissions or sinks of greenhouse gasses) and (2) the potential for global climate change to affect federal actions (e.g. feasibility of coastal projects in light of projected sea level rise).¹⁰¹

Had CEQ's draft guidance document been implemented, agencies would have had to consider climate change as a true "cross cutting" issue. However, the draft guidance document from CEQ is less than encouraging in its recommendations that climate change only be considered at a broad, programmatic level.

First, CEQ admitted that "clearly, both projects and programs proposed by federal agencies, including permits issued by federal agencies, can cause increased emissions or changes in sinks related to greenhouse gases."¹⁰² Despite this admission, CEQ suggested the following:

99. CEQ, Draft Guidance, *supra* note 97.

100. *Id.*

101. *Id.*

102. *Id.*

[A]nalysis of the impacts of such emissions or sinks at the project level, however, would not provide meaningful information in most instances. Efforts would be better spent in assessing federal programs which may effect emissions or sinks of these gases. This type of approach recognizes that individual projects may increase greenhouse gas emissions by only marginal amounts, but that the cumulative effect of such emission could be more dramatic.¹⁰³

The draft guidance document is not wholly incorrect. Analytical efforts at the programmatic or policy level would always result in a more effective use of resources and would likely result in a more meaningful and sweeping achievement of numerous environmental goals.¹⁰⁴ The challenging area of EIA would be less often repeated on the more emotional local level and agencies could set overarching parameters long before project proponents are heavily vested in the design or pre-approval phase at which EIA is most often carried out.¹⁰⁵ The use of EIA as an effective early planning and policy tool holds true not just for climate change, but for nearly every issue considered under the EIA umbrella. Despite this widespread recognition of

103. *Id.*

104. Matthew C. Porterfield, *Agency Action, Finality and Geographical Nexus: Judicial Review of Agency Compliance with NEPA's Programmatic Environmental Impact Requirement After Lujan v. National Wildlife Federation*, 28 U. RICH. L. REV. 619 (1994). For a variety of reasons enumerated in *Lujan*, it is exceedingly difficult to challenge an agency's failure to prepare a generic or programmatic EIS. In particular, specific commitments are typically made on a project-specific basis, meaning that agencies may delay a finding of "final agency action" until many years after substantive policy decisions have been achieved.

The *Lujan* decision has been interpreted by courts and commentators in a manner that raises three closely related problems for litigants attempting to obtain judicial review of agency compliance with the programmatic EIS requirement. First, and most significantly, *Lujan* has been read to hold that an agency's decision not to prepare a programmatic EIS is unreviewable because programs are too broad in scope to constitute reviewable agency action under section 702 of the APA. Second, even if it is accepted that an agency's decision not to prepare a programmatic EIS constitutes reviewable agency action, *Lujan* has been interpreted to hold that an agency's compliance with NEPA is not "final" for the purposes of section 704 until some specific commitment of resources has been made. Third, *Lujan* has been interpreted as holding that section 702 of the APA requires environmental plaintiffs to demonstrate that they use specific areas of land affected by government action. This requirement makes it difficult for environmental plaintiffs to establish standing to challenge the government's failure to prepare programmatic EISs affecting vast areas. . . . however, each of these arguments is based on a fundamental misconception about the nature of the agency action which is subject to review under NEPA.

Id. at 643.

105. Tripp & Alley, *supra* note 24, at 81–82.

the benefits of EIA as a planning tool, agencies have been generally reluctant to take a hard look at the environmental footprint of their core policies, and, despite the inevitable repetition which results, generally prefer to relegate this consideration at the project level, and often in the very late planning stages.¹⁰⁶

In addition, efforts to litigate the implementation of EIA at the policy level have been generally unsuccessful. As a result, the only meaningful way to address an environmental issue under EIA is at the project level. In addition, increases of GHG emissions, having only a cumulative impact, does not preclude their valid consideration as an environmental impact. In many or most cases, valid data may still be readily obtained at the project level. GHG emissions are frequently quantifiable.¹⁰⁷ CEQ's draft guidance document on climate change is best considered to be an early validation of this application, but also one which was limited at the time of its development by the barely emerging status of climate change planning.

However, CEQ's 1997 draft guidance document was preceded by an earlier recognition of the applicability of EIA to climate change, and may be rooted in earlier CEQ and legislative actions during the twilight of the Reagan Administration. In an appropriations report on CEQ in 1988, the U.S. Senate Committee on Environment and Public Works noted that

[t]he greenhouse effect and stratospheric ozone depletion are two problems of increasing international concern. Committee hearings on these issues revealed the fact that U.S. Government agencies are not adequately assessing Federal actions and policies that may contribute to these problems. NEPA provides both the legal basis and procedural framework for assessing the potential effects of Federal activities on the global climate and ozone layer which may contribute to increases in atmospheric concentrations of ozone depleting substances or greenhouse gases which can alter the thermal balance of the environment and lead to changes in climate, rising sea levels, and adverse effects on health and the environment, are subject to NEPA and must be subjected to the NEPA process.¹⁰⁸

Preceding this legislative statement was correspondence in 1986 between Senator John H. Chafee of the Committee and A. Alan Hill, Chairman of

106. *Id.*

107. IPCC, *The Scientific Basis*, *supra* note 43.

108. S. REP. NO. 502, 100th Cong. 2d Sess. 2 (1988).

the CEQ.¹⁰⁹ The letter requested that the CEQ instruct federal agencies concerning their statutory duty to use NEPA to address climate change and to provide agencies with background material to that effect.¹¹⁰

In 1987, Chairman Hill responded with an acknowledgement of this responsibility within NEPA and noted three federal agency EIS reports that analyzed climate change and atmospheric issues.¹¹¹ The EIS reports were dated 1975, 1977, and 1978; this suggests both an early federal awareness of climate issues as well as an ability to include a well-reasoned (if brief) analysis of the issue within a project-specific EIS, even when the scientific boundaries of climate change were still very much in flux.¹¹²

In 1988, after eighteen months of public meetings, the CEQ developed draft guidelines for the integration of NEPA analysis and climate change issues (the status of their issuance is unknown).¹¹³ Presumably, these guidelines were related to the 1997 CEQ issuance of draft guidelines. Also that same year, the EPA commented on a draft EIS concerning rulemaking for independent power producers, noting that the EIS was insufficient as it “contains no consideration of ‘global warming’ issues.”¹¹⁴ Although apparently forgotten long ago in the zeal to pursue (or resist) the single-solution approach of the Kyoto Protocol, it is evident that not only do the boundaries of EIA demonstrate a theoretical basis for including climate change, but actual administrative actions show an early assumption of this duty.

In 1990, scientists from the U.S. Department of Energy’s Oak Ridge National Laboratory published a policy research paper entitled *Global Climate Change and NEPA Analysis*, which contained a detailed examination of how federal agencies could integrate climate change into their decision-making and approvals process.¹¹⁵ Although the policy options and scientific understanding surrounding climate change have advanced in the two decades following the paper’s publication, the paper nonetheless presents a compelling analysis, with much information still relevant to today’s decision-makers and litigants.

109. Letter from Senator John H. Chafee to A. Alan Hill, CEQ Chairman (Sept. 12, 1986), quoted in Jennifer Woodward, Comment, *Turning Down The Heat: What United States Laws Can Do To Help Ease Global Warming*, 39 AM. U.L. REV. 203, 224 n.160 (1989).

110. *Id.*

111. *Id.*

112. *Id.*

113. *CEQ Developing Guidance*, [Current Developments] ENV’T REP. (BNA) No. 26, at 1243 (Oct. 28, 1988).

114. Environmental Impact Statements and Regulations, 53 Fed. Reg. 40,269 (Oct. 14, 1988).

115. See Robert Cushman et al., *Global Climate Change and NEPA Analysis*, in ENVIRONMENTAL ANALYSIS: THE NEPA EXPERIENCE 442 (1993).

The paper first notes that an action under an agency's consideration, "ranging from a single activity to the implementation of broad federal policy, may affect global climate, either individually or in consequence with other actions," and that the action under consideration may itself be affected by the impacts of climate change.¹¹⁶ In addition, the paper briefly explains the sources of GHG emission and the broadly-projected impacts, including an increased frequency in storms, temperature rise, and a sea level rise between one and three meters in the next century.¹¹⁷ The authors recognized that NEPA had inherent limitations as applied to climate change; specifically, that it was unable to address the reduction of existing GHG levels, its lack of mandated follow-up or oversight during mitigation, and its failure to mandate specific mitigation or environmentally-friendly outcomes.¹¹⁸

"Finally, NEPA is written very broadly so that it can be construed as to require consideration of many topics not recognized as important in the late 1960s, global climate change being just one example. However, such broadening could be subject to court challenge."¹¹⁹ While still open to litigation, NEPA indeed was drafted to include a broad laundry list of environmental issues.

After recognizing its limitations, the authors reviewed several of the congressional bills proposed prior to 1990 which discussed climate change in some form, including eighteen bills which linked climate change and NEPA.¹²⁰ These bills ranged from general NEPA amendments to specific requirements for federal agencies to consider extraterritorial actions under NEPA.¹²¹ The report also summarized CEQ's 1988 draft guidance document on climate change and NEPA.¹²² Even though the documents remained in draft form, by 1989 the CEQ finally received comments from federal agencies.¹²³

Contained in the 1988 draft guidance document, the CEQ determined that "global warming is a 'reasonably foreseeable' impact of emissions of greenhouse gases, and that this impact must be considered in future NEPA

116. *Id.* at 443.

117. *Id.* at 444–45.

118. *Id.* at 448–49.

119. *Id.* at 449.

120. *See id.* at 449–51 (noting there were 120 such bills reviewed).

121. *See id.* (adding that the authors considered project impacts on the global environment either generally or specifically in terms of geographic or thematic categories).

122. *See id.* at 451 (noting that the report deliberately remained in draft form per the directive of the outgoing Reagan administration because of both litigation concerns for existing EIS documents and a lack of tools which measured a project's impact on climate change).

123. *Id.*

documents.”¹²⁴ The result would have required agencies to “immediately” review and assess “the extent to which their activities contribute to the emission of greenhouse gases and, thus, to global climate change.”¹²⁵ In addition, the CEQ noted that existing NEPA documents would be in need of potential supplemental or “new programmatic documents” to conform to the proposed guidance document on climate change.¹²⁶

The CEQ further noted that agencies should focus their analysis on the impacts of their broader programs, and in particular the thematic areas of energy, forestry, and transportation.¹²⁷ The CEQ recommended the focus on long-range actions because analysis of “individual projects would not provide meaningful information.”¹²⁸

In the intervening two decades since the CEQ’s initial draft guidance document, scientific understanding progressed greatly. In the late 1980s, climate change was the realm of scientists who were only starting to understand the breadth of contributing causes. However, there is now a far greater scientific and social understanding of climate change. We now know it may be successfully addressed through both the broadest of global policies and the most personal of lifestyle choices.

Subsequent to the CEQ report, the U.S. Department of Energy’s report analyzes in further detail how climate change may be addressed through the NEPA process. Noting that the consideration of “the climate change issue involves challenges not typically associated with impacts evaluated in NEPA documents,” the authors further analyzed the complexity of this task and suggested potential solutions.¹²⁹

First, the report explained that it may be difficult to tell the decision-maker about an action’s impact on climate change in quantitative terms.¹³⁰ For example, the authors suggest that an action that had less than a 1% increase in emissions “would undoubtedly have a negligible effect on climate,” and thus it would not need to undertake any further emissions analysis.¹³¹ At the time of the paper’s publication, the UNFCCC had not yet met, and the now well known 1990 Kyoto emissions levels threshold were not in place. Even without such a consensus benchmark, the authors suggested that EIA could be used to at least prevent a net increase in emissions, and that the EIA’s “greatest realistic hope is that decision-makers

124. *Id.*

125. *Id.*

126. *Id.* at 452.

127. *Id.* at 453.

128. *Id.*

129. *Id.* at 452.

130. *Id.*

131. *Id.* at 454–55.

will minimize the types of actions that change climate.”¹³² Two decades later, many decision-makers are just starting to search for tools which will allow them to accomplish that goal.

Finally, the authors discuss the scale of project or program that NEPA activities should apply climate change analysis. While noting that the 1988 CEQ draft guidance was correct in stating that broad government programs would be more likely than site-specific actions to have climate change impacts, the authors noted that site-specific projects could also have significant adverse impacts on greenhouse gas emissions, and that “the classification of an action as a program or project by itself is not an adequate criterion for screening actions for climate change analysis” but that such analysis should be applied on the basis of increased levels of emissions.¹³³ “The treatment of climate change in project-specific documents might be an acceptable option,” as well as a more planning practice, if federal agencies first undertook a cumulative impact assessment of their broader policies, and then subsequently linked or tiered this policy goal directed to site-specific projects or actions. NEPA documents should also consider, in their description of “affected environments,” the extent to which climate change would or could change the “baseline” environment in the future, and, if necessary, evaluate how the proposed action could adapt to the impacts of climate change.¹³⁴ NEPA documents should also consider “affected environments” and the extent to which climate change would or could change the “baseline” environment in the future, and if necessary, evaluate how the proposed action could adapt to the impacts of climate change.¹³⁵

While an imperfect application, the authors suggested that climate change analysis within NEPA activities would result in more informed decisions, and that climate change itself “is a result of a series of individually small actions, and the ‘solution’—if there is one—will likely result from a series of separate steps.”¹³⁶

Well ahead of its time, the Department of Energy’s paper accurately predicts the challenges faced by contemporary decision-makers. Climate change appears, to be beyond the grasp of all but a handful of international negotiators. However, if climate change results from the cumulative GHG emissions of many “small scale” projects or programs, then it is at that level of decision-making that such emissions can be best analyzed. Seeing past

132. *Id.* at 455.

133. *Id.*

134. *Id.*

135. *Id.* at 460.

136. *Id.*

the subsequent changes in global consensus and scientific understanding of climate change, the Department of Energy's paper evidences that the integration of climate change planning and EIA activities is not a radical or unrealistic concept, but a very real legal obligation acknowledged long ago.

Recently, the incorporation of climate change analysis within NEPA has again garnered interest in the Senate. The proposed Global Warming Pollution Reduction Act of 2007 (Senate Bill 309) was introduced in January 2007 and is still pending in the Senate's Committee on Environment and Public Works. Ironically, in addition to other regulatory actions, Section 8 of the Bill requires that federal agencies "shall consider and evaluate (1) the impact that the Federal action or project necessitating the statement or analysis would have in terms of net changes in global warming pollution emissions; and (2) the ways in which climate changes may affect the action or project in the short term and the long term."¹³⁷

Senate Bill 309 is one of several proposed climate change bills, and it has substantial political support. Although it is unlikely to be passed without a legislative override of a presumed presidential veto, the bill nonetheless foreshadows a changing political tide on the issue of climate change. While its NEPA provision is only a minor goal of the bill, it is also interesting to note its similarity with the Senate Committee's less formal affirmation of the same topic 20 years earlier. While such legislation would obviously bolster the treatment of climate change under NEPA, it is also somewhat redundant and indicative of the ineffectiveness in relying solely upon broad Congressional intentions.

5. Litigation Involving EIA and Climate Change

Any analysis of climate change issues in the United States should look toward ongoing litigation in addition to legislative intent and the boundaries of EIA. An examination of existing litigation highlights the issues most likely to be raised during future challenges to EIA documents on the basis of climate change.

Although one commentator claims that EIA-related climate change litigation could increase substantially, EIA litigation has only just begun.¹³⁸

The issue of EIA as a valid topic of climate change was litigated in the

137. Global Warming Pollution Reduction Act, S. 309, 110th Cong. (2007), available at <http://sanders.senate.gov/files/GlobalWarming011207.pdf>.

138. Blake R. Bertagna, "Standing" Up for the Environment: The Ability of Plaintiffs to Establish Legal Standing to Redress Injuries Caused by Global Warming, 2006 BYU L. REV. 415, 465 (2006) (claiming that NEPA "is the principal statute under which global warming plaintiffs will probably bring their personal injury claims").

District Court for the Northern District of California in *Friends of the Earth v. Watson*, a case in which NGOs and the cities of Boulder, Colorado; Oakland, Santa Monica; and Arcata, California, sued the Overseas Private Investment Corporation and the Export-Import Bank.¹³⁹ The plaintiffs claimed that the two organizations were indirectly responsible for 7.3% of global GHG emissions, and directly responsible for 1% of such emissions.¹⁴⁰

The initial decision rejected the banks' motion for summary judgment since the banks lacked sufficient proof of an "injury in fact," noting that plaintiffs need not demonstrate proof of imminent harm to the degree that so doing would require them to conduct the very review they seek to have the agency undertake.¹⁴¹ The commentators also noted the potential significance of the decision, remarking, "if the court adheres to its preliminary views on NEPA, it would represent a real step forward in forcing U.S. agencies to either acknowledge the link between climate change and support for new emission sources in developing countries or to risk judicial invalidation of the their projects because of incomplete NEPA reviews."¹⁴²

Subsequent arguments in the case, made in March of 2006, set forth much of the framework needed in applying climate change as an EIA category. First, the plaintiffs argued that NEPA requires consideration of all reasonably foreseeable environmental effects including direct and indirect effects.¹⁴³ The plaintiffs reminded the court such indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable and encompass effects on air and water and other natural systems, including ecosystems.¹⁴⁴ The settled threshold of reasonably foreseeable in relation to NEPA is that such an impact would be

139. *Friends of the Earth v. Watson*, Doc. No. 02-4106, 2005 WL 2035596 (N.D. Cal. Aug. 23, 2005); see also *Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 508 F.3d 508, 548-49 (7th Cir. 2007) (holding that in issuing national fuel efficiency standards, the National Highway Traffic Safety Administration was required to fully consider climate change under NEPA).

140. See *Friends of the Earth v. Mosbacher*, 488 F. Supp. 2d 889, 902 (N.D. Cal. 2007); (forecasting that the forthcoming decision promises to have substantial impacts upon both climate change and EIA practices); see also Defendant's Cross-Motion for Summary Judgment Memorandum at 1 (March 31, 2006), *id.* OPIC and Ex-Im fund or financially assist projects, including fossil-fuel-fired power plants, which result in over 260 million tons of CO₂ annually, which is approximately 1% of global annual emissions. Indirectly, the two organizations finance oil pipelines which result, indirectly, in oil consumption and annual emissions impact of over 7% of global emissions. *Id.*

141. *Watson*, 2005 WL 2035596, at *2.

142. Stephen L. Kass & Jean M. McCarroll, *Litigating Climate Change via State Regulations, Federal Courts*, N.Y. L.J., Apr. 28, 2006, available at <http://www.clm.com/publication.cfm/ID/75>.

143. *Mosbacher*, 488 F. Supp. 2d at 892.

144. *Id.* at 894.

“sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision.”¹⁴⁵ The plaintiffs’ argument rested upon settled NEPA case law reiterating regulatory guidance in noting that “when the nature of the effect is reasonably foreseeable but the extent is not . . . the agency may not simply ignore the effect.”¹⁴⁶

The *Friends of the Earth v. Watson* opinion also relied heavily upon cases from the Southern District of California as well as the Eighth Circuit. In *Border Power Plant Working Group v. DOE*, the District Court for the Southern District of California required DOE to disclose and evaluate the GHG emissions of a single 500 MW gas turbine power plant, despite its relatively minor impact on climate change.¹⁴⁷ In *Mid States Coalition for Progress v. Surface Transportation Board*, the Court of Appeals for the Eighth Circuit found that construction of hundreds of rail lines, with the purpose of increasing coal extraction in Wyoming would be required under NEPA to analyze the environmental impacts from increased coal usage.¹⁴⁸

However, the application of NEPA to climate change analysis was not a central question in either *Mid States* or *Border Plant*, and the judicial decisions do not analyze this mandate in extensive detail. The District Court for the Southern District of California in *Border Plant* noted NEPA is not necessarily limited to only atmospheric pollutants listed under the Clean Air Act, and that an agency has the affirmative burden of providing evidence that GHG pollutants fall outside of NEPA’s boundaries:

Although the agencies state that plaintiff has provided no authority for the proposition that it must consider the impacts of carbon dioxide and ammonia, neither do the agencies provide reasoning or legal authority for their proposition that they need not disclose and analyze these emissions merely because the EPA has not designated them as criteria pollutants. In fact, one of defendants’ consultants advised the agencies that all criteria and non-criterion air pollutants relevant to the proposed action should be assessed.¹⁴⁹

145. *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (8th Cir. 2004) (quoting *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992)).

146. *Id.*

147. *Border Power Plant Working Group v. Dep’t of Energy*, 260 F. Supp. 2d 997, 1026–29 (S.D. Cal. 2003).

148. *Mid States Coal. for Progress*, 345 F.3d at 548–50.

149. *Border Power Plant*, 260 F. Supp. 2d at 1028.

The defendants in *Border Power Plant* have argued that the connection between localized impacts and financing decisions encouraging GHG emissions is scientifically speculative such that the connection is so remote there can be no meaningful NEPA analysis of potential impacts on the United States.¹⁵⁰ However, the plaintiffs have noted that climate change impacts need not be precise or rigidly quantified, but only useful for the broad purposes of decision-making, such that one could conclude that a reduction in GHG emissions would be beneficial in addressing climate change. The plaintiffs argued that the connection between the proposed action and impact need only be clear enough to prove the utility of the analysis.¹⁵¹

In March of 2007, Judge Jeffrey White of the Northern District of Court of California granted and denied in part the earlier motion to dismiss. Despite the earlier arguments about the application of climate change to environmental impact assessment, Judge White left treatment of the issue to a single footnote, stating that although the Overseas Private Investment Corporation and the Export-Import Bank argued that the approval of additional GHG output would be “too remote and speculative to be considered for purposes of NEPA” the defendants’ own reports did not dispute that GHGs contribute as a dominant force to climate change; and accordingly “it would be difficult for the Court to conclude that Defendants have created a genuine dispute that GHGs do not contribute to global warming.”¹⁵²

However, the Judge concluded that there was insufficient evidence to determine if the agency actions were the “but for” legal cause of the additional GHG releases or if such actions would have occurred regardless of agency activity or approval.¹⁵³ Without such a fact-specific determination, Judge White was unable to determine if the actions of the Overseas Private Investment Corporation and the Export-Import Bank constituted “legally relevant” causes of the GHG emissions increase. Thus,

150. *Id.* Defendants’ memorandum discusses *Dep’t of Transp. v. Public Citizen*, 541 U.S. 752 (2004), which notes that although the “‘but for’ causal relationship is insufficient to make an agency responsible for a particular effect . . . , NEPA requires ‘a reasonably close causal relationship’ between the environmental effect and alleged cause.” In addition, “where an agency has no ability to prevent a certain effect due to its limited statutory authority over the relevant actions, the agency cannot be considered a legally relevant ‘cause’ of the effect.” *Public Citizen*, 541 U.S. at 770.

151. *See Sierra Club v. Marsh*, 769 F.2d 868, 878 (1st Cir. 1985) (noting that the question asked under in the first circuit’s opinion is “can one describe [the impacts] ‘now’ with sufficient specificity to make their consideration useful”).

152. *Friends of the Earth v. Mosbacher*, 488 F. Supp. 2d 889, 918 n.19 (N.D. Cal. 2007).

153. *Id.*

the relevant arguments in the *Friends of the Earth* case remain largely unresolved and are likely to be re-litigated in the near future.

Addressing the decision the day after the *Friends of the Earth* decision was handed down, attorneys representing both the plaintiffs and defendants spoke at an academic symposium. Wrestling with the complexities of integrating climate change and NEPA activities, Geoffrey Hand, the plaintiff's attorney, wondered if there was a precise percentage of emissions that would either require legal standing (by specialized injury) or a threshold trigger for further analysis.¹⁵⁴ Mr. Hand declared such a numbers game to be a "slippery slope," and, echoing the conclusions of the Senate committee in 1988, that NEPA's application to climate change "is a rule of reason . . . you need to look at the underlying purpose of NEPA which is to inform agency decision-making, and think about what authority the agency that is acting has to act on that information—if they evaluate the impacts [on climate change then] what can they do at that point."¹⁵⁵ To Mr. Hand, there is a valid legal argument that "any federal project that contributes to GHG emissions that is approved or financed or permitted by the federal government" would be subject to at least an environmental assessment.¹⁵⁶ To the plaintiffs, such an exercise in reviewing indirect impacts would, not be a fruitless paper chase, but instead a valuable opportunity to reduce overall GHG emissions.¹⁵⁷

Kevin Haroff, a private attorney speaking on behalf of the Department of Justice (and the author of a recent law review article on the topic), presents a different view—that only a single, unified program can address climate change, and that the application of climate change to NEPA for a site-specific project "is impossible to do . . . we have to look at each case, on a case by case basis, to determine whether or not an environmental review is going to be necessary—I don't think that is going to happen."¹⁵⁸ Such a review of cumulative actions, he notes, would lack a geographic or temporal nexus.¹⁵⁹ To Mr. Haroff, EIA is limited as a tool to address climate change because such an application was not contemplated at the time of the passage of these laws, and such an application fails to address climate change in a comprehensive manner integrated with foreign

154. National Environmental Policy Act Litigation Discussion Session, Univ. of San Francisco Law Review Seminar: The Domestic Response to Global Climate Change (2007) (notes of conference proceedings on file with author).

155. *Id.*

156. *Id.*

157. *Id.*

158. *Id.*

159. *Id.*

policy.¹⁶⁰ Finally, he notes that the Department of Justice claims that the application of climate change within EIA documents would bring federal activities to “come crashing down because it would be bogged down in the environmental review process” and that, as a result, such an application “is completely impracticable.”¹⁶¹

The existing U.S. NEPA litigation over climate change issues within an EIA context overlooks many of the wider philosophical and legislative boundaries (including the 1988 Congressional Report). However, it is clear that, although proximate causation is likely to be a central issue in any EIA litigation relating to climate change, the scant precedent does not bar such an application.

In addition, climate change has been addressed most substantively in several California EIA actions, which accompany the proposed adoption of regional long-range transportation and growth plans. These lawsuits allege that, given the state adoption of a climate change strategy with specific GHG targets, GHG emissions must be analyzed by relevant EIA documents prepared under CEQA, the state EIA law.

According to Dr. Tony Held of the Jones & Stokes Consultancy, “numerous metropolitan planning organizations have already been notified by the Attorney General of California that global warming analysis needs to be meaningfully addressed as part of the long-term transportation and regional development planning process.”¹⁶² Specifically, the State Attorney General and the non-profit Center for Biological Diversity have initiated separate litigations against San Bernadino County, pending in San Bernadino County Superior Court.¹⁶³ The San Bernadino lawsuits pertain to an EIA document for the County’s General Plan Update, which allegedly fails to reconcile planned population growth with increased GHG emissions.¹⁶⁴ A recent settlement included an acknowledgement by the County that GHGs had to be considered in the EIA analysis, and a promise to therefore incorporate climate change impacts into its comprehensive planning.¹⁶⁵

160. *Id.*

161. *Id.*

162. Jones & Stokes, Climate Change Focus Group, <http://www.climate-change-eis.com/index.html> (last visited Apr. 30, 2008).

163. TONY HELD ET AL., ADDRESSING CLIMATE CHANGE IN NEPA AND CEQA DOCUMENTS (2007), available at http://www.climate-change-eis.com/docs/JonesAndStokesClimateChangeCeqaNepa_Aug_2007.pdf.

164. *Id.*

165. Confidential Settlement Agreement, California v. County of San Bernadino, Case No. CIVSS 0700329 (Sup. Ct., San Bernadino, Aug. 28, 2007), available at http://ag.ca.gov/cms_pdfs/press/2007-08-21_San_Bernardino_settlement_agreement.pdf.

Two similar lawsuits filed by the Center for Biological Diversity against the California cities of Desert Hot Springs and Banning are pending at the Riverside County Superior Court, and allege inappropriate EIA documents for housing subdivisions, which also fail to analyze GHG emissions.¹⁶⁶ While the path through the courtroom might be painfully slow, it is possible that the California cases could have a non-binding impact in other jurisdiction's EIA cases regarding climate change, should the California courts address topical (rather than procedural) issues. A third, similar lawsuit was recently filed in a Minnesota state district court during September 2007, alleging that an EIS prepared under the Minnesota Policy Act (a "mini NEPA" state law) for a proposed taconite mining and steel mill operation. The lawsuit, *Minnesota Center for Environmental Advocacy v. Holsten*, alleges that the EIS was inadequate because it failed to address significant environmental impacts related to a growth in GHG emissions, and that this failure frustrated a state policy to reduce statewide GHG emissions.¹⁶⁷

Circumstantial evidence indicates that forthcoming EIA documents may increasingly have to tackle the issue of climate change analysis. In its comments about the proposed scope of an EIA document for the rezoning and redevelopment of a former industrial area in Brooklyn, New York, the Municipal Art Society stated that "under the current structure and mandate of SEQRA/CEQR, the lead agency not only has the ability to examine a project's impact upon climate change, but is under obligation to do so."¹⁶⁸

The comments by the Municipal Art Society went on to explain that while GHG evaluation tools are still under development, agencies can nonetheless develop a basic accounting and disclosure of GHG emissions, and that the inclusion of climate change in EIA analysis is an important step in achieving much-needed project-specific implementation of broader political goals.¹⁶⁹

To date, no formal response by the City of New York has been issued to the Municipal Art Society comments. However, the integration of climate change and EIA (under the state SEQRA law) became a priority in 2007 for several New York environmental nonprofits, including Environmental

166. HELD ET AL., *supra* note 163, at 20.

167. Plaintiff's Reply Brief at 4–7, *Minnesota Ctr. for Env'tl. Advocacy v. Holsten*, No. 31-CV-07-3338 (Dist. Ct. Itasca County, Minn., Sept. 10, 2007), available at http://www.mncenter.org/minnesota_center_for_envi/files/complaint3.DOC.

168. Municipal Art Soc'y, *Comments on the Draft Scope of Work for an Environmental Impact Statement, Proposed Domino Sugar Rezoning 9* (Aug. 2007), available at <http://www.mas.org/images/media/original/Domino%20Scope.pdf>.

169. *Id.* at 9–10.

Advocates of New York and the League of Conservation Voters.¹⁷⁰ In addition, King County in Washington State, which includes the city of Seattle, has recently signed a Statement of Shared Action with the Republic of the Marshall Islands, a low-lying Pacific island nation highly vulnerable to climate change impacts.¹⁷¹

As an additional means of demonstrating how municipal or regional governments can address climate change, King County issued an executive order, effective October 2007, which would require any development project undergoing EIA analysis, under local administration of SEPA, the state EIA law, would also contain a detailed analysis of long-term GHG emissions. The County also has developed an automated spreadsheet that contains calculated scientific estimates of GHG emissions based upon factors such as square feet of new construction, or square feet of additional paved surface.¹⁷² King County's executive order justifies the inclusion of climate change as a topic within EIA documents on the basis of both localized impacts of climate change, such as water supply security, curtailed recreational opportunities, and coastal erosion, as well as the inclusion of climate change within the local long-term comprehensive plan.¹⁷³ As politicians of all persuasions increasingly realize the need to discuss climate change as an important social topic, the pressure to turn those statements into action will increase.

Some commentators argue that, barring more specific federal action, plaintiffs may utilize federal common law in tort as a means to enjoin further increases in GHG emissions, noting that

the regulation of CO₂ in order to prevent or slow global warming is particularly well-matched for the federal common law of public nuisance. Public nuisance is an injury, which carries a right deserving of a remedy.

170. *See generally* LEAGUE OF CONSERVATION VOTERS ONE HUNDRED-DAY AGENDA FOR GOVERNOR-ELECT ELIOT SPITZER 2 (2006), available at <http://www.nylcv.org/sites/nylcv.civicactions.net/files/100-DayAgenda.pdf>.

171. Kessai Note, President, Marshall Is., and Ron Sims, Executive, King County, Wash., Statement of Shared Action Between the Republic of the Marshall Islands and Martin Luther King Jr. County, State of Washington, United States of America (Jan. 26, 2007), available at <http://www.metrokc.gov/exec/news/2007/pdf/0226globalWarmingMarshallIslands.pdf>.

172. King County, Washington, Evaluation of Climate Change Impacts Through the State Environmental Policy Act (Oct. 15, 2007), available at <http://www.kingcounty.gov/operations/policies/executive/utilitiesaeo/put7101aao.aspx>; DEP'T OF DEV. & ENVTL. SERV., KING COUNTY, WASHINGTON, SEPA GHG EMISSIONS WORKSHEET VERSION 1.7 12/26/07 (2007), available at <http://www.metrokc.gov/des/forms/SEPA-GHG-EmissionsWorksheet-Bulletin26.pdf>.

173. King County, *supra* note 172.

Because federal common law provides an available remedy, it cannot be displaced with a regulatory vacuum.¹⁷⁴

Assuming that the Clean Air Act does not actually displace such federal common law, a question unanswered by the Supreme Court in *Massachusetts*, one must then ask if any other statutes are specific enough in their treatment of GHGs so as to displace federal common law nuisance claims. The conclusion that “as Congress has not regulated global warming or GHGs in these statutes [including NEPA], it appears that the common law survives” may not be correct should a court find that the Senate Committee report in 1988 constitute sufficient, specific legislative preemption.¹⁷⁵ Certainly, the extent to which relevant EIA law preempts common law should be carefully analyzed in any climate change nuisance action.

It is also important to mention the need to study comparative litigation related to EIA and climate change in other nations. Anecdotal evidence points the reader first to *Australian Conservation Foundation v. Minister of Planning*, in Melbourne Australia, a recent case in which NGOs successfully stopped a federal minister from preventing a regional planning body from considering GHG emissions in deciding to permit a new coal mine, as well as to *Germanwatch and BUND (The German section of Friends of the Earth) v. The German Federal Ministry of Economics and Labour*, filed in 2004, an NGO challenge to a federal agency failing to take climate change into account when administering its program.¹⁷⁶ Additional research may point to more lawsuits around the world. However, climate change litigation is still in its extreme infancy.

Comparative litigation abroad also offers additional positive treatment of climate change within an EIA context. The New Zealand Environmental Court in 2005, in a government challenge of an EIA report prepared under the Resource Management Act of 1991, rejected government arguments that the GHG benefits (reduced emissions through alternative energy) of a wind

174. Sarah Olinger, Comment, *Filling the Void in an Otherwise Occupied Field: Using Federal Common Law to Regulate Carbon Dioxide in the Absence of a Preemptive Statute*, 24 PACE ENVTL. L. REV. 237, 269–70 (2007).

175. Dan Mensher, *Common Law on Ice: Using Federal Judge-Made Nuisance Law to Address the Interstate Effects of Greenhouse Gas Emissions*, 37 ENVTL. L. 463, 484 (2007).

176. Nat'l Ass'n of Env'tl. Law Soc'ys, *Climate Change 101 for Lawyers*, <http://www.naels.org/projects/ccn/gcn/research.htm> (last visited Apr. 30, 2008); see also Gerrard, *supra* note 6, at 23 (discussing additional recent Australian cases *Gray v. Minister for Planning* (2006) N.S.W.L.E.C. 720 and *Re Xstrata Coal Queensland Pty Ltd.* (2007) Q.L.R.T. 33, and indicating a possible judicial split).

farm were insignificant because of the small size of the farm.¹⁷⁷ In addition, a decision in a recent human rights case in Nigeria, regarding corporate and government sponsorship of gas flaring (venting excess waste oil) in the Niger Delta without undergoing EIA assessments, focused primarily upon localized impacts, but also noted that gas flaring constituted an adverse release of GHGs, and that such practices without an EIA violated Nigerian constitutional rights to life and dignity.¹⁷⁸ While there are few, if any, centralized means regarding global EIA litigation, such lawsuits may also have limited persuasion on U.S. judges.

D. Professional Technical Guidance on EIA and Climate Change

Increasingly public agencies and private applicants rely upon professional consultants to prepare EIA reports. This reliance has generated a substantial global industry in which multinational engineering firms, specialty boutiques, and individual solo consultants proffer expertise in every niche of the EIA process. As both environmental science and legal challenges have grown in complexity, the length and cost of EIA reports also have grown considerably within the United States. The revenues and numbers of consultants also have risen proportionately. Even when agencies and applicants are compelled or seek to incorporate climate change within EIA documents, they will be challenged to do so unless such services or expertise is available from private consultants. Therefore, the incorporation of climate change within the EIA process will also require a shift within the professional community to develop and sell corresponding means or methods.

As a means of preempting or jumpstarting this shift, California's oldest environmental consultancy, Jones & Stokes, has recently issued a draft industry white paper that briefly outlines alternative treatment strategies for climate change within EIA projects.¹⁷⁹ The issuance of the white paper coincided with the creation of a corporate EIA climate change practice group. While doubtless that other competing consulting firms have similar, if underdeveloped, internal capacities, the ability of agencies and applicants to produce meaningful climate change treatment within EIA documents depends upon the capacity of the environmental consulting community.

177. See Sara C. Aminzadeh, Note, *A Moral Imperative: The Human Rights Implications of Climate Change*, HASTINGS INT'L & COMP. L. REV. 231, 237 (2007) (referencing *Genesis Power Ltd. v. Franklin Dist. Council*, [2005] N.Z.R.M.A. 541 (N.Z.)).

178. See *id.* at 238 (referencing *Gbemre v. Shell Petroleum Dev. Co. Nigeria Ltd.*, No. FHC/B/CS/53/05 (F.H.C. Nov. 14, 2005) (Nigeria)).

179. Jones & Stokes, *supra* note 162.

V. COMPARATIVE INTERNATIONAL TECHNICAL GUIDANCE ON EIA AND CLIMATE CHANGE

In analyzing the potential for an EIA incorporation of climate change, it is important to look abroad. Over 100 nations have adopted EIA laws or policies and it is likely that other nations' experiences with this issue can further inform future domestic and international efforts. As there is no centralized EIA register, it is difficult to ascertain the degree to which the international community has considered EIA as a means of addressing climate change. A cursory survey of available publications indicates that most nations have overlooked this possibility, so there is a need for increased efforts in this area. Notably, the European Union has issued guidance for its member nations, which includes consideration of global climate change issues.¹⁸⁰ However, this guidance is sparse regarding specific strategies to approach areas of concern. Of greater value is Canada's extensive federal guidance for overseeing the EIA process to be implemented by its provinces.

Starting in 2002, Canada took steps to consider the integration of climate change into the existing EIA process.¹⁸¹ In November 2003, the federal/provincial task force produced a general guide for practitioners,¹⁸² which provided guidance for assessing all projects in terms of GHG emission levels and climate change, as well as assessing the impacts of climate change on a long-term project life. One commentator from the regulated community questioned the reliability of accurate climate change modeling on a site-specific installation, but also noted that "emission levels are a clear area for assessment."¹⁸³

Canadian provinces already have integrated climate change into the EIA process. The process analyzes GHG emissions during scoping and

180. See generally KAREN RAYMOND ET AL., EUROPEAN COMM'N, GUIDANCE ON EIA SCOPING (2001), available at <http://ec.europa.eu/environment/eia/eia-guidelines/g-scoping-full-text.pdf> (proposing guidelines for EIA procedure to members of the European Union). The EIA guidance document describes the scoping procedure required by the European Union. It contains a list of checklist questions which includes identifying whether project releases are likely to effect "global air quality including climate change and ozone depletion." *Id.* at 34.

181. Bob Page, Vice President, Sustainable Development, TransAlta Corp., Keynote Speech at the Int'l Assoc. for Impact Assessment, Integrating Climate Change into Impact Assessment: Challenges for Integrity and Credibility 5 (Apr. 26, 2004), available at http://www.iaia.org/non_members/conference/IAIA04/04%20CD-ROM/Keynote-Speeches/OP%20Bob%20Page%20Integrating%20Climate%20Change%20into%20IA.pdf.

182. *Id.*

183. *Id.*

provides more analysis deeper into the EIA project.¹⁸⁴ The threshold for “significance” is not yet well defined. The determination of significance is reached after analyzing a project’s related emission volume or intensity common to a particular industry or geographic region, and subsequently attempting to define “low, medium or high volumes or intensity” of emissions.¹⁸⁵ If appropriate, more detailed analysis is then undertaken, including development and consideration of a GHG management plan showing how emissions considerations are addressed through jurisdictional regulations, emissions reduction, and offset measures. The guidance mentions standard measures in passing, such as international emission credit trading, industry best practices, and other compensatory measures. Adaptive management policies that continually monitor and plan responses to changes in science and policy are further encouraged.

In relying upon an adaptive management approach, Canada found that EIA could readily apply to climate change despite the evolving nature of climate change science, technology, policy, and legislation. Furthermore, the guidance encourages interaction between the GHG management plans and other impact areas, such as air and water pollution. The guidance also highlighted case studies of recent EIAs, preceding the 2003 guidance, such as the EIA for the 1000 MW Brooks Power Plant and Coal Mine Project in Alberta.¹⁸⁶ There, the applicant identified the sources and quantity of GHG emissions and subsequently devised a specific design plan for phased future action to accommodate potential modifications.

Another noteworthy case study was the Diavik Diamond Mine project in the Northwest Territories. There the applicant registered with the Voluntary Challenge and Registry Program and agreed to consider the use of on-site wind power as a means of mitigating GHG emissions.¹⁸⁷ The Environmental Assessment guidance was developed before Canada had ratified the Kyoto Protocol—a time in which there was little regulatory framework for GHG emissions. A recent inventory of Canadian environmental assessment documents indicates that their EIA process

184. CANADIAN ENVTL. ASSESSMENT AGENCY [CEAA], INCORPORATING CLIMATE CHANGE CONSIDERATIONS IN ENVIRONMENTAL ASSESSMENT: GENERAL GUIDANCE FOR PRACTITIONERS (Nov. 2003), *available at* http://www.ceaa-acee.gc.ca/012/014/index_e.htm; *see also id.* annex C (Case Studies of Canadian Approaches), *available at* http://www.ceaa-acee.gc.ca/012/014/c_e.htm; AREVA RES. CANADA, INC., DRAFT PROJECT-SPECIFIC GUIDELINES AND COMPREHENSIVE SCOPING DOCUMENT: ENVIRONMENTAL IMPACT ASSESSMENT OF THE MIDWEST (MINING) PROJECT, *available at* <http://www.ceaa-acee.gc.ca/050/documents/18253/18253E.pdf> (last visited Apr. 30, 2007).

185. CEAA, *supra* note 184.

186. AREVA RES. CANADA, INC., *supra* note 184.

187. Claire Eamer, Climate Change a Factor in Environmental Assessment, <http://www.taiga.net/yourYukon/col415.html> (last visited Apr. 30, 2008).

continues to analyze GHG emissions, even though the federal commitment to Kyoto's goals is unclear.

Canada's use of adaptive management approaches to GHG management plans, including mitigation measure, is a promising approach to tackling an emerging environmental issue for which general scientific knowledge is certain, but for which new understandings and strategies will emerge. The employment of adaptive management would prevent the legal shell game where regulatory action on climate change is delayed indefinitely because of scientific uncertainty. However, this same scientific uncertainty plagues the guidance. There is very little actual guidance provided instructing how agencies can define a threshold of significance for GHG emissions. Accordingly, there can only be inconsistency between different EIA projects. It is also possible that this somewhat vague approach is attributable to Canada's weak federal structure. Nonetheless, the Canadian EIA model does not appear to have stalled proposed projects and does not appear to have negative economic consequences.

The 2003 Canadian guidance provides an interesting template regarding the integration of GHG concerns to EIA. The application of climate change as an EIA study category suggests that its inclusion is both appropriate and feasible. The Canadian EIA approach to climate change is not only intended to be compatible with current regulatory efforts, but is flexible enough in its application as both regulations and scientific analysis change. The utilization of adaptive management suggests that currently EIA can address the environmental impacts of increasing GHG emissions, but will still be useful in light of future advances in the scientific understanding of climate change.

VI. DOMESTIC EIS EXAMPLES: WIND POWER DEVELOPMENT

Climate change takes a central role in ongoing national debates regarding the location of alternative-energy wind farms. Proponents and opponents haggle over the proper balance between the reduction in GHG emissions and the esthetic and ecological impacts of wind farms. However, notwithstanding the public debate of such issues, EIA documents are reluctant to address the topic. When the issue of wind farms is raised, it is only mentioned in passing and provides no information to aid the reader in evaluating its potential benefits. Due to the scientific consensus that global

warming is a consequence of GHG emissions, wind technology deserves a more prominent role within the EIA process.¹⁸⁸

Although the effort is sporadic at best, domestic EIAs have discussed climate change in the context of wind energy developments. Wind farms have been lauded by certain environmental interests for their reduced footprint upon ecological resources, while others have questioned impacts of such developments upon the rural, historic, or natural character of the surrounding landscape. EIAs are frequently prepared for large-scale wind farms and have varying degrees of success in fully addressing and mitigating environmental impacts. However, such efforts often involve a discussion of climate impacts. In particular, comparing the baseline “no build” alternative in which traditional CO₂ emitters continue operations with the zero emissions offered by wind energy. This climate change analysis has been undertaken either sporadically or with different degrees of analysis.¹⁸⁹

A fair reading of the U.S. Department of Energy’s (DOE) written guidance for environmental review also permits such discussion. An analysis of impacts might focus on generalities and is not necessarily

188. Dorothy W. Bisbee, *Coastal Wind Energy Generation: Conflict and Capacity: Symposium Article: Review of Offshore Wind Farms: Ensuring Emission Reduction Benefits Outweigh Visual Impacts*, 31 B.C. ENVTL. AFF. L. REV. 349, 367 (2004).

189. An examination of several wind farm EIS documents shows the range of sophistication and level of treatment. Examining the Condon Wind Farm (Oregon) EIS, one commentator notes: [T]he Final EIS added the following paragraph in the “Need for Action” section: “Technologies like wind power generation can help displace additions to the power system that might otherwise come from fossil fuel combustion or hydro-powered generation. Wind power can help meet energy needs without additional emissions of greenhouse gases. The Condon Wind Project is an opportunity to satisfy consumer demand for increasing the amount of renewable energy resources in the region’s power supply.” This general paragraph alerts the reader to some of the benefits of alternative energy, but does not allow the reader to evaluate these benefits. Section 5.10 of the Draft EIS provides the following brief mention of emission reductions and benefits to global warming concerns: “The proposed project would not generate emissions of gases (such as carbon dioxide) that contribute to global warming. To the extent wind energy reduces the amount of fossil fuel generation, global warming impacts can be avoided.”

Id. at 377. However, a comparative analysis of the Maiden Wind Farm Draft EIS, in Washington State, demonstrates:

[M]ore detail on emission reductions and the project itself is ten times larger. The discussion of air impacts of the no action alternative includes two paragraphs stating that the gas-burning combined cycle combustion turbines that would likely be built in place of the project would emit about 5.81 tons of nitrogen oxides and 3,094 tons of carbon dioxide per average megawatt per year.

Id. at 377–78.

limited to criteria pollutants currently regulated by the Clean Air Act.¹⁹⁰ Reading DOE's guidance in light of the recent *Massachusetts* ruling by the Supreme Court would lend even more credibility to the consideration of GHGs in energy-related EIA documents. Wind farms and their EIA documents have been challenged by opponents, although such arguments do not generally dispute the analysis of GHG emissions within the EIA. Although such discussions often are relatively limited to broad statements, the presence of climate change within domestic EIAs for wind farms further demonstrates the feasibility of integrating climate change issues within an EIA context.

In addition to wind farms, several other domestic EIA documents have recently addressed climate change. Notably, a forthcoming NEPA Environmental Impact Statement of Yakima River Basin Water Storage practices, conducted by the U.S. Bureau of Reclamation, plans to address all project alternatives both with and without the impacts of climate change.¹⁹¹ It is likely that, within the next three to five years, a substantially higher number of EIA documents will incorporate climate change analysis.

VII. EIA PROCESS & CLIMATE CHANGE

An understanding of the likely process through which EIA documents could identify, disclose, and analyze climate change issues is critical in ensuring the validity of such a proposed incorporation. EIA's inclusion of GHG issues must rest upon much more than principle, legal theory, and

190. The DOE policy distinguishes between the "affected environment" and the "no action alternative." This is a distinction critical to exploring emission reductions. DOE explains:

The affected environment's air quality discussion might describe the general climate, wind, temperature, rainfall, ambient concentrations of air pollutants at the site, and current site emissions and emission rates. Also, this discussion would, as appropriate, identify existing air quality permits and specify the attainment status for criteria pollutants. In contrast, impact assessment for the no action alternative would project future site emissions and emission rates without the proposed action. The impact assessment also would identify the impacts of such future emissions on compliance with applicable air quality regulations and permits, the attainment status for criteria pollutants, and human health and environment. Consistent with this policy, renewable electricity generation EISs should forecast what site emissions and cumulative emissions will be in the future in the event that the renewable project does not go forward. This calculation will require a projected increase in air emissions.

Id. at 378.

191. JOHN PETROVSKY & MARK BRANSOM, YAKIMA RIVER BASIN WATER STORAGE FEASIBILITY STUDY: FEASIBILITY ANALYSIS & NEPA/SEPA EIS: PHASE INITIATION CHECKPOINT—ROUNDTABLE MEETING SUMMARY 3 (2007), available at http://www.usbr.gov/pn/programs/storage_study/roundtable/mtg3-summary.pdf.

brief descriptions of other experiences. Rather, the proposed incorporation must also be demonstrated as practical and feasible in order to be accepted by government agencies or commercial development interests. This procedural analysis demonstrates that, although climate change is technically complex when viewed as a global issue, its place within an EIA rests comfortably alongside areas traditionally studied within EIA documents. While many EIA laws are created with enough flexibility to permit the treatment of GHGs without additional legislative mandate, a more specific legislative revision of regulations supporting SEQRA, New York State's EIA law, is provided in Appendix I.

A. Scoping & Climate Change

The scoping process allows for the identification of potential study topics and study methodologies as related to a particular project. Study topics that are deemed to be unrelated or irrelevant are likely to be excluded from further analysis. Participation by civil society in the scoping process, through either written or verbal statements is likely to provide a basis for at least some incorporation of climate change issues. Scoping provides an opportunity for agencies to identify creative—and cost effective—means by which to incorporate climate change issues. Specifically, the failure to identify tailored investigatory methods during a scoping process will result in either an insufficient analysis of climate change impacts (and thus open the EIA document to later litigation), or the selection of an analytical approach which is either too intensive or too superficial. The end result of a balanced decision will only be responsive if it is prepared with the right ingredients. Scoping must not only identify that a potential GHG rate increase is evident, thus triggering further climate change study within the EIS, but must also include an analysis of climate change related to the undertaking in question.

B. Alternatives Analysis & Impact Assessment

Under EIA, agencies have general flexibility and discretion regarding final decisions, provided there is an appropriately responsible degree of environmental stewardship.¹⁹² While agencies should meet the broad environmental stewardship goals identified within an EIA statute, final EIA

192. *See* Dep't of Transp. v. Pub. Citizen, 541 U.S. 752, 756–57 (2004) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (“NEPA itself does not mandate particular results in order to accomplish these ends. Rather, NEPA imposes only procedural requirements on federal agencies with a particular focus on requiring agencies to undertake analyses of the environmental impact of their proposals and actions.”)).

products often balance multiple goals and may employ novel or situation-specific means to accomplish these goals. In short, the regulated community assists in writing their own outcomes.¹⁹³ This is in sharp contrast to more rigid, pollutant-specific legal strategies, which are often more focused on end-of-pipe emissions caps than situation-specific analysis and balanced design or decision-making.

Pollutant-specific laws, such as the Clean Air Act of 1990 in the United States, utilize a more traditional monitoring and enforcement method of oversight and may also be a potentially effective means to address climate change issues. However, these pollutant-specific laws often predate widespread recognition of climate change issues and may not specifically incorporate GHGs within their enumerated pollutants. While litigation is ongoing, it is possible that such laws will require additional legislative and political action to incorporate GHGs. These laws have also traditionally complimented EIA analysis, and as such are not necessarily contradictory or incompatible.

Furthermore, such laws may only regulate certain thresholds or categories of pollutant emissions. However, in the absence of more rigid end-of-pipe GHG emissions regulations, analysis of climate change under EIA may pursue and analyze a diverse menu of decision-making items. Agencies typically are required to analyze the consequences of a range of potential alternatives, including the “no action” alternative.¹⁹⁴ The “no action” alternative provides a useful opportunity to fully understand the actual rate fluctuations in GHG emissions. Decision-making as part of the alternatives analysis process can also incorporate the decision-making framework suggested by Working Group III of the Intergovernmental Panel on Climate Change in 2001, intended to aid the integration of climate change considerations into government decision-making, or the Group’s more recent 2007 guidance.¹⁹⁵ Climate change considerations need not be the ruling factor in selecting a proposed action or alternative, as EIA is most often a “balancing” statute in which a wide range of economic, social, and ecological impacts are weighed against each other.

193. *See id.* (discussing the requirement of an EIS).

194. *See generally* Matter of Jackson v. N.Y. State Urban Dev. Corp., 67 N.E.2d 429, 436 (N.Y. 1986) (“[A]gencies [have] considerable latitude evaluating environmental effects and choosing among alternatives.”).

195. UNEP & WMO, IPCC, *IPCC Fourth Assessment Report, Climate Change 2007: Mitigation (Summary for Policymakers)* 72 (Bert Metz et al. eds., 2007), available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-spm.pdf> [hereinafter *Mitigation*] (contribution of Working Group III).

C. Mitigation, Offsets, and Project Redesign

Offsets are a heavily-utilized method for mitigating GHG emissions. Under Kyoto, offsets typically include the funding of forestry or re-forestry projects at a rate by which the CO₂ in newly planted trees will offset emissions caused by existing or increased emissions. This means of “carbon sequestration” is performed on a strictly analytical basis through which the amount of CO₂ generated per acre of planting is matched up to anticipated emissions.¹⁹⁶ It is important to note, that as GHG emissions do not have localized impacts in the realm of climate change, these offsets need not be location-specific. Under Kyoto, mitigation funding of carbon sequestration projects is limited to Annex 2 developing nations.¹⁹⁷ However, these geographic conditions need not necessarily be imposed under an environmental information regime, particularly for a non-member of Kyoto.

A related means of offsetting mitigation is methane capture, under which methane gas is captured from waste sources, such as trash disposal sites or, potentially, agricultural facilities and is diverted for secondary purposes such as energy generation.¹⁹⁸ Additionally, offsets may be obtained by point sources that have taken steps to reduce GHG emissions below an industry standard. Kyoto has thus spurred the creation of an active international trading market in GHG offset and mitigation credits. Other means of offsetting also exist, but are not fully described herein. EIA can utilize both tradable offsetting credits, as well as direct funding of such projects.

Project redesign may lead to a sufficient reduction in GHG emissions. This mitigation analysis is most useful when applied to land use and development projects. Alterations in land use and/or project design may reduce GHG emissions. For example, the creation of residential communities proximate to commercial centers would likely reduce or eliminate otherwise lengthy automobile trips. This item could also include the funding or enhancement of transportation alternatives which reduce CO₂ emissions; for example, the external funding of low emissions busses, or the enhancement of an unmet public transportation need which would reduce automotive congestion.¹⁹⁹ Already, such needs are identifiable in urban areas under existing transportation plans. Also, similar redesign alternatives may encourage energy conservation as a mitigating factor. As

196. *Id.* at 67–68.

197. *Id.*

198. *Id.* at 49.

199. *Id.* at 366–68.

with all alternatives, it is also possible to introduce a strategic combination of alternatives.

The use of carbon neutral green energy alternatives is no longer a conjectural dream, but is a real alternative. Numerous energy programs provide end-user consumers with a green choice by which they can purchase energy from dedicated renewable or non-coal sources. The purchase functions much like an offset.²⁰⁰ The purchased energy from dedicated green sources is fed into the national or regional grid, even though electrons utilized at the end point may be from GHG emitters. However, like a forestry offset, the end result is identical as the project is responsible for reducing a specific amount of CO₂ emissions.²⁰¹

Finally, a wide variety of creative solutions could be employed as offsetting or mitigation. These creative solutions could include the funding of targeted professional seminars or educational opportunities which focus on climate change, increased funding for graduate research regarding climate change technology or management, or other alternative research and education projects. These solutions may be particularly appropriate when an agency is unable to identify a specific reliable increase in GHG emissions rate, but where a significant increase is verifiable. Such solutions must meet an honest test of good faith, but also evade a detailed description. Agencies may be able to define a wide range of alternative solutions by drawing upon their own resources and technical expertise.

The true genius behind EIA is that it allows agencies to define their own environmental strategy. EIA can serve as the definition for a standards-based approach to environmental law, through which participants are far more likely to implement solutions that they have helped devise. Thus, EIA erases much of the resentment triggered by traditional command and control legal methods which forsake flexibility or situational creativity for consistency.

By employing a standard 1:1 ratio of offsetting and mitigation projects to increased GHG emissions, an agency can be assured that its proposed action will not have a significant impact in regards to climate change issues.²⁰² The employment of this standard mitigation strategy with appropriate monitoring and implementation is unquestionable in its sufficiency, as the GHG footprint after the proposed action would be no greater than the one before it. In addition, this strategy is highly conducive to the increasingly popular use of pre-mitigated or conditional

200. *Id.* at 293–99.

201. *Id.*

202. ECON. & TRADE BRANCH, *supra* note 21, at 313.

environmental assessments in which agencies attempt to avoid a more intensive EIS by incorporating mitigation action measures during the initial description of the action.²⁰³ Mitigation through redesign, conservation or offsets can be easily integrated into these more basic and conditioned findings.

Finally, the GHG reduction goals established by the Kyoto Protocol need not filter down to the project-specific level. While a mitigation ratio greater than 1:1 may be employed with validity, not all nations are bound by the Kyoto goals, although they may have expressed general support of such reductions.²⁰⁴ Furthermore, attainment of the Kyoto goals is itself a national outcome, which blends emissions increases and decreases from multiple sources. It is only important that proposed action analyzed under EIA avoid significant environmental impacts *as compared to baseline conditions*, and must analyze their cumulative impact as a “threshold” rate of change which would impair other initiatives from having a meaningful impact on managing climate change.²⁰⁵

However, some projects or undertakings may be hard-pressed to identify and quantify a reasonable emissions figure. Without other action, such agencies and/or applicants run the risk of being taken to task over minor discrepancies in data or methodology assumptions. This may be particularly true of projects with indirect impacts. For example, a runway extension at a busy airport may substantially increase flights. However, it would be difficult or impossible to prove that this increase would result in a specific, predictable quantification of GHG emissions because the precise origin and length of such flights are not known. This unpredictability invites litigation challenging data methods. For projects in which the reasonable quantification of GHG emissions is not possible, an agency is free to substitute an alternative modeling method or simply make a finding of significance or non-significance without the benefit of a precise quantification. However, in so doing, an agency forsakes the numeric certainty offered by the earlier quantification model, and risks litigation if a proposed mitigation action is clearly unresponsive to the impact. It is important that EIA continue to offer agencies both discretion and flexibility in designing their own stewardship solutions. While undoubtedly many decision-makers will treat EIA like a rote exercise or litigation defense, it is equally probable that at least some decision-makers will utilize EIA to invent new solutions to climate change.

203. *Id.*

204. *Mitigation*, *supra* note 195, at 773–74.

205. ECON. & TRADE BRANCH, *supra* note 21, at 106.

D. EIA as a Tool to Evaluate Climate Change Impacts of a Project

The evolving science and complex ecosystems prevent specific or certain predictions. For example, a development project in a coastal area may be unable to state with certainty the precise impacts of sea level rise or associated flooding. For projects where impacts may pose a substantive change in the surrounding environment, potential climate change scenarios are best described in the affected environment baseline description and then analyzed in the decision-making portion of the EIA. Climate change impacts may best be discussed in other EIA topic areas, including economic impact or alternatives analysis. Due to the considerable judicial discretion typically afforded lead agencies during the EIA process, and the uncertainty of precise predictions, the level or methodology of EIA analysis of climate change impacts falls on agencies.

1. As Applied: Realistic Use of EIA to Address Climate Change

It is likely that much of the resistance to the use of EIA as a means to address climate change is the “shock of the new.”²⁰⁶ Administrative skepticism may arise because climate change is not localized and is unfamiliar to many EIA practitioners, not because of the goals of the application. However, with the development of case studies and technical guidance, such an application becomes little different than any other EIA study area. The following hypothetical examples, while only a cursory treatment of the subject, nonetheless demonstrate the relative ease in which the topic of climate change can be successfully integrated into EIA projects.

2. Large-Scale Urban/Suburban Commercial Development

An EIA study for large-scale urban or suburban development could readily incorporate climate change into its analysis. For example, a commercial development would substantially increase the number of automobile visits, presuming that the commercial development took place on either a “greenfield” or a site with a previous, less-intensive use. It is likely that an EIA for this project would analyze the impact of increased

206. The term “shock of the new” refers to initial confusion and social resistance regarding the modern art movement in the early to mid-twentieth century. The term was coined by cultural historian Robert Hughes during the 1970s in reference to both his documentaries and scholarship chronicling this phenomenon. See generally BBC Four, Documentaries, The Shock of the New Episode Guide, <http://www.bbc.co.uk/bbcfour/documentaries/features/shock-new-eps.shtml> (last visited Apr. 30, 2008).

Vehicle Miles Traveled (VMT).²⁰⁷ The VMT analysis can be used as a means to estimate the extent of GHG increases. Assuming that few or no GHG emissions were associated with the previously undeveloped parcel, it is likely that this project would have a substantial increase in the rate of GHG emissions. In addition, if the county where the project is located has a comprehensive plan that includes a broad statement on climate change, such an increase will frustrate local efforts to manage climate change. An EIA study undertaken by or on behalf of a developer will demonstrate a variety of environmental impacts often associated with new development—including the climate change impacts. Accordingly, the proposed project will have a significant cumulative impact; combined with other similar development actions across the world, it will contribute to a worsening of climate change.

One potential alternative or mitigation measure for new development is the construction of “mixed use developments” whereby both commercial and residential units are included in a consolidated area. Presumably this planning tool will lower the VMT and thereby reduce a development’s contribution to GHG emissions. Rather than risk stalling the project in a complex debate about climate impacts, the developer redesigns his final proposal to include “mixed use” construction, and thus mitigates the significant impact. The developer also finds this analysis useful in other EIA study categories, such as visual design.

3. Agency Regulatory Analysis

Assume a federal forestry agency under their rulemaking authority opens up certain tracts of land for sustainable timber harvest. Knowing that its actions will release a substantial amount of CO₂, the agency carefully undertakes an analysis of the rate of CO₂ release and recapture as part of its EIA study. The EIA study indicates that the rate at which the agency has defined timber harvesting and replenishment will have an increase in CO₂ recapture. Therefore, the agency concludes that the project will have no significant impact in regards to climate change. In meeting with environmental opponents of the rule, the agency is able to inform the environmentalists that they need not have concerns regarding climate change; the proposed project will not have a meaningful impact upon climate change. The minimal increase in GHG emissions will be more than

207. VMT is a predictive calculation factoring in square footage and category of commercial attractions, different attracted populations, and distance from the development.

compensated for by an unrelated state effort to utilize renewable wind energy.

4. Regional Transportation Improvement

A state transportation agency has decided to participate in the development of a large-scale infrastructure improvement to a medium-sized urban area. During its EIA study, the agency notes that the region is on the verge of becoming a non-attainment area under the Clean Air Act with regard to criteria pollutants related to automobiles. The agency uses the EIA process to examine multiple alternatives, ranging from the preferred alternative—a highway widening to reduce traffic congestion and idling emissions—to light rail and bus rapid transit. The EIA study concludes that the bus rapid transit option will be the most cost-effective means to improve traffic congestion and emissions. However, the study is reviewed by groups concerned about additional bus emissions. The EIA study also indicates that even though this is the most effective means of avoiding a non-attainment designation, there will still be a meaningful, cumulative rise in the rate of CO₂ emissions. Accordingly, the EIA employs a range of mitigation options, including a partial fleet of low-emissions busses, additional incentive funding for local governments to switch to low-emissions “hybrid” cars for municipal employees, and a small reforestation project in a former agricultural area elsewhere in the state. Together, these strategies ensure that the transportation project will move forward without frustrating national strategies to develop new technology to reduce GHG emissions; even though CO₂ emissions will rise, the significant impact has been both addressed and reduced.

E. Strategic Policy Behind EIA and Climate Change

EIA is most often applied to projects at the end of the decision pipeline, it has not successfully been applied at a broader policy level. As a reactive mechanism, it is unlikely to serve a primary role in addressing global climate change problems. However, the use of EIA to discuss climate change holds several strategic advantages, and should not continue to be ignored merely because it fails to present a systematic approach to GHGs.

EIA as applied to climate change is readily achievable. EIA was intended to address a broad array of environmental issues, few of which were explicitly defined at its creation.²⁰⁸ As a legal tool intended to induce a conflict-resolution process, rather than a specific technical limitation or

208. ECON. & TRADE BRANCH, *supra* note 21, at 103.

resource-specific outcome, EIA has the necessary flexibility to include climate change under its broad umbrella of environmental and social issues. The advantages in utilizing an existing legal framework to discuss climate change, at least as an interim strategy, are nearly obvious—a new legal framework subject to inevitable political compromise and judicial challenges. New legislation may be helpful as it can be closely tailored to address the unique challenges of climate change; however, such legislation is not required to introduce climate change into the federal legislative lexicon.

In addition, an EIA process which includes climate change is both compatible with future legislative initiatives, and also assists those initiatives by formally introducing climate change into government policy and decision-making. An EIA process that discusses climate change and affords agencies flexibility would fit in easily with future legal or regulatory initiatives for GHGs. The introduction and integration of GHG analysis would erode the opposition by the regulatory community. The EIA process is one which, while sometimes dreaded by sponsoring agencies or applicants, is familiar and more predictable than an unknown regulatory environment. As future restrictions are introduced which have firm caps and more specific procedures, these future regulations will buttress EIA's overarching framework of environmental stewardship.

The experiential opportunities afforded by a climate-change sensitive EIA process may help reformulate future, and more specific, climate change regulation. Once written, environmental laws may take on a life of their own and subsequent amendment may be difficult despite recognized flaws. The use of EIA to discuss climate change issues provides an overlooked regulatory proving ground. Even if it remains an imperfect process in its practice, it nonetheless offers “the art of the possible”²⁰⁹ as it can readily introduce GHG emissions into practical and project-specific decision-making.²¹⁰

One commentator notes that the EIA process “typically focuses slavishly on individual projects and thus shortchanges evaluation of cumulative impacts” and that such a “fragmented approach” would be unable to effectively address the “comprehensive evaluation” apparently

209. A phrase referring to political feasibility and the necessity of compromise generally attributed to the nineteenth-century Prussian statesman Otto von Bismark, who oversaw the modern unification of Germany. Columbia World of Quotations (1996), <http://www.bartleby.com/66/31/7331.html> [hereinafter Bismark] (last visited Apr. 30, 2008).

210. ECON. & TRADE BRANCH, *supra* note 21, at 103.

needed to solve the climate change puzzle.²¹¹ According to the commentator, should EIA documents even attempt to incorporate climate change concerns, the “the track record of environmental assessment is less than reassuring, even absent the complications posed by climate adaptation.”²¹² However, the fragmented approach of the EIA process, while unable to provide a single, unified analysis, is its greatest asset. A fragmented approach is redundant between multiple, concurrent projects thus ensuring that even if one analysis is flawed, that such flaws are limited only to a single EIA document. The global failure to develop a successful climate change tool is largely the result of a mismatch between “slavish” individual projects, which result in GHG increases and broad policy statements. Even if the EIA process has failed to protect the environment, its flaws are in its execution due to agencies’ willingness to use it as a legal defense, rather than as an active decision-making tool. However flawed the EIA process, it nonetheless can immediately address climate change on a project-specific basis without waiting for the slow wheels of diplomatic politics. In that sense, the application of climate change to the EIA process is truly “the art of the possible.”²¹³

CONCLUSION

A “Standards-Based” Approach to International Environmental Law

The calls of the Pacific island nation ambassadors before the United Nations Security Council did not go unnoticed. Five months later, on August 1, 2007, the United Nations General Assembly held for the first time an informal thematic debate on climate change. While many ambassadors presented statements expressing the need for GHG reductions, the debate was short on solutions or means of implementation. However, the Asian-African Legal Consultative Organization (AALCO), an NGO with permanent United Nations observer status, noted the urgent need to move beyond political rhetoric and toward domestic implementation of international agreements. Without such legal tools, climate change impacts will only worsen. Specifically, the AALCO noted the underutilized potential of EIA as a primary domestic tool to address climate change, stating that “from the perspective of intergenerational equity, this is a moral

211. Matthew D. Zinn, *Adapting to Climate Change: Environmental Law in a Warmer World*, 34 *ECOLOGY L.Q.* 61, 85 (2007).

212. *Id.*

213. Bismark, *supra* note 209.

as well as a financial, ecological or developmental matter.”²¹⁴ Without serious domestic implementation, climate change will continue to remain, in the words of Ambassador Colin Beck of the Solomon Islands, “a comet” discussed faithfully every few years, but lacking result-oriented action.²¹⁵

EIA is a broad problem-solving tool available to many governments around the world. By investigating and weighing a broad series of potential impacts, EIA can serve as an innovation lab and proving ground for new climate change strategies. EIA can draw on existing experience and guidance regarding the evaluation of climate change issues. EIA statutes are generally well-poised to evaluate complex and cumulative impacts. Local urban planners are just awakening to the linkage between localized laws or decision-tools (such as EIA, zoning codes, urban design, and building codes) and global climate change policy. While notable efforts have been made, local efforts are merely anecdotal barring some form of a global report or other information-sharing tool.²¹⁶

Both international experience and test applications evidence that the complex problem of climate change can be successfully broken down to much smaller pieces and analyzed in concert with other project considerations. EIA is limited as a tool to address climate change issues and its application is often frustrated by efforts to seize bureaucratic loopholes or short-circuit meaningful participation. It can only address new developments or proposed increases in GHG emissions rather than lowering existing levels. Despite its limitations, EIA has the potential to serve as an effective bridge between distant global aspirations and the local decisions needed to change theory into reality. As the bedrock of the development process, EIA can calm the simmering tension between the economic growth needed to support a burgeoning global population desperate to crawl out of the depths of poverty and the moral imperative of reduced GHG emissions.

The unraveling of international law from the knot of formal treaties into the existing laws and customs of domestic municipal governments, may yet prove to be the very answer to the complex problem of implementing

214. Nicholas A. Robinson, Legal Advisor, Statement at Informal Thematic Debate of U.N. General Assembly (Aug. 1, 2007), available at <http://digitalcommons.pace.edu/cgi/viewcontent.cgi?article=1404&context=lawfaculty>.

215. U.N. SCOR, 62d Sess., 5663d mtg. at 13, U.N. Doc. S/PV.5663 (Apr. 17, 2007).

216. Jim Hecimovich, *Britain Goes Into High Gear*, PLANNING, Sept. 2007, at 52–53. The Royal Town Planning Institute in England is planning a variety of measures to link climate change analysis into localized planning decisions. See also Frank et al., *The Urban Form and Climate Change Gamble*, PLANNING, Sept. 2007, at 18–23 (noting King County, Washington’s HealthScape project, a detailed technical study between land use patterns and GHG emissions “creating more neighborhoods like Queen Anne [a neighborhood where residents often walked or utilized mass transit] could have a tangible impact on carbon dioxide emissions and vehicle demand”).

multilateral environmental agreements. On an international level, it is very difficult to get 192 nations, with diverse viewpoints and strategic interests, to agree on specific action items that are theoretically binding. When agreement is achieved, it is often accomplished using very diluted or vague language, and it may be difficult to translate such broad and distant goals into local action. Even when specific obligations are detailed, as they were in the Kyoto Protocol, it is difficult to bridge the gap between a diplomat's assurance and the domestic compliance of parties whose interests were not represented in the crafting of the solution now imposed upon them. Traditional international law, which focuses on signed international agreements, may not necessarily be an effective avenue to pursue immediate climate change objectives. Therefore, it is useful to have a secondary or interim approach which utilizes an existing and familiar framework to address climate change questions.

A draft model United Nations General Assembly resolution, which is both weighty and symbolic, is included in Appendix II as an example of a way to both recognize global agreements, but seek unique, national approaches under a broad EIA umbrella. EIA offers a streamlined and sparse notion of international law, in which nations are able to agree upon overarching standards and draw upon local expertise to create a specialized approach to implementation. While the pursuit of a singular "Holy Grail"²¹⁷ global agreement is admirable, it ignores the persistent political reality that national interest in competitive economic development will serve as an incentive for poor implementation and enforcement of GHG reduction policies. Furthermore, the utilization of EIA facilitates the domestic implementation of international climate change agreements. It helps to achieve international goals in the context of local participation and decision-making, as well as ensures that population growth and development do not erode or completely contradict ongoing and future strategies to address climate change. Finally, the EIA process can respond and reflect future changes to both the regulatory and scientific treatment of climate change.

The underutilized potential of EIA to bridge international and local spheres has not gone entirely unnoticed. In 1998, the U.N. Environment Programme (UNEP) noted that EIA was a useful strategy to increase the involvement of local parties otherwise excluded from international decision-making, stating that "[f]urther consideration needs to be given to how cumulative, global and strategic environmental issues should be considered in an assessment of local projects, and how non-local

217. Monty Python and the Holy Grail, *supra* note 5.

stakeholders should be involved.”²¹⁸ UNEP further estimated that at least 100 nations had unilaterally adopted EIA regulations or laws.²¹⁹ Noting further that, in nations with a federal structure, many regions or municipalities had also adopted independent EIA structures; UNEP estimated the total global number of EIA programs to be at least 200.²²⁰ Recent trends over the past decade include a strong surge in EIA adoption by developing nations and the corporate adoption of EIA strategies within corporate environmental management systems.²²¹ Regrettably, little, if any, work has been accomplished to follow up the earlier 1998 UNEP study, and there is not a comprehensive list of EIA laws.

EIA has tremendous potential for reshaping global strategies for climate change. It may utilize existing laws or processes to allow local populations and regional government entities a foothold in global debates otherwise far removed. As evidence of its localized character, EIA need not rely upon back-room, high-level political deals to incorporate climate change, but only upon the will and demand of the civil society. EIA takes climate change debates out of the staid halls of diplomacy, and into the voices of the public citizenry and project designers, who together must decide by what means they will attempt to fulfill a growing generational debt.

218. UNEP, *EIA for Industry: STATUS REPORT ON UNEP TIE INITIATIVE TO IMPROVE INDUSTRIAL PROJECT PLANNING 18* (1999), available at <http://www.uneptie.org/pc/pc/tools/pdfs/EIA2-rpt.pdf>.

219. *Id.* at 5.

220. *Id.*

221. *Id.* at 6.

APPENDIX I

SEQRA Regulations Addition

The following italicized text represents proposed regulatory additions to SEQRA, the New York State EIA law; although climate change issues could be considered under the existing law, these additions provide more specific guidance for the consideration of GHG emissions.

§ 617.4 TYPE I ACTIONS

The purpose of the list of Type I actions in this section is to identify, for agencies, project sponsors and the public, those actions and projects that are more likely to require the preparation of an EIS than Unlisted actions. All agencies are subject to this Type I list.

The following actions are Type I if they are to be directly undertaken, funded or approved by an agency:

(10) any Unlisted action, that would produce at least 10,000 tons of unmitigated carbon dioxide emissions,¹ and that would exceed a 15% increase in greenhouse gas emissions rate, over a 10 year period, as compared to existing emissions levels associated with a no-action alternative (see section 617.9(b)(5)(v) of this Part); and inclusive of any Unlisted action which otherwise will lead to a significant increase in the rate of such emissions (see section 617.7(c)(1) of this Part);

§ 617.7 DETERMINING SIGNIFICANCE.

(c) Criteria for determining significance.

(1) To determine whether a proposed Type I or Unlisted action may have a significant adverse impact on the environment, the impacts that may be reasonably expected to result from the proposed action must be compared against the criteria in this subdivision. The following list is illustrative, not exhaustive. These criteria are considered indicators of significant adverse impacts on the environment:

1. Note that in its regulation of power plant emissions, the State of Massachusetts defines eligible offset projects as those which would produce at least 5000 tons of CO₂ over a ten year period. FINAL MODIFICATIONS TO 310 CMR 7.00, app. B(1)(e)(3), att. A (2006), available at <http://www.mass.gov/dep/air/laws/ghgappb.pdf>. In addition, per capita CO₂ emissions within the United States are estimated at approximately twenty-two tons per person; the global average is four tons per person. See JAMES D. KERSETTER, GREENHOUSE GAS EMISSION IN WASHINGTON STATE: SOURCES AND TRENDS (1999), available at <http://www.cted.wa.gov/energy/archive/papers/wa-ghg99.pdf>.

(xii) a substantial increase in the rate of greenhouse gas emissions, to the degree at which the rate of increase would impair the effectiveness of other climate change planning or regulatory initiatives, and would thus pose a cumulative and significant impact to the environment.

APPENDIX II

UNITED NATIONS DRAFT RESOLUTION

General Assembly Draft Resolution _____:
Mainstreaming Climate Change and Project Decision-making

The General Assembly,

Recalling its resolution 54/222 of 22 December 1999, its decision 55/443 of 20 December 2000 and its resolutions 56/199 of 21 December 2001, 57/257 of 20 December 2002, 58/243 of 23 December 2003 and 59/234 of 22 December 2004 and 60/197 of 22 December 2005, 61/201 of 20 December 2006, and other resolutions relating to the protection of the global climate for present and future generations of mankind, and *Recalling* Agenda 21 of the 1992 United Nations Conference on Environment and Development (Earth Summit) and the Espoo Convention on Transboundary Environmental Impact Assessment.

Recognizes the inherent responsibilities of each generation as trustee of the environment for succeeding generations; [Note – This statement comes directly from Section 101 of NEPA]

Recalling also the Johannesburg Declaration on Sustainable Development,¹ the Plan of Implementation of the World Summit on Sustainable Development (“Johannesburg Plan of Implementation”),² the Delhi Ministerial Declaration on Climate Change and Sustainable Development, adopted by the Conference of the Parties to the United Nations Framework Convention on Climate Change at its eighth session, held in New Delhi from 23 October to 1 November 2002,³ the outcome of the ninth session of the Conference of the Parties held in Milan, Italy, from 1 to 12 December 2003,⁴ the outcome of the tenth session of the Conference

1. Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August–4 September 2002, chap. I, resolution 1, U.N. Doc. A/Conf.199/20, *available at* http://www.unmillenniumproject.org/documents/131302_wssd_report_reissued.pdf.

2. *Id.* at resolution 2.

3. U.N. Framework Convention on Climate Change, U.N. Doc. FCCC/CP/2002/7/Add.1, decision 1/CP.8 (Mar. 28, 2003), *available at* <http://unfccc.int/resource/docs/cop8/07a01.pdf>.

4. U.N. Framework Convention on Climate Change, U.N. Doc. FCCC/CP/2003/6/Add.1 and 2 (Apr. 22, 2004), *available at* <http://unfccc.int/resource/docs/cop9/06a01.pdf>.

of the Parties, held in Buenos Aires from 6 to 18 December 2004,⁵ the outcomes of the eleventh session of the Conference of the Parties and the first session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol, both held in Montreal from 28 November to 10 December 2005 and outcomes of Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol, held in Nairobi from 6 November to 17 November 2006.

Recalling also the provisions of the United Nations Framework Convention on Climate Change,⁶ including the acknowledgement that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions,

Recognizing the widely-shared practices of Environmental Impact Assessment (EIA) as a domestic regulatory process which, on a programme- or project- specific basis, identifies potential significant environmental impacts and recognizes the balance of environmental stewardship with development goals, and *recognizing* that certain other laws, regulations or policies may encourage a similar decision-making process prior to certain government approvals;

Recognizing also that over 100 member nations, as well as international financial organizations, have unilaterally adopted and implemented laws, regulations or policies which promote or require the undertaking of EIA reports in relation to certain types of government actions, approvals, policies, programmes or public development projects, and *further recognizing* that certain other laws, regulations or policies encourage a similar decision-making process prior to certain localized or programmatic government approvals;

Remaining deeply concerned that all countries, in particular developing countries, including the least developed countries and small island developing states, face increased economic, political and social risks from the negative ecological effects of climate change;

Notes the effort of certain member states in the unilateral establishment of technical guidance or draft guidance regarding the use of EIA as a means of addressing climate change;

5. U.N. Framework Convention on Climate Change, U.N. Doc. FCCC/CP/2004/10/Add.1 and 2 (Apr. 19, 2005) available at <http://unfccc.int/resource/docs/cop10/10a01.pdf>.

6. United Nations Framework Convention on Climate Change, opened for signature May 9, 1992, 1771 U.N.T.S. 107 (entered into force Mar. 21, 1994).

OP1. *Invites* the Secretary General, including the joint efforts of the United Nations Environment Programme and the United Nations Development Programme, to report to the General Assembly at its sixty-fourth session, regarding the potential usefulness and feasibility of EIA, and similar land-use decision-making procedures, as a secondary means of addressing climate change issues, while also incorporating shared but differentiated responsibilities of developing nations;

OP2. *Invites* the Secretariat of the United Nations Framework Convention on Climate Change to participate in the creation of this report;

OP3. *Encourages* the participation of the relevant domestic agencies of all member nations with EIA laws, regulations or policies, or similar project-specific land-use decision-making procedures, to contribute to the development of the Secretary General's report;

OP4. *Encourages* the participation of intergovernmental organizations and relevant private-sector interests with interests and expertise in climate change issues in regards to the development of the Secretary General's report;

OP5. *Encourages* the participation of non-governmental and professional organizations, with special expertise in the conduct and application of domestic EIA laws and regulations, to contribute to the development of the Secretary General's report;

OP6. *Recognizes* that EIA is only one potential method by which to help manage future GHG emissions, that EIA is unable to address existing GHG levels, and that a variety of domestic and international solutions may be employed to address climate change;

OP7. *Urges* all member nations to continue progress in further defining international agreements, as well as domestic, regional and global strategies, which address climate change, and incorporate climate change into decision-making.

