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CLIMATE CHANGE UNDER NEPA: AVOIDING CURSORY CONSIDERATION OF GREENHOUSE GASES

AMY L. STEIN*

Neither the National Environmental Policy Act (“NEPA”) nor its implementing regulations require consideration of climate change in NEPA documentation. Yet an ever-growing body of NEPA case law related to climate change is making it increasingly difficult for a federal agency to avoid discussing the impacts of those emissions under NEPA in its Environmental Impact Statements (“EISs”).

Although consideration of climate change in NEPA documents sounds right in theory, within the current legal framework, the NEPA documents provide only lip service to the goals of NEPA without any meaningful consideration of climate change. An empirical evaluation of two years of selected EISs demonstrates that the degree of “consideration” is far from meaningful, an outcome that fails to reflect the purposes behind NEPA. As a result, the nation is left with more paperwork and more greenhouse gas emissions.

This Article concludes that inclusion of climate change in NEPA documentation is inevitable, but that within the current judicial interpretations of NEPA and the Administrative Procedure Act, litigation has reached its maximum effectiveness to elicit meaningful consideration of climate change. It makes recommendations for fortifying NEPA with concrete requirements to address this new challenge, including a recommendation that all but de minimis greenhouse gas emissions be considered significant under a NEPA analysis.

INTRODUCTION

The United States has no comprehensive federal law limiting the human sources of greenhouse gas (“GHG”) emissions

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now widely understood to be responsible for climate change.¹ Eight years of a Bush Administration reluctant to regulate carbon dioxide² and a year of an Obama Administration focused on addressing a historic recession and health care reform has pushed back progress on climate change legislation. Devoid of federal GHG regulation, environmental organizations have been working to find alternative approaches to regulate GHG emissions under existing environmental laws.³ Consistent with that approach, this Article focuses exclusively on challenges to environmental reviews required by NEPA.

NEPA, one of the nation's oldest environmental laws, forces agencies to consider the environmental impact of their proposed actions. Where an agency determines the impact to be significant, NEPA requires that agency to consider potential alternatives and mitigation measures to avoid or reduce the adverse environmental impact. Often, NEPA requires federal agencies to prepare a massive regulatory document entitled an Environmental Impact Statement ("EIS"), which assesses the impacts, alternatives, and potential mitigation of the proposed action. More often though, agencies prepare an abbreviated version of an EIS called an Environmental Assessment ("EA").⁴ Although the Supreme Court requires federal agencies to take a "hard look"⁵ at the environmental impacts of any proposed

1. The EPA Administrator has found that the current and projected concentrations of the mix of six key GHGs threaten the public health and welfare under its endangerment finding. The six GHGs are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). See Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496, 66,516 (Dec. 15, 2009) (to be codified at 40 C.F.R. ch. 1), available at <http://www.epa.gov/climatechange/endangerment/downloads/FinalFindings.pdf>.

2. See, e.g., Associated Press, *Administration Rejects Regulating Greenhouse Gases*, L.A. TIMES, July 12, 2008, <http://articles.latimes.com/2008/jul/12/nation/na-greenhouse12> (reporting that the Bush Administration rejected proposals from the United States Environmental Protection Agency ("EPA") to regulate GHGs); Felicity Barringer, *White House Refused to Open E-Mail on Pollutants*, N.Y. TIMES, June 25, 2008, at A15 (explaining that the Bush Administration directed employees to ignore e-mails from the EPA that called for regulation of GHGs).

3. See, e.g., Shi-Ling Hsu, *A Realistic Evaluation of Climate Change Litigation Through the Lens of a Hypothetical Lawsuit*, 79 U. COLO. L. REV. 701 (2008) (noting climate change can be challenged using a number of legal theories, including nuisance, preemption, and regulation as a pollutant under the Clean Air Act).

4. See, e.g., *supra* notes 2–3 and accompanying text; *infra* notes 5–34 and accompanying text.

5. *Kleppe v. Sierra Club*, 427 U.S. 390, 409 n.21 (1976) (citing *Natural Res. Def. Council v. Morton*, 458 F.2d 827, 838 (D.C. Cir. 1972)).

major federal agency action under NEPA,⁶ it does not require agencies to select the most “environmentally friendly” alternative or commit to any specific mitigation measures.⁷ In fact, while NEPA requires agencies “to consider and give effect to the environmental goals set forth in the Act [and] not just to file detailed impact studies which will fill governmental archives,”⁸ the agencies are largely free to pursue less environmentally protective alternatives so long as they have met their procedural obligations to consider the impacts.⁹

Despite these shortcomings, NEPA can serve an important informational role by influencing decision makers and informing the public about the choices agencies make. The Council on Environmental Quality (“CEQ”), the agency charged with implementing NEPA, explicitly provides that NEPA is not to be used to justify decisions after the fact. Rather, NEPA is designed to ensure that agencies incorporate the information gathered into their decision-making processes before committing federal resources to a given project.¹⁰

Neither NEPA nor its implementing regulations explicitly require consideration of climate change in NEPA documentation.¹¹ Yet a small but ever-growing body of NEPA case law is making it increasingly difficult for federal agencies to undertake a major GHG-related action without discussing the projected impacts of the emissions under NEPA.¹²

Although consideration of climate change in NEPA documents might sound right in theory, the current legal framework fails to realize NEPA’s informational benefits for three reasons. First, agencies have little to no guidance on when or how to consider the impacts of GHGs in NEPA documents.¹³ Second, the Supreme Court has interpreted away NEPA’s sub-

6. 42 U.S.C. § 4332(2)(C) (2006). Major federal agency actions can include private actions funded by the federal government. See 40 C.F.R. § 1508.18 (2009).

7. See *infra* notes 122–25 and accompanying text.

8. *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1215 (9th Cir. 2008).

9. See *infra* notes 122–25 and accompanying text.

10. 40 C.F.R. § 1502.5 (2009) (“The statement shall be prepared early enough so that it can serve practically as an important contribution to the decisionmaking process and will not be used to rationalize or justify decisions already made.”).

11. See National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4347 (2006).

12. See, e.g., *Ctr. for Biological Diversity*, 538 F.3d at 1217 (requiring consideration of climate change in an EIS).

13. See *infra* notes 53–57 and accompanying text.

tantive requirements.¹⁴ And third, lower courts have accorded the agencies great deference in reviewing the adequacy of their NEPA documentation.¹⁵ As a result, the latest efforts to require consideration of climate change in NEPA documents have merely resulted in more paperwork without any meaningful consideration of climate change.

A proposal to construct a new coal-fired power plant in Nevada illustrates the ineffectiveness of requiring climate change in NEPA documents under the current regime. The proposed facility would include a 750-megawatt generation unit and a plant-cooling system, a thirty-one-mile-long railroad line, coal-handling and processing facilities, power transmission lines, interconnection facilities, a water-supply system, an access road to the plant site, waste-management operation facilities, and other ancillary facilities.¹⁶ In the required NEPA documentation, the lead federal agency, the U.S. Bureau of Land Management (“BLM”) included a discussion of global climate change and noted that combustion of all fossil fuels and related processes result in emissions of carbon dioxide. The agency proceeded to indicate that carbon dioxide is “widely considered” to be a GHG whose emissions are “suspected” of playing a role in the observed global warming.¹⁷ The agency even estimated that the plant is expected to produce over seven million metric tons of carbon dioxide emissions per year.¹⁸

These actions all appear consistent with a nation giving serious consideration to legislation that would reduce GHG emissions by 80 percent below 1990 levels by 2050.¹⁹ Yet the BLM failed to require or even consider mitigation of any of the seven million annual metric tons of carbon dioxide emissions in the EIS. The agency went through the motions of considering climate change, but the outcome failed to reflect NEPA’s pur-

14. See *infra* notes 114–25 and accompanying text.

15. See *infra* notes 126–36 and accompanying text.

16. BUREAU OF LAND MGMT., U.S. DEPT OF INTERIOR, TOQUOP ENERGY PROJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT ES-5 (2007) [hereinafter TOQUOP DRAFT EIS].

17. *Id.* at 4-63.

18. *Id.* app. at D-32. Seven million metric tons of CO₂ is equivalent to annual GHG emissions from 1,214,205 passenger vehicles. U.S. Env’tl. Prot. Agency, Greenhouse Gas Equivalencies Calculator (Nov. 2009), <http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results>.

19. See American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009) (requiring a decrease of 83 percent below 2005 greenhouse gas emission levels, roughly equivalent to 80 percent below 1990 levels).

poses. As a result, the United States is left with more paperwork and more GHG emissions.

Climate change scholarship has not given much attention to the specific degree of climate change consideration presented in NEPA documentation.²⁰ This Article fills that gap with an empirical evaluation of BLM EISs most relevant to climate change over the 2007–2008 period. Of the thirty-five BLM EISs issued during those two years that evaluate coal, oil, gas, or mining activities, thirteen fail to contain any mention of climate change or GHGs. Seven EISs contain nothing more than stock language about climate change or a cursory mention that GHG emissions are negligible. Fifteen EISs quantify GHG emissions, but only three of these²¹ discuss GHG mitigation. This assessment suggests an outcome NEPA cannot possibly have intended: sporadic and superficial climate change analysis.

The BLM's deficient consideration of climate change in NEPA documents cannot be reconciled with the nation's current drive towards GHG regulation.²² Climate change experts report that the earth's GHG emissions must decrease by more than 80 percent from 1990 levels by 2050 to avoid potentially catastrophic climate change consequences.²³ Proposed legislation in the United States has echoed these ambitious goals.²⁴

20. See, e.g., Michael B. Gerrard, *Climate Change and the Environmental Impact Review Process*, NAT. RESOURCES & ENV'T, Winter 2008, at 20, 20 (noting that in one study, only ten EISs mentioned climate change and none provided "especially useful information").

21. The three EISs that include mitigation are the two proposals subject to California's stricter NEPA equivalent, California Environmental Quality Act ("CEQA"), *infra* notes 206, 210, and one proposal to construct a new coal plant, *infra* note 199.

22. EPA has taken a number of steps towards the regulation of GHGs under the authority provided by the Clean Air Act, including finalizing a mandatory GHG Reporting Rule and finding that carbon dioxide endangers human health. See Mandatory Reporting of Greenhouse Gases, 74 Fed. Reg. 56,260 (Oct. 30, 2009) (to be codified at 40 C.F.R. pts. 86, 87, 89 et al.); Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009) (to be codified at 40 C.F.R. ch. 1), available at <http://www.epa.gov/climatechange/endangerment/downloads/FinalFindings.pdf>.

23. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE: SUMMARY FOR POLICYMAKERS (2007), <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-spm.pdf> (detailing the scientific consensus on the reductions needed to stabilize atmospheric levels of GHGs at 450 ppm by mid-century).

24. See American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009) (requiring a decrease of 83 percent below 2005 GHG emission levels,

Implementing such an initiative will have dramatic impacts on all sectors of the economy, and President Obama's commitment to address climate change, even in a dire economic climate, underscores the importance of this initiative.²⁵ Yet under NEPA, agencies can and are taking action that is *increasing* the amount of GHG emissions by millions of tons each year.²⁶

This Article argues that federal intervention is needed to produce a meaningful consideration of climate change. The Article concludes that external pressures will render consideration of climate change in NEPA documentation inevitable, but that within the current judicial interpretations of NEPA and the Administrative Procedure Act ("APA"), litigation has reached its maximum effectiveness to elicit meaningful consideration of climate change. The Article makes recommendations for fortifying NEPA with concrete requirements to address this new challenge. More meaningful consideration of climate change can be achieved on two levels. First, by providing clear and consistent thresholds about the significance of climate change impacts, agencies will be able to realize the informational potential of NEPA. Agencies would no longer be able to avoid a more meaningful consideration of lower-GHG-emitting alternatives or mitigation measures by summarily determining the climate change impacts are insignificant. Time and energy that has been spent litigating that issue could be redirected to GHG mitigation.

Second, absent a congressional amendment that requires mitigation of GHG emissions, more meaningful consideration of climate change may be achieved by more strongly "encouraging" mitigation. Faced with a lowered significance threshold, agencies may have more incentive to tailor their proposed actions to reduce their impacts on climate change to avoid completion of an EIS. Alternatively, the EPA may be able to increase the use of its EIS rating system and referral authority

roughly equivalent to 80 percent below 1990 levels); Lieberman-Warner Climate Security Act of 2008, S. 3036, 110th Cong. (2008).

25. See Change.gov, Agenda: Energy & Environment, The Obama-Biden Plan, http://www.change.gov/agenda/energy_and_environment_agenda/ (last visited Nov. 6, 2009).

26. See, e.g., BUREAU OF LAND MGMT., U.S. DEPT OF THE INTERIOR, DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE ELY ENERGY CENTER 4-64 (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/nv/field_offices/ely_field_office/energy_projects/ely_energy_center0/eec_deis_texts.Par.70744.File.dat/08%20DEIS%20EEC%20Chapter%204.pdf [hereinafter ELY DRAFT EIS] (estimating 10.6 million tons of CO₂ annually from a proposed energy facility at Ely Energy Center).

under section 309 of the Clean Air Act (“CAA”) to elicit more substantive results.

Part I of this Article provides some necessary background on NEPA and the EIS/EA process. Part II suggests that the inclusion of climate change considerations in NEPA documentation is necessary, but acknowledges that agencies lack authoritative instruction to incorporate climate change impacts into NEPA documentation. Part III contends that courts are hamstrung from enforcing NEPA in the way it was intended because (1) Supreme Court precedent indicates that NEPA is purely procedural, and (2) the use of a narrow and deferential “arbitrary and capricious” standard when reviewing agency action. As a result of these constraints, agencies are raising the bar on climate change in NEPA documents only high enough to hurdle their NEPA obligations. Consequently, instead of developing alternatives or mitigation measures to address GHG emissions, the agencies may be merely insulating themselves from litigation.

Part IV asserts that the lack of direction for the agencies on climate change, combined with the extreme judicial deference, creates inefficient and ineffective consideration of climate change in NEPA documents. Part V suggests that, in the absence of federal climate change legislation, the best way to elicit meaningful consideration of climate change is through adoption of four critical changes: (1) eliminate the use of emissions comparisons as a significance threshold, (2) acknowledge GHG emissions as a proxy for consideration of climate change impacts, (3) establish a two-pronged significance threshold for climate change impacts, triggered by either a quantitative level of GHG emissions or an activity with high-GHG-emitting potential, and (4) encourage applicants to offset increases in GHG emissions. While federal regulation of GHGs may be a reality in the future, this Article argues that NEPA analyses can provide a valuable tool for the present evaluation and mitigation of GHGs.

I. THE FUNDAMENTALS: NEPA AND RELEVANT REGULATIONS

This Part provides general background on NEPA and its regulations. It briefly discusses NEPA’s broad policy purposes, the factors an agency needs to assess to determine whether to conduct an EIS or an EA, and CEQ’s limited discussion of climate change consideration in NEPA documents.

A. NEPA Background

NEPA is one of the nation's oldest environmental statutes, enacted in 1969 to "use all practicable means and measures . . . to create and maintain conditions under which man and nature can exist in productive harmony"²⁷ and "to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man."²⁸ Some scholars have suggested that this provision can be read to infuse NEPA with a sustainability mandate—"to maintain" conditions in a way that balances the needs of both people and nature.²⁹ Congress attempted to implement these substantive mandates through procedural "action-forcing"³⁰ requirements. These requirements mandate that agencies develop an EIS—a detailed statement concerning the impacts, adverse environmental effects, and alternatives to all proposed "major Federal actions significantly affecting the quality of the human environment."³¹

To determine whether a proposed action's environmental impact is sufficiently "significant" to necessitate the production of an EIS, agencies usually prepare an EA³²—a more concise and less expensive document that contains a brief discussion of the need for the proposed action, its environmental impact, and possible alternatives to the action.³³ The EA is used to either determine whether to prepare a more robust, detailed, and expensive EIS or to issue a finding of no significant impact ("FONSI"), a decision that ends the NEPA assessment process.³⁴

27. 42 U.S.C. § 4331(a) (2006).

28. *Id.* § 4321.

29. *See id.* § 4331(a); Charmian Barton, *Aiming at the Target: Achieving the Objects of Sustainable Development in Agency Decision*, 13 GEO. INT'L ENVTL. L. REV. 837, 882 (2001) (noting that upon review of "the goals and principles encapsulated within section 101 of NEPA, the notions of intergenerational equity and sustainable development are clearly apparent").

30. 40 C.F.R. § 1502.1 (2009).

31. 42 U.S.C. § 4332(2)(C). The Ninth Circuit has required even less to trigger an EIS: whether there is a "substantial question whether an action 'may have a significant effect' on the environment." *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1185 (9th Cir. 2008).

32. Where an agency predetermines that a project's environmental impact will exceed the significance threshold, CEQ regulations provide that an EA is not necessary and the agency may simply complete an EIS. *See* 40 C.F.R. § 1501.3(a) (2009).

33. *Id.* § 1508.9.

34. *Id.* § 1501.4(c)–(e).

The lead agency for the proposed project is charged with deciding whether an impact is “significant.” The CEQ, the executive office charged with implementing NEPA, defines “significantly” by requiring consideration of both “context” and “intensity.”³⁵ Context refers to the setting of the proposed action, and intensity refers to the severity of the impact.³⁶ The CEQ lists a number of factors to consider when evaluating intensity, including: (1) “[i]mpacts that may be both beneficial and adverse,” (2) “[t]he degree to which the proposed action affects public health or safety,” (3) “[t]he degree to which the effects . . . are likely to be highly controversial,” (4) “[t]he degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks,” (5) “[t]he degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration,” (6) “[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts,” and (7) “[w]hether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.”³⁷

Although the Ninth Circuit has held that an action may be significant if only one of these factors is met,³⁸ merely because a proposed action satisfies one or more of CEQ’s factors does not necessarily mean that an EIS is required.³⁹ In fact, for approximately 99 percent of NEPA assessments, agencies satisfy NEPA’s obligations without preparing an EIS.⁴⁰ And given the cost and complexity of an EIS, agencies have a strong incentive

35. *Id.* § 1508.27.

36. *Id.* § 1508.27(a)–(b).

37. *Id.* § 1508.27(b).

38. *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1220 (9th Cir. 2008) (citing *Ocean Advocates v. U.S. Army Corps of Eng’rs*, 361 F.3d 1108, 1125 (9th Cir. 2004)).

39. THE NEPA LITIGATION GUIDE 24 (Karin P. Sheldon & Mark Squillace eds., 1999) (citing Valerie M. Fogelman, *Threshold Determinations Under the National Environmental Policy Act*, 15 B.C. ENVTL. AFF. L. REV. 59, 86–99 (1987)).

40. See, e.g., Bradford C. Mank, *Standing and Global Warming: Is Injury to All Injury to None?*, 35 ENVTL. L. 1, 46 (2005) (citing Bradley C. Karkkainen, *Toward a Smarter NEPA: Monitoring and Managing Government’s Environmental Performance*, 102 COLUM. L. REV. 903, 909–10 (2002) (“Federal agencies annually conduct approximately 50,000 EAs leading to [FONSI]s; in contrast, only about 500 EISs are produced each year.”)). Although it is difficult to confirm the number of annual environmental assessments, the number of EISs has remained relatively constant in recent years. EIS totals are as follows: 542 in 2006, 557 in 2007, and 543 in 2008. NEPA.net, Environmental Impact Statements (EIS), <http://ceq.hss.doe.gov/nepa/nepanet.htm> (last visited Oct. 30, 2009).

to satisfy NEPA with an EA. Even when a project is expected to have a significant impact on the environment, agencies may include mitigation measures in the proposal to reduce the impact below the significance threshold, thereby avoiding completion of a full EIS. The CEQ⁴¹ and courts⁴² have affirmed this strategy, referred to as a “mitigated FONSI.” While technically appropriate, the manner in which agencies use, manage, and enforce mitigation commitments is critical to NEPA compliance.⁴³ In turn, courts have held that “[i]f an agency declines to prepare an EIS, it must supply a ‘convincing statement of reasons’ to explain why a project’s impacts are insignificant.”⁴⁴

NEPA provides that the alternatives analysis required of an EIS is the “heart of the environmental impact statement.”⁴⁵ Accordingly, the CEQ’s regulations require agencies to include six elements in an alternatives analysis: (1) a rigorous explanation and evaluation of all reasonable alternatives, (2) substantial treatment of each so reviewers may compare the alternatives, (3) reasonable alternatives outside the jurisdiction of the

41. See *Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations*, 46 Fed. Reg. 18,026, 18,038 (Mar. 23, 1981). The document explains:

Mitigation measures may be relied upon to make a finding of no significant impact only if they are imposed by statute or regulation, or submitted by an applicant or agency as part of the original proposal. As a general rule, the regulations contemplate that agencies should use a broad approach in defining significance and should not rely on the possibility of mitigation as an excuse to avoid the EIS requirement. Sections 1508.8, 1508.27.

If a proposal appears to have adverse effects which would be significant, and certain mitigation measures are then developed during the scoping or EA stages, the existence of such *possible* mitigation does not obviate the need for an EIS.

Id. The D.C. Circuit Court of Appeals has given little deference to this CEQ informal guidance document and has allowed mitigated FONSI’s even where mitigation measures were not part of the original proposal. See *Cabinet Mountains Wilderness/Scotchman’s Peak Grizzly Bears v. Peterson*, 685 F.2d 678, 682–83 (D.C. Cir. 1982).

42. See, e.g., *Spiller v. White*, 352 F.3d 235, 239 (5th Cir. 2003) (upholding an EA and “mitigated FONSI” issued by the EPA and DOT for a proposed pipeline project where the applicant agreed to employ certain mitigation measures that would lower the otherwise significant impacts of the pipeline to a level deemed insignificant by the EPA and the DOT).

43. See, e.g., *infra* notes 208, 213 and accompanying text (noting mitigation measures in Records of Decision).

44. *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1220 (9th Cir. 2008) (citing *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 2001)).

45. 40 C.F.R. § 1502.14 (2009).

lead agency, (4) the no action alternative, (5) the agency's preferred alternative, and (6) appropriate mitigation measures not included in the proposed action or alternative.⁴⁶ The CEQ regulations define mitigation to include the following:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (e) Compensating for the impact by replacing or providing substitute resources or environments.⁴⁷

For each alternative, the agency also must assess the direct, indirect, and cumulative impacts of the proposed action.⁴⁸ The CEQ regulations define the cumulative impact as

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.⁴⁹

The agency must then prepare a Record of Decision ("ROD") that includes all alternatives considered by the agency and demonstrates "whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not."⁵⁰ Where there is incomplete or unavailable information to fully evaluate the reasonably foreseeable significant effects on the environment,

46. *Id.* § 1502.14; *see also* 42 U.S.C. § 4332(2)(C)(iii) (2006).

47. 40 C.F.R. § 1508.20.

48. *Id.* § 1508.25(c).

49. *Id.* § 1508.7.

50. *Id.* § 1505.2(c).

the agency must indicate such findings.⁵¹ If the means to obtain that information is not known, the agency must include (1) a statement that the information is unavailable, (2) its relevance, (3) a summary of credible scientific evidence relevant to evaluating the impacts, and (4) the agency's evaluation of such impacts based on accepted scientific or theoretical methods.⁵²

B. NEPA and Climate Change

Neither NEPA nor its regulations specifically mention GHG emissions or climate change. But the CEQ issued two documents in 1997 that indicate that agencies should consider climate change in NEPA documentation. In a 1997 draft guidance document specific to consideration of climate change in NEPA documents, the CEQ identified climate change as a "reasonably foreseeable" impact of greenhouse gas emissions, bringing it within the scope of a NEPA analysis.⁵³ The draft guidance states that federal agencies must determine whether their actions contribute to GHG accumulation, as well as whether the effects on the environment of global climate change might affect federal projects.⁵⁴ The draft guidance also suggests that the cumulative effects of GHG emissions may be best addressed on a programmatic level rather than in individual projects.⁵⁵ Unfortunately, the CEQ never finalized the guidance document.

Around the same time, however, the CEQ did finalize a more general guidance document that concerned the considera-

51. *Id.* § 1502.22.

52. *Id.* § 1502.22(b).

53. KATHLEEN A. MCGINTY, COUNCIL ON ENVTL. QUALITY, GUIDANCE REGARDING CONSIDERATION OF GLOBAL CLIMATIC CHANGE IN ENVIRONMENTAL DOCUMENTS PREPARED PURSUANT TO THE NATIONAL ENVIRONMENTAL POLICY ACT 4 (1997), available at <http://www.mms.gov/eppd/compliance/reports/ceqme mo.pdf>.

54. *Id.* While this Article focuses only on the effects of federal actions on climate change, analyses of climate change's impacts on proposed projects also are starting to be seen in NEPA documentation. See South Bay Salt Pond Restoration Project, Climate Change & Sea Level Rise, www.southbayrestoration.org/climate (last visited Oct. 24, 2009) (noting that a consideration of sea level rises from climate change was included in the project's Final EIS/R).

55. MCGINTY, *supra* note 53, at 6 (noting long range energy, transportation, and forest management projects as prime programmatic examples where greenhouse gases emissions could be considered).

tion of cumulative environmental effects.⁵⁶ In that document, the CEQ notes the following:

[T]he importance of acid rain, climate change, and other cumulative effects problems has resulted in many efforts to undertake and improve the analysis of cumulative effects.

....

Determining the threshold beyond which cumulative effects significantly degrade a resource, ecosystem, and human community is often problematic. Without a definitive threshold, the NEPA practitioner should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant.⁵⁷

These guidance documents, though important, have done little to resolve the ambiguities surrounding NEPA's climate change obligations.

II. INCLUSION OF CLIMATE CHANGE IN NEPA DOCUMENTATION IS INEVITABLE

Despite the CEQ's guidance, agencies have utilized a variety of theories to avoid meaningful consideration of climate change in various NEPA documents. These theories range from questioning the "significance" of an individual project's impact on global climate change to relying on the lack of direct federal regulation of GHGs.⁵⁸ Courts originally gave credence to some of these arguments, including a D.C. Circuit opinion regarding the National Highway Traffic Safety Administration's ("NHTSA") corporate average fuel economy ("CAFE") standard for model year 1989 passenger cars. In *City of Los Angeles v. National Highway Traffic Safety Administration*, the D.C. Circuit held that the agency's decision to establish a less stringent fuel economy standard did not require an EIS.⁵⁹ The

56. COUNCIL ON ENVTL. QUALITY, CONSIDERING CUMULATIVE EFFECTS UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT (1997), available at <http://ceq.hss.doe.gov/NEPA/ccenepa/ccenepa.htm>.

57. *Id.* at 7. The other mention of global climate change in this final guidance is as an example of a "triggers and thresholds" cumulative effect. *Id.* at 9.

58. See *infra* notes 136, 239 and accompanying text.

59. 912 F.2d 478, 490 (D.C. Cir. 1990) (holding that the agency's one-mile per gallon change in the CAFE standard at issue was not so significant as to require

court did not doubt that climate change was within the parameters of NEPA, but found that the impact of the agency's actions on GHGs fell below a threshold of significance, and that the agency's decision to forego an EIS was therefore lawful.⁶⁰

Over the next twenty years, environmental groups made great inroads toward pressuring agencies to incorporate consideration of climate change into NEPA documents. These groups have been reinvigorated by the Intergovernmental Panel on Climate Change's ("IPCC") most recent report stating that "[m]ost of the observed increase in global average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic GHG concentrations."⁶¹

This Part will discuss how both the judicial system and internal agency guidance suggest that federal agencies will be hard-pressed to continue to ignore climate change in NEPA documents. Plaintiffs have used the judicial system to effectively mandate a "discussion" of climate change in NEPA documentation. What was a novel concept a decade ago is now becoming a more standard component in NEPA documents.⁶² Prior to 2006, only ten EISs considered climate change.⁶³ As of 2007, it was considered in over one hundred EAs.⁶⁴ Moreover, a number of agencies have jumped on the bandwagon with a burst of activity surrounding informal guidance on climate change and NEPA documents.⁶⁵ Some agencies have specifically acknowledged that climate change should be considered in

an environmental impact statement), *overruled on other grounds* by Fla. Audubon Soc. v. Bentsen, 94 F.3d 658 (D.C. Cir. 1996).

60. *Id.* at 490.

61. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT, SUMMARY FOR POLICYMAKERS 5 (2007) (emphasis in original), available at http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf.

62. See *infra* Part IV.B (noting that twenty-two of thirty-five recent BLM EISs mention climate change).

63. David J. Hayes, *Navigating Climate Change Issues in a Dynamic Legal Environment*, in ALI-ABA COURSE OF STUDY MATERIALS, GLOBAL WARMING: CLIMATE CHANGE AND THE LAW 9, 18 (2008).

64. *Id.* Despite this change, the total number of EISs filed has remained relatively constant between 2006 and 2008. EIS totals are as follows: 542 in 2006, 557 in 2007, and 543 in 2008. NEPanet, *supra* note 40.

65. See, e.g., *infra* notes 97-101; W. ENVTL. LAW CTR., PROTEST OF BLM'S APRIL 8, 2008 OIL & GAS LEASE SALE 17 (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/mt/blm_programs/energy/oil_and_gas/leasing/protests.Par.48470.File.dat/WLECprotest.pdf (noting that the National Park Service and the Minerals Management Service have both acknowledged addressing climate change in NEPA documents).

their NEPA documents,⁶⁶ and the EPA has been injecting itself into the comment process, instructing a number of agencies on how to better incorporate climate change into their decision-making processes.⁶⁷ Viewed in combination, these activities indicate that, even in the absence of federal climate change legislation, inclusion of climate change in NEPA documentation is now unavoidable.⁶⁸

A. Courts Are Requiring a Discussion of Climate Change

NEPA litigation over climate change can be divided into a mixture of three main types of challenges: (1) challenges to the agency's decision that the impact of a proposed major federal agency action is not significant (and thus a challenge to the decision not to prepare an EIS), (2) challenges to the adequacy of the EIS in the cumulative impacts section, or (3) challenges to the adequacy of the EIS in the alternatives and mitigation section. Although plaintiffs have lost some climate change challenges due to a lack of standing,⁶⁹ courts have tended to be sympathetic to arguments that climate change should be "considered" in NEPA documentation.

In 2003, two courts found that an agency unlawfully failed to sufficiently consider climate change in its NEPA documentation. In *Border Power Plant Working Group v. Department of Energy*, the Department of Energy ("DOE") argued that it was not required to consider emissions of carbon dioxide for a proposed construction of transmission lines to carry electricity from natural-gas power plants in Mexico to users in California.⁷⁰ The DOE relied in part on the fact that the EPA had not designated carbon dioxide as a "criteria pollutant" and in part on a belief that the agency was not required to evaluate "ques-

66. See *infra* notes 97–101 and accompanying text.

67. See *infra* notes 104–07 and accompanying text.

68. Kevin T. Haroff & Katherine Kirwan Moore, *Global Climate Change and the National Environmental Policy Act*, 42 U.S.F. L. REV. 155, 182 (2007) ("Under the appropriate circumstances, there is little doubt . . . the impact of greenhouse gas emissions on climate change is an issue properly within the scope of NEPA's environmental-review requirements.").

69. The majority of courts that have not required an agency to consider climate change rely on standing-based theories that are not related to climate change. See, e.g., *Appalachian Voices v. Bodman*, 587 F. Supp. 2d 79 (D.D.C. 2008) (rejecting a NEPA challenge to Treasury's allocation of tax credits to coal-fired power plants based on a lack of standing).

70. 260 F. Supp. 2d 997, 1028 (S.D. Cal. 2003) (holding the agency's actions were unlawful).

tionable effects.”⁷¹ The District Court for the Southern District of California rejected these arguments, noting that carbon dioxide is a pollutant emitted by a natural gas turbine, that it is a greenhouse gas, and that the agency failed to provide any authority demonstrating that the agency need not disclose and analyze these emissions merely because carbon dioxide is a non-criteria pollutant.⁷² The court held the EA’s failure to disclose and analyze the significance of carbon dioxide emissions was arbitrary and capricious.⁷³

That same year, the Eighth Circuit made a similar ruling in *Mid States Coalition for Progress v. Surface Transportation Board*, where plaintiffs challenged the construction of a rail line to transport coal to power plants.⁷⁴ There, the agency asserted in its EIS that “[b]ecause the 1990 Clean Air Act Amendments mandate reductions in pollutant emissions . . . an assumption of SEA’s [(the Surface Transportation Board Environmental Section)] analysis was that emissions will definitely fall to the mandated level, producing whatever effect the emissions will have on global warming.”⁷⁵ The court rejected this assumption, noting that “it tells the decision-maker nothing about how this project will affect pollutants not subject to the statutory cap. For the most part, SEA has completely ignored the effects of increased coal consumption”⁷⁶ The court rejected the agency’s attempts to argue that the effects of climate change were too speculative for analysis and suggested computer modeling that could be used.⁷⁷

Petitioners’ efforts to obtain consideration of climate change in NEPA documents gained momentum with the Supreme Court’s 2007 decision in *Massachusetts v. Environmental Protection Agency*.⁷⁸ In that decision, the Supreme Court declared that “the harms associated with climate change are serious and well recognized” and that the most common GHG, carbon dioxide, is an air pollutant subject to regulation under the CAA.⁷⁹ The Court held that the EPA has the authority to

71. *Id.*

72. *Id.*

73. *Id.* at 1029.

74. 345 F.3d 520, 550 (8th Cir. 2003).

75. *Id.* (first and second alterations in original) (internal quotation marks omitted) (quoting the agency’s Final Environmental Impact Statement at 10-2).

76. *Id.* at 550.

77. *Id.* at 548–50.

78. 549 U.S. 497 (2007).

79. *Id.* at 499.

regulate GHG emissions from motor vehicles if it makes a judgment that such emissions contribute to climate change.⁸⁰ Efforts to require consideration of climate change in NEPA documents will be strengthened by the Obama Administration's response to the Supreme Court's decision in *Massachusetts v. EPA*. Taking one more step toward regulation of GHGs, the EPA released an Advance Notice of Proposed Rulemaking to implement the Supreme Court's decision in *Massachusetts v. EPA*, as well as an endangerment finding that the current and projected mix of GHG emissions from motor vehicles threatens the public health and welfare.⁸¹

Over fifteen years after the D.C. Circuit's opinion in *Los Angeles v. National Highway Transportation Safety Administration* regarding CAFE standards, the Ninth Circuit visited a similar issue and reached a drastically different result. In one of the more significant NEPA-related climate change opinions, *Center for Biological Diversity v. National Highway Transportation Safety Administration*, the Ninth Circuit raised the bar for agencies' consideration of climate change in NEPA documents.⁸² NHTSA had proposed more stringent CAFE standards for light duty vehicles, model years 2008–2011, quantified GHG emissions from the proposed action in an EA, determined that the action did not meet the significance threshold required for an EIS, and issued a FONSI.⁸³ The Ninth Circuit vehemently rejected this argument, holding that NHTSA's EA was inadequate because it failed to evaluate the incremental impacts GHG emissions would have on climate change.⁸⁴ Even though the heightened fuel economy standard was expected to result in a minimal decrease in carbon dioxide emissions, the court affirmed that “[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct.”⁸⁵

80. *Id.* at 532–33.

81. Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 Fed. Reg. 44,353 (proposed July 30, 2008) (to be codified at 40 C.F.R. ch. 1); Env'tl. Prot. Agency, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, *available at* <http://www.epa.gov/climatechange/endangerment/downloads/FinalFindings.pdf> (signed Dec. 7, 2009) (to be codified at 40 C.F.R. ch. 1).

82. 538 F.3d 1172 (9th Cir. 2008).

83. *Id.* at 1184–93.

84. *Id.* at 1216.

85. *Id.* at 1217.

Two key concepts can be gleaned from this landmark case. First, the Ninth Circuit clarified that NEPA requires more than just a quantification of emissions. Even though NHTSA quantified emissions, the court held that the EA's cumulative impacts analysis was inadequate because NHTSA failed to discuss "*actual* environmental effects resulting from those emissions or place those emissions in context of other CAFE rulemakings."⁸⁶ Second, the court noted that the agency failed "to explain the benchmark for its determination of insignificance" in relation to global warming and held that "NHTSA's bald conclusion that the mere magnitude of the percentage increase is enough to alleviate its burden of conducting a more thorough investigation cannot carry the day."⁸⁷ The court acknowledged "[t]he fact that climate change is largely a global phenomenon that includes actions that are outside of [the agency's] control . . . does not release the agency from the duty of assessing the effects of *its* actions on global warming within the context of other actions that also affect global warming."⁸⁸ The court found that climate change met both the context and intensity requirements of the CEQ regulations for significance, and held that NHTSA's FONSI was unjustified.⁸⁹

Although the Ninth Circuit initially required NHTSA to prepare a full EIS, as a result of a petition for rehearing, the court vacated its earlier opinion and reissued a substantially similar opinion that now remands the case to NHTSA with instructions to provide either an EIS *or* a revised EA correcting the deficiencies noted by the court.⁹⁰ With this decision, the Ninth Circuit raised the stakes for agencies in their determination of whether and how to incorporate climate change.⁹¹

Similar proceedings suggest that the litigation over the inclusion of climate change in NEPA documents is not likely to

86. *Id.* at 1216.

87. *Id.* at 1224–25.

88. *Id.* at 1217 (alteration in original).

89. *Id.* at 1219–24.

90. *Id.* at 1180.

91. Notably, NHTSA has issued a Final EIS for CAFE standards for model years 2011 to 2015 that contains an extensive analysis of climate change. NAT'L HIGHWAY TRANSP. SAFETY ADMIN., FINAL ENVIRONMENTAL IMPACT STATEMENT: CORPORATE AVERAGE FUEL ECONOMY STANDARDS, PASSENGER CARS AND LIGHT TRUCKS, MODEL YEARS 2011–2015 (2008), *available at* <http://www.nhtsa.dot.gov/> (follow "Fuel Economy Standards (CAFE)" hyperlink under "Quick Clicks," then follow hyperlink for "Final Environmental Impact Statement (Download as a Full PDF or By Chapters)" under "Average Fuel Economy Standards, Passenger Cars and Light Trucks, MY 2011–2015").

end. For instance, environmental groups have filed suit against the U.S. Forest Service and Department of the Interior for approving an expansion of the West Elk coal mine in Colorado without adequately considering climate change in the EIS for the project.⁹² To address safety concerns, the methane in the mine would need to be vented to the ambient air. Yet the BLM's EIS fails to contain information on the amount of methane, a potent GHG, expected to be released.⁹³ The complaint alleges three common NEPA violations: (1) failure to consider alternatives to methane venting, (2) failure to mitigate the impacts of methane venting, and (3) failure to consider the cumulative impacts of methane venting on climate change.⁹⁴

A coalition of environmental groups has also "filed four separate administrative legal challenges against BLM oil and gas lease sales in Colorado, New Mexico, Montana, and North Dakota."⁹⁵ The environmental groups allege that the BLM violated NEPA by failing to "adequately analyze GHG emissions from oil and gas activities that may occur on the leases offered for sale," and that before it offers the leases, the "BLM must analyze these GHG emissions within the context of potential effects on climate change and global warming."⁹⁶

92. Complaint for Declaratory and Injunctive Relief and Petition for Review of Agency Action at 3–5, 19, *Wildearth Guardians v. U.S. Forest Serv.*, No. 08-cv-02167 (D. Colo. Oct. 7, 2008), available at http://www.wildearthguardians.org/Portals/0/downloads/lawsuit_west-elk-coal-mine_10_08.pdf.

93. Letter from Kerrigan G. Clough, Deputy Reg'l Adm'r, U.S. Env'tl. Prot. Agency, to Charles Richmond, Forest Supervisor, Grand Mesa, Uncompaghre, and Gunnison Nat'l Forests 2 (June 1, 2007), available at <http://climate.alston.com/files/docs/EPA%20Region%208%20letter%20on%20Methane%20Releases.pdf> (regarding the "Draft Environmental Impact Statement, Deer Creek Shaft and E Seam Methane Drainage Well Project, Gunnison County, Colorado, CEQ #20070104").

94. Complaint for Declaratory and Injunctive Relief and Petition for Review of Agency Action at 17–19, *Wildearth Guardians v. U.S. Forest Serv.*, No. 08-cv-02167 (D. Colo. Oct. 7, 2008). The Governor of Colorado recently issued an Executive Order that sets out measures to reduce emissions of greenhouse gases by 20 percent from 2005 levels by 2020. See GOVERNOR BILL RITTER, JR., COLORADO CLIMATE ACTION PLAN: A STRATEGY TO ADDRESS GLOBAL WARMING 10 (2007), available at http://www.colorado.gov/energy/in/uploaded_pdf/ColoradoClimateActionPlan_001.pdf.

95. Bret Sumner et al., Fulbright Western Lands & Energy Monthly Update: Recent Legal Challenges against BLM Lease Sales Focus on Greenhouse Gas Emissions, Global Warming, and Climate Change (June 2008), http://www.fulbright.com/index.cfm?fuseaction=publications.detail&pub_id=3505&site_id=941&detail=yes. "To date, this coalition has filed challenges against the following BLM lease sales: the April 8 and June 17 sales for Montana and North Dakota; the April 16 sale for New Mexico; and, the May 8 sale for Colorado." *Id.*

96. *Id.*

Together, these cases are pressuring agencies to consider climate change impacts at two key stages in the NEPA process: (1) in the determination of whether climate change impacts are sufficient to warrant an EIS and (2) in the analysis of alternatives, cumulative impacts, and mitigation in the EIS.

B. Agencies Are Starting to Acknowledge That Climate Change Impacts Should Be Considered in NEPA Documents

In light of these cases, climate change is now receiving increased attention among agencies subject to NEPA. A number of agencies echo the recent court cases, acknowledging that climate change considerations should be included as a cumulative effect in NEPA documents. For instance, the DOE staff has publicly agreed with the IPCC's 1995 report and the CEQ's main premise in 1997, that "global climate change was a 'reasonably foreseeable' impact of greenhouse gas emissions in the context of NEPA."⁹⁷ Similarly, the Minerals Management Service ("MMS") within the U.S. Department of Interior stated in a report discussing the future EIS for the Outer Continental Shelf that the 2007–2012 EIS must consider the cumulative effects of climate change. The MMS explained that there is a "growing consensus that climate change is occurring" and has measurable effects that are particularly observable in Alaska, the site of its project.⁹⁸ A number of other agencies have held meetings specific to the consideration of climate change in NEPA documents,⁹⁹ and some have even developed internal task forces to address climate change generally.¹⁰⁰ Agencies also have acknowledged the concrete benefits in GHG emission reductions that can occur through evaluation of mitigation measures. For instance, the DOE staff noted that "the NEPA

97. U.S. DEP'T OF ENERGY, NATIONAL ENVIRONMENTAL POLICY ACT LESSONS LEARNED: QUARTERLY REPORT, FOURTH QUARTER FY 2007, at 4 (2007), available at http://www.gc.energy.gov/NEPA/documents/LLQR_Dec_2007.pdf.

98. MINERALS MGMT. SERV., U.S. DEP'T OF THE INTERIOR, DRAFT PROPOSED PROGRAM OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROGRAM 2007–2012 59 (2006), available at <http://www.mms.gov/5-year/pdfs/dpp2007-2012.pdf>.

99. *E.g.*, Climate Change and the BLM, <http://gf.state.wy.us/downloads/pdf/climatechangeworkshop/Climate%20Change%20and%20the%20BLM.pdf> (last visited Oct. 25, 2009); SUSAN JOHNSON, NAT'L PARK SERV., CLIMATE CHANGE AND THE NATIONAL PARK SERVICE (2008), <http://gf.state.wy.us/downloads/pdf/climatechangeworkshop/Climate%20Change%20and%20the%20National%20Park%20Service.pdf>.

100. See *infra* note 155 and accompanying text.

process can be used to explore options to reduce net emissions of greenhouse gases through analyses of alternatives and mitigation measures.”¹⁰¹

The EPA also takes an active role in policing the agencies subject to NEPA and their consideration of climate change. section 309 of the CAA provides that “[t]he Administrator shall review and comment in writing on the environmental impact of any matter relating to duties and responsibilities granted pursuant to this chapter or other provisions of the authority of the Administrator.”¹⁰² In 1984, the EPA issued its policy document for reviewing an agency’s NEPA assessment, noting the EPA’s authority to do so under both the CAA and NEPA.¹⁰³

The EPA’s obligations under section 309 include reviewing an agency’s NEPA assessment related to climate change. For example, the EPA commented on the climate change inadequacies of the BLM West Elk Mine expansion proposal. The EPA took issue with the BLM’s failure to consider methane venting and recommended that the final EIS (1) identify the magnitude of the methane emissions, and (2) discuss alternatives for allowing the methane to vent directly to the atmosphere.¹⁰⁴ The EPA also noted that the deficiency was of particular concern because the West Elk Mine had previously reported high levels of methane vented to the atmosphere.¹⁰⁵ Similarly, the EPA commented on the Toquop project in Nevada, a proposal to construct a 750 megawatt coal-fired power plant.¹⁰⁶ The EPA informed the BLM that it should include a comparison of the project’s annual GHG emissions to annual emissions from “other existing and reasonably foreseeable future projects,” as well

101. U.S. DEP’T OF ENERGY, *supra* note 97, at 4.

102. Clean Air Act, 42 U.S.C § 7609(a) (2006).

103. U.S. ENVTL. PROT. AGENCY, POLICY AND PROCEDURES FOR THE REVIEW OF FEDERAL ACTIONS IMPACTING THE ENVIRONMENT 4 (1984), *available at* http://www.epa.gov/compliance/resources/policies/nepa/nepa_policies_procedures.pdf (“EPA has general statutory authority under the National Environmental Policy Act of 1969 and the Council on Environmental Quality’s implementing regulations, and has specific authority and responsibility under section 309 of the Clean Air Act to conduct such reviews, comment in writing, and make those comments available to the public.”). *See generally* U.S. ENVTL. PROT. AGENCY, EPA 315-R-99-002, CONSIDERATION OF CUMULATIVE IMPACTS IN EPA REVIEW OF NEPA DOCUMENTS (1999), *available at* <http://www.epa.gov/compliance/resources/policies/nepa/cumulative.pdf>.

104. Letter from Kerrigan G. Clough to Charles Richmond, *supra* note 93, at 1.

105. *Id.* at 2 (noting that approximately 8.2 billion cubic feet of methane had been vented in 2005).

106. TOQUOP DRAFT EIS, *supra* note 16, at ES-5.

as “estimated annual [GHG] emissions at a regional, national, and global scale.”¹⁰⁷

Despite growing acknowledgement amongst the agencies and the external litigation pressures, it is still unclear how agencies should effectively incorporate climate change into NEPA documentation. Even those agencies striving to address climate change in NEPA documents are uncertain how to do so. The CEQ has failed to give any specific guidance on the issue, leaving the agencies to make these determinations in a vacuum.

III. REVIEWING COURTS ARE HAMSTRUNG BY NEPA’S PROCEDURAL INTERPRETATION AND THE HIGH LEVEL OF DEFERENCE ACCORDED AGENCY ACTION UNDER THE ARBITRARY AND CAPRICIOUS STANDARD

In a number of ways, plaintiffs’ efforts to require consideration of climate change in NEPA documents can be viewed as a success. Litigation has raised the profile of the issue, increasing awareness among both federal agencies and the judiciary. Case law is starting to frame some parameters of what is expected of agencies with regard to climate change. And it is becoming more standard for agencies to include a consideration of climate change in NEPA documents. Such lawsuits have even caused some companies to reconsider, delay, or cancel proposed projects in the face of a legal battle.¹⁰⁸

Such litigation, however, appears to be reaching its maximum effectiveness due to two long-standing constraints. The first is the Supreme Court’s interpretation of NEPA as a purely procedural statute.¹⁰⁹ A series of Supreme Court opinions

107. Letter from Nova Blazej, Manager, Evtl. Review Office, U.S. Evtl. Prot. Agency, to Jane Peterson, Project Manager/Energy, Bureau of Land Mgmt. 11–12 (Dec. 14, 2007), available at <http://epa.gov/region09/nepa/letters/toquop-energy-project-DEIS.pdf> (regarding the “Draft Environmental Impact Statement for the Toquop Energy Project, Lincoln County, Nevada [CEQ# 20070421]”).

108. In December 2008, Dynegy CEO Bruce Williamson announced that the company was “reevaluating” its role in developing new power plants, including the White Pine power project. Williamson cited the tightening credit markets and difficulty in permitting new coal plants as reasons for reconsidering its involvement in the siting, permitting, financing, and construction of several new projects. *Dynegy to Rethink New Coal-Fired Power Projects*, REUTERS, Dec. 11, 2008, <http://www.reuters.com/article/marketsNews/idUSN1140631120081211>. See *infra* note 204 and accompanying text (discussing the White Pine project).

109. See, e.g., Jose L. Fernandez, *Global Warming Legislation: Putting the Carbon Genie Back in the Bottle*, 42 SYRACUSE L. REV. 1095, 1105–07 (1991) (“The

indicate that the Court does not interpret NEPA to have any substantive force.¹¹⁰ The Court has explicitly held that agencies cannot be required to implement mitigation measures, even where the proposed action was found to have adverse environmental impacts.¹¹¹ A number of scholars have disputed this interpretation over the years,¹¹² but neither Congress nor the CEQ has acted to amend NEPA or clarify its substantive role. The second constraint is the deferential standard of review of agency action for NEPA actions. Using an “arbitrary and capricious” standard to review agency NEPA documentation, agencies are easily able to manipulate their analyses to meet the procedural requirements while simultaneously avoiding any substantive requirements.¹¹³

A reviewing court can only go so far within these two constraints. Together, they have helped to foster NEPA climate change documentation that merely pays lip service to the purposes of the statute.

A. *Review of Climate Change Consideration is Constrained by the Supreme Court’s Interpretation of NEPA as a Purely Procedural Statute*

A number of early Supreme Court decisions set the tone for the last thirty years of NEPA jurisprudence. In one of the first cases,¹¹⁴ *Kleppe v. Sierra Club*, the Court rejected environmentalists’ attempts to require a regionwide EIS for the

lack of a substantive requirement insulates the agency from meaningful judicial review of its decision to proceed with an action.”).

110. See *infra* notes 114–21 and accompanying text.

111. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352–53 (1989).

112. See, e.g., Harvey Bartlett, *Is NEPA Substantive Review Extinct, or Merely Hibernating? Resurrecting NEPA Section 102(1)*, 13 TUL. ENVTL. L.J. 411, 415–47 (2000); *infra* note 257 and accompanying text.

113. Matthew J. Lindstrom, *Procedures Without Purpose: The Withering Away of the National Environmental Policy Act’s Substantive Law*, 20 J. LAND RESOURCES & ENVTL. L. 245, 262 (2000) (“[I]t is hardly surprising that many agencies have tailored their decision-making to meet only NEPA’s procedural steps in spite of its substantive obligations.”); see also Jason J. Czarnezki, *Revisiting the Tense Relationship Between the U.S. Supreme Court, Administrative Procedure, and the National Environmental Policy Act*, 25 STAN. ENVTL. L.J. 3 (2006).

114. An earlier Supreme Court decision held that “NEPA does create a discrete procedural obligation on Government agencies to give written consideration of environmental issues in connection with certain major federal actions and a right of action in adversely affected parties to enforce that obligation.” *Aberdeen & Rockfish R.R. v. Students Challenging Regulatory Agency Procedures (S.C.R.A.P.)*, 422 U.S. 289, 319 (1975).

development of coal reserves in the Northern Great Plains.¹¹⁵ In a footnote, the Court stated that “[n]either the statute nor its legislative history contemplates that a court should substitute its judgment for that of the agency as to the environmental consequences of its actions [I]t cannot ‘interject itself within the area of discretion of the executive as to the choice of the action to be taken.’ ”¹¹⁶ Two years later, in *Vermont Yankee Nuclear Power Corp. v. National Resources Defense Council*, the Court rejected environmentalists’ attempts to require the Atomic Energy Commission to more fully consider environmental issues in its approval of a nuclear reactor.¹¹⁷ The Court held that, while NEPA established “significant substantive goals for the Nation,” it imposes duties upon agencies that are “essentially procedural.”¹¹⁸ Two years later, the Court reinforced this holding in *Strycker’s Bay Neighborhood Council, Inc. v. Karlen*, when it rejected an argument that the Department of Housing and Urban Development (“HUD”) was required to give environmental factors determinative weight in rendering HUD decisions to construct low-income housing.¹¹⁹ The Court rejected the Second Circuit’s finding that “consideration is not an end in itself,” and affirmed *Vermont Yankee’s* conclusion that an agency need not “elevate environmental concerns over other appropriate considerations” in selecting its course of action.¹²⁰ The Court reasoned that, “once an agency has made a decision subject to NEPA’s procedural requirements, the only role for a court is to insure that the agency has considered the environmental consequences.”¹²¹

This strictly procedural interpretation has resulted in the Court refusing to impose mitigation requirements on agencies, even where adverse environmental effects have been demonstrated. In *Robertson v. Methow Valley Citizens Council*, a citizens group challenged the Forest Service’s EIS for issuance of a special use permit for development and operation of a ski

115. 427 U.S. 390, 394 (1976).

116. *Id.* at 410 n.21 (quoting *Natural Res. Def. Council v. Morton*, 458 F.2d 827, 838 (D.C. Cir. 1972)) (citing *Scenic Hudson Pres. Conference v. Federal Power Comm’n*, 453 F.2d 463, 481 (2d Cir. 1971)).

117. *Vt. Yankee Nuclear Power Corp. v. Natural Res. Def. Council*, 435 U.S. 519, 525 (1978).

118. *Id.* at 558.

119. *Strycker’s Bay Neighborhood Council, Inc. v. Karlen*, 444 U.S. 223, 227 (1980) (per curiam).

120. *Id.* (internal quotation marks omitted).

121. *Id.*

resort.¹²² The Ninth Circuit had held that “[s]ince the EIS made it clear that commercial development in the Methow Valley will result in violations of state air-quality standards unless effective mitigation measures are put in place . . . the Forest Service had an affirmative duty to ‘develop the necessary mitigation measures *before* the permit [was] granted.’ ”¹²³ The Court reversed, holding that, although mitigation must be “discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated,” it would be “inconsistent with NEPA’s reliance on procedural mechanisms . . . to demand the presence of a fully developed plan that will mitigate environmental harm before an agency can act.”¹²⁴ The Court made a definitive statement on the purely procedural purposes of NEPA that has held firm to this day:

[I]t is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process. If the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs. . . . Other statutes may impose substantive environmental obligations on federal agencies, but NEPA merely prohibits uninformed—rather than unwise—agency action.¹²⁵

This line of Supreme Court jurisprudence limits the ability of plaintiffs to elicit anything from lead agencies more meaningful than compliance with NEPA’s procedural mechanisms. As a result, even if an agency discloses that a proposed project will emit a significant amount of GHG emissions, it is free to proceed with project approval without any mitigation of those emissions or fear of adverse legal action.

122. 490 U.S. 332 (1989). In a companion case issued at the same time, *Marsh v. Oregon Natural Resources Council*, the Court applied the “arbitrary and capricious” standard, rejecting environmentalists’ attempts to require the Army Corps of Engineers to prepare a supplemental EIS for the construction of a new dam. 490 U.S. 360, 375 (1989).

123. *Robertson*, 490 U.S. at 347 (quoting *Methow Valley Citizens Council v. Reg’l Forester*, 833 F.2d 810, 819 (9th Cir. 1987)).

124. *Id.* at 352–53.

125. *Id.* at 350–51 (citations omitted). See also 5 U.S.C. § 706(2)(A) (2006) (prescribing that courts should review and set aside federal agency actions that are “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law”).

*B. The Arbitrary and Capricious Standard of Review
Further Constrains Judicial Review of Climate Change
Consideration*

The Supreme Court has held that judicial review of an agency's decision under NEPA is governed by the APA's "arbitrary and capricious" standard.¹²⁶ The APA requires a court to set aside agency action if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."¹²⁷ The scope of review is narrow, but the agency must articulate a satisfactory explanation and reasoned basis for its action.¹²⁸ The Supreme Court has held that agencies are required to take a "hard look" at the environmental effects of their proposed action, requiring them to clearly explain what factors they considered in the decision-making process and the weight given to those factors.¹²⁹ Accordingly, an agency rule can be found arbitrary and capricious if "the agency . . . entirely failed to consider an important aspect of the problem [or] offered an explanation for its decision that runs counter to the evidence before the agency."¹³⁰ The rationale behind this deference lies in the belief that, where an analysis requires a high level of technical expertise, a court must defer to "the informed discretion of the responsible federal agencies."¹³¹

This degree of deference has led reviewing courts to uphold NEPA documentation and disregard the validity of the agency's climate change assessments so long as an agency has "checked the box" and discussed climate change. This is exemplified in the results of the two 2003 cases mentioned earlier: *Border Power Plant Working Group v. Department of Energy*,¹³² and *Mid States Coalition for Progress v. Surface Transportation Board*.¹³³ In both cases, the reviewing court found the agencies' actions were arbitrary and capricious under the APA, in part because the NEPA documentation failed to consider

126. *Marsh*, 490 U.S. at 361.

127. *Citizens to Pres. Overton Park, Inc. v. Volpe*, 401 U.S. 402, 403 (1971); *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1193 (9th Cir. 2008).

128. *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

129. *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976).

130. *Ctr. for Biological Diversity*, 538 F.3d at 1193 (quoting *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43).

131. *Marsh*, 490 U.S. at 377 (citing *Kleppe*, 427 U.S. at 412).

132. 260 F. Supp. 2d 997 (S.D. Cal. 2003).

133. 345 F.3d 520 (8th Cir. 2003).

climate change.¹³⁴ As such, the courts demanded that the agencies conduct additional analyses.¹³⁵ Both agencies, however, responded with an EIS that “discussed” the GHG emissions and summarily found them to be “negligible”¹³⁶ and “small,”¹³⁷ respectively. Put simply, the resulting analyses from the agencies did little to advance any real reductions in the impact of GHGs, yet both were upheld.¹³⁸

It is possible that the rationale behind the “hard look” doctrine does not apply with equal force to an agency’s action with respect to climate change. *Kleppe’s* initial admonition that a court should not “interject itself within the area of discretion of

134. *Border Power*, 260 F. Supp. 2d at 1028–29; *Mid States*, 345 F.3d at 550 (“[I]t would be irresponsible for the Board to approve a project of this scope without first examining the effects that may occur as a result of the reasonably foreseeable increase in coal consumption.”). The court in *Border Power* also held that it “need not resolve disagreements among scientists as to methodology or to decide whether the method employed by an agency in its analysis is the best available.” 260 F. Supp. 2d at 1021–22.

135. See *Border Power*, 260 F. Supp. 2d at 1028–29; *Mid States*, 345 F.3d at 548–50.

136. The DOE’s resulting EIS merely stated that “an analysis was conducted that focused on a comparison between global and U.S. emissions and the total emissions from the no action and proposed action alternatives.” U.S. DEP’T OF ENERGY, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE IMPERIAL-MEXICALI 230-KV TRANSMISSION LINES 4-58 (2004), available at http://web.ead.anl.gov/bajatermoeis/documents/finaeis/docs/Chapter_4.pdf. The DOE determined that the carbon dioxide emissions from the preferred alternative would constitute 0.088 percent of U.S. emissions and 0.023 percent of global emissions and found that “[t]he expected impacts to global climate change would be negligible.” *Id.* at 4-59.

137. In *Mid States*, the Surface Transportation Board modeled carbon dioxide on a national and regional level and determined that “‘the impacts of this project on coal consumption and resulting air emissions would be small’ on a national and regional basis and that any potential local air quality impacts were ‘speculative’ and ‘ultimately unforeseeable.’” *Mayo Found. v. Surface Transp. Bd.*, 472 F.3d 545, 556 (8th Cir. 2006) (quoting *Dakota, Minn. & E. R.R. Corp. Construction into the Powder River Basin*, S.T.B. Finance Docket No. 33407, 2006 WL 383507, at *12 (S.T.B. Feb. 13, 2006)). The Board determined that carbon dioxide emissions associated with the increased coal would be less than 1 percent and therefore that additional mitigating conditions on the project were unnecessary. *Id.* at 555–56.

138. *Border Power Plant Working Group v. Dep’t of Energy*, 467 F. Supp. 2d 1040, 1070–71 (S.D. Cal. 2006); *Mayo Found.*, 472 F.3d at 556; see also *Seattle Audubon Soc’y v. Lyons*, 871 F. Supp. 1291, 1324 (W.D. Wash. 1994) (holding that the Forest Service’s final supplemental EIS sufficiently discussed the impacts on climate at length); *Assoc. of Pub. Agency Customers, Inc. v. Bonneville Power Admin.*, 126 F.3d 1158, 1187 (9th Cir. 1997) (holding that the EIS “sufficiently considered” global warming implications where there was only a table in the study that included carbon dioxide input of increased power purchaser operations).

the executive as to the choice of the action to be taken”¹³⁹ seems to ignore the fact that the agencies addressing this problem possess diverse areas of expertise and are largely untrained in matters specific to climate change.¹⁴⁰ In fact, a search of all EISs explicitly referencing coal, oil, or gas in their titles for 2008 resulted in thirteen different agencies, ranging from the Bureau of Indian Affairs to the National Park Service.¹⁴¹ Unlike deference to the EPA on environmental issues or deference to the Federal Energy Regulatory Commission on energy issues, the courts defer climate change analysis to agencies that lack the expertise or guidance to make definitive judgments about climate change impacts.

IV. CURSORY CONSIDERATION OF CLIMATE CHANGE IN NEPA DOCUMENTATION

Armed with knowledge of these constraints on reviewing courts, agencies are able to avoid the “hard look” required by NEPA by providing a “discussion” of climate change instead of an actual “consideration” of climate change. Acting without any definitive guidance, the agencies and applicants can spend millions of dollars trying to satisfy their obligations under NEPA.¹⁴² Under the current framework, the resulting NEPA documents are of questionable utility.

This Part tests this theory by analyzing a sample of recent EISs to assess (1) whether an agency discussed climate change

139. *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976) (quoting *Natural Res. Def. Council v. Morton*, 458 F.2d 827, 838 (1972)).

140. Similarly, in *Marsh v. Oregon Natural Resources Council*, the Court based its decision, in part, on the fact that the question presented for review—whether new fishing and soil survey information was sufficient to require the filing of a supplemental EIS—was “a factual dispute the resolution of which implicates substantial agency expertise.” 490 U.S. 360, 376 (1989); *see also* U.S. FOREST SERV., U.S. DEPT OF AGRIC., DEER CREEK SHAFT AND E SEAM METHANE DRAINAGE WELLS PROJECT: FINAL ENVIRONMENTAL IMPACT STATEMENT 191 (2007) (“The Forest Service does not measure global warming . . .”).

141. U.S. Envtl. Prot. Agency, National Environmental Policy Act (NEPA), Environmental Impact Statement (EIS) Database Search, [http://yosemite.epa.gov/oeca/webeis.nsf/viAllByDate?SearchView&Query=\(“coal”OR“oil”OR“gas”\)AND\(\[CEQ_FR_Date\]>=01/01/2008\)AND\(\[CEQ_FR_Date\]<=12/31/2008\)&SearchOrder=4&SearchMax=&SearchWV=false&SearchFuzzy=false&Start=1&SearchMax=0](http://yosemite.epa.gov/oeca/webeis.nsf/viAllByDate?SearchView&Query=(“coal”OR“oil”OR“gas”)AND([CEQ_FR_Date]>=01/01/2008)AND([CEQ_FR_Date]<=12/31/2008)&SearchOrder=4&SearchMax=&SearchWV=false&SearchFuzzy=false&Start=1&SearchMax=0) (last visited Nov. 11, 2009).

142. *See, e.g.*, William M. Cohen, *Judicial Perspectives on Connected Actions and Cumulative and Synergistic Impacts Under NEPA*, SH055 ALL-ABA 39 (2003) (noting that the National Park Service’s compliance with NEPA’s EIS requirement for mining plans took about five years and five million dollars to complete).

in an EIS, (2) whether the climate change assessment in the EIS was cursory or meaningful, and (3) the usefulness of current methods to address climate change. The selected EISs, conducted by BLM, covered proposed actions with high-GHG-emitting potential—those where one would most expect to see a true consideration of the impacts of climate change. And the EISs were conducted by the BLM, an agency that has substantial experience with climate change-related activities and one that has made public commitments to address climate change.¹⁴³ The following Sections explain the basis for the EIS sample and the method for categorizing the thirty-five EISs in the sample. Based on this empirical evaluation, this Part demonstrates that there is not a rational organizing principle for when an agency includes climate change in an EIS. In fact, a number of the EISs under review cover major federal actions that almost certainly should include an assessment of climate change, yet fail to do so. Consequently, even for those projects most likely to have impacts on GHGs, some agencies seem to have failed to consistently and thoroughly consider climate change.

A. *Basis for EIS Sample Selection*

EISs¹⁴⁴ from the two recent years from the BLM were selected from a two-year sample review period (2007–2008).¹⁴⁵

143. See *infra* note 155 and accompanying text.

144. EISs were evaluated instead of EAs because EISs are the more detailed of the two NEPA documents and are more readily available in the EPA database. It is worth noting, however, that the BLM EAs demonstrate a similar lack of attention to climate change issues. On April 2, 2007, the BLM issued an EA for the Hanna Draw Coalbed Natural Gas Project, which consists of construction, drilling, completion, production, and eventual reclamation of fifteen additional coalbed natural gas well locations without any mention of climate change. See BUREAU OF LAND MGMT., ENVIRONMENTAL ASSESSMENT FOR THE HANNA DRAW COALBED NATURAL GAS PILOT PROJECT 4-46 (2007), available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/rfodocs/hannadraw2.Par.16123.File.dat/ea.pdf>; see also Letter from Erik Schlenker-Goodrich & Megan Anderson, Counsel for Protesters, W. Env'tl. Law Ctr., to Gene Terland, State Director, U.S. Bureau of Land Mgmt., Mont. State Office 8–15 (Mar. 21, 2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/mt/blm_programs/energy/oil_and_gas/leasing/protests.Par.48470.File.dat/WLECprotest.pdf (listing the sources of GHG emissions associated with oil and gas exploration, production, processing, transportation, and distribution). The BLM determined that the project's environmental impact would not be significant. BUREAU OF LAND MGMT., DECISION RECORD AND FINDING OF NO SIGNIFICANT IMPACT FOR THE HANNA DRAW COALBED NATURAL GAS PILOT PROJECT 4 (2007), available at

The BLM was used to conduct this study both because it was most likely to have a number of proposed federal actions that might impact climate change and because it has expressed a desire to be more conscious of its decisions regarding climate change.¹⁴⁶

1. BLM Experience with High-GHG-Emitting Activities

A large number of major BLM actions have high-GHG-emitting potential. Included in its management obligations of over 250 million acres of national land, the BLM “reviews and approves permits and licenses from companies to explore, develop, and produce oil and gas and geothermal resources on both Federal and Indian lands.”¹⁴⁷ Additionally, the “BLM has responsibility for coal leasing on approximately 570 million acres where the coal mineral estate is owned by the Federal

<http://www.blm.gov/pgdata/etc/medialib/>

[blm/wy/information/NEPA/rfodocs/hannadraw2.Par.99332.File.dat/dr_fonsi.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/rfodocs/hannadraw2.Par.99332.File.dat/dr_fonsi.pdf).

145. The results of the EPA EIS database search for all EISs with the BLM as the lead agency from January 1, 2007 to January 1, 2009 with the following words in the title: coal, oil, gas or mining. U.S. Env'tl. Prot. Agency, National Environmental Policy Act (NEPA), Search Environmental Impact Statements (EISs) Since January, 2004, <http://yosemite.epa.gov/oeca/webeis.nsf/AdvSearch?OpenForm> (last visited Nov. 11, 2009) (enter “coal,” “oil,” “gas,” and “mining” terms in multiple searches, with the date range 1/1/2007 to 1/1/2009 for each search). Notably, even though the BLM is involved in the Deer Creek Shaft and E Seam Methane Drainage Well Project, the search did not produce a “hit” for this West Elk EIS because the Forest Service is listed as the lead agency. There may be other similar EISs, but the lack of a centralized location or database makes it difficult to comprehensively locate each EIS. Likewise, the EPA’s EIS database limits the search to “title.”

146. According to the CEQ, for calendar year 2007 agencies filed 557 EISs across the entire federal government, with the BLM submitting 52. COUNCIL ON ENVTL. QUALITY, CALENDAR YEAR 2007 FILED EISS (2007), *available at* http://ceq.hss.doe.gov/nepa/Calendar_Year_2007_Filed_EISs.pdf. For calendar year 2008, agencies filed 543 EISs across the entire federal government. The BLM submitted 48. COUNCIL ON ENVTL. QUALITY, CALENDAR YEAR 2008 FILED EISS (2008), *available at* http://ceq.hss.doe.gov/nepa/Calendar_Year_2008_Filed_EISs.pdf; *see also infra* note 155 and accompanying text. In 2007 and 2008, the only agencies filing more EISs than the BLM were the U.S. Forest Service and the Federal Highway Administration. EISs from both of these agencies would be similarly interesting to evaluate for their consideration of climate change, but they are not considered in this study.

147. U.S. Dep’t of the Interior, Bureau of Land Mgmt., New Energy for America, <http://www.blm.gov/wo/st/en/prog/energy.html> (last visited Nov. 11, 2009).

Government.”¹⁴⁸ Furthermore, the BLM reviews and approves applications for rights-of-way on public land for projects such as pipelines and transmission lines, as well as applications to construct new energy-generating facilities.¹⁴⁹ Based on the EPA’s GHG inventory, fossil fuel combustion activities are the largest producers of GHGs.¹⁵⁰ The inventory also notes a number of anthropogenic sources of methane, including natural gas and petroleum systems, and coal mining.¹⁵¹ Using this as a basis, this sample size focused on EISs with a title that referenced oil, coal, gas, or mining. All of these activities emit carbon dioxide and/or methane, two of the most significant GHGs.¹⁵² The search resulted in thirty-five distinct projects between 2007 and 2008.¹⁵³

2. The BLM’s Attempts to Address Climate Change

The BLM must arguably comply with its mandates to address climate change in its NEPA documentation. Since 2001, the BLM has been subject to Department of Interior Secretarial Order 3226, entitled “Evaluating Climate Change Impacts in Management Planning,” which requires that each “bureau and office of the Department will consider and analyze potential climate change impacts when . . . making major decisions

148. U.S. Dep’t of the Interior, Bureau of Land Mgmt., Coal Operations, http://www.blm.gov/wo/st/en/prog/energy/coal_and_non-energy.html (last visited Nov. 11, 2009).

149. U.S. Dep’t of the Interior, Bureau of Land Mgmt., Rights-of-Way, http://www.blm.gov/wo/st/en/prog/energy/cost_recovery_regulations.html (last visited Nov. 11, 2009).

150. U.S. ENVTL. PROT. AGENCY, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2007, at ES-4 (2009), available at http://www.epa.gov/climatechange/emissions/downloads09/GHG2007entire_report-508.pdf.

“The primary greenhouse gas emitted by human activities in the United States was CO₂.” *Id.* “Fossil fuels are made up of hydrogen and carbon. When fossil fuels are burned, the carbon combines with oxygen to create carbon dioxide.” Energy Info. Admin., Energy and the Environment Explained, Where Greenhouse Gases Come From, http://tonto.eia.doe.gov/energyexplained/index.cfm?page=environment_where_ghg_come_from (last visited Nov. 11, 2009).

151. U.S. ENVTL. PROT. AGENCY, *supra* note 150, at ES-10.

152. The Energy Information Administration reported that the total amount of carbon dioxide emissions for 2007 was 7,282.4 million metric tons carbon dioxide equivalent (“MMTCO_{2e}”). Methane emissions totaled 699.9 MMTCO_{2e} in 2007. ENERGY INFO. ADMIN., EMISSIONS OF GREENHOUSE GASES IN THE UNITED STATES 2007, at 1 (2008), available at <http://ftp.eia.doe.gov/pub/oiarf/1605/cdrom/pdf/ggrpt/057307.pdf>.

153. Some of the resulting EISs were different phases related to the same project (for example, Draft EIS and Final EIS) and so the tally was consolidated to reflect thirty-five distinct projects.

regarding the potential utilization of resources under the Department's purview."¹⁵⁴ The Department of Interior created a task force to address climate change that recently issued the following remarks:

[NEPA] [d]ocumentation could range from a statement that the subject has been considered but found inapplicable, to a robust discussion of issues such as: climate change impacts on the project; the direct impacts of greenhouse gases released by the project; and the state of knowledge concerning indirect impacts from greenhouse gas emissions associated with the project. Guidance could also include standard checklists and language that managers could use when determining if and how climate change should be included in a NEPA document. Finally, it could include a request to CEQ to initiate a government-wide framework for addressing climate change in NEPA documents.¹⁵⁵

The Government Accountability Office has recommended that the Secretary of Interior, among others, "develop guidance incorporating agencies' best practices, which advises managers on how to address climate change effects on the resources they manage and gather the information needed to do so."¹⁵⁶ And although a BLM Handbook revised in January 2008 did not include any reference to climate change or greenhouse gases,¹⁵⁷ former Department of Interior Secretary Dirk Kempthorne signed a Secretarial Order amending Secretarial Order 3226 intended to expand the bureau's responsibilities in addressing climate change.¹⁵⁸ Included was a requirement similar to

154. SEC'Y OF THE INTERIOR, ORDER NO. 3226A1, EVALUATING CLIMATE CHANGE IMPACTS IN MANAGEMENT PLANNING (2009), *available at* http://206.131.241.18/app_SO/act_getfiles.cfm?order_number=3226A1.

155. DEP'T OF THE INTERIOR TASK FORCE ON CLIMATE CHANGE, REPORT OF THE SUBCOMMITTEE ON LAW AND POLICY: AN ANALYSIS OF CLIMATE CHANGE IMPACTS AND OPTIONS RELEVANT TO LEGAL AND POLICY ISSUES AT THE DEPT. OF THE INTERIOR 8, *available at* http://www.usgs.gov/global_change/docs/law_policy.pdf.

156. U.S. GOV'T ACCOUNTABILITY OFFICE, REPORT TO CONGRESSIONAL REQUESTERS, CLIMATE CHANGE: AGENCIES SHOULD DEVELOP GUIDANCE FOR ADDRESSING THE EFFECTS ON FEDERAL LAND AND WATER RESOURCES (2007), *available at* <http://www.gao.gov/new.items/d07863.pdf>.

157. See BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, NATIONAL ENVIRONMENTAL POLICY ACT: HANDBOOK H-1790-1 (2008), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.84688.File.dat/h1790-1-2008.pdf.

158. *DOI Kempthorne Signs Climate Change Order*, PINEDALE ONLINE, Jan. 22, 2009, <http://www.pinedaleonline.com/news/2009/01/DOIKempthornsignsCli.htm>.

Executive Order 3226 that the bureau “[c]onsider and analyze potential climate change impacts . . . when making major decisions affecting DOI resources,”¹⁵⁹ but there was no specific reference to NEPA obligations.

B. Evaluation of Climate Change in 2007–2008 BLM EISs

Using the parameters identified above, an empirical evaluation of BLM EISs from 2007 and 2008 resulted in thirty-five distinct proposals.¹⁶⁰ The resulting review demonstrates that the BLM completely ignores climate change in thirteen EISs, provides a cursory discussion of climate change in seven EISs, and quantifies GHGs in fifteen EISs. In only three EISs—the two subject to California’s stricter state version of NEPA, the CEQA, and one coal plant proposal—does the agency attempt to mitigate the projected increases in GHG emissions.¹⁶¹ In all the other EISs, the agencies fail to include any GHG-related mitigation measures.

1. EISs with No Consideration of Climate Change

Because these EISs were selected for their high-GHG-emitting potential, it is problematic that thirteen EISs fail to mention climate change.¹⁶² This category includes proposals to develop two additional natural gas wells,¹⁶³ permits to develop oil and gas resources,¹⁶⁴ a lease for 13,000 acres of coal,¹⁶⁵ a

159. SEC’Y OF THE INTERIOR, *supra* note 154.

160. See *infra* Appendix A for a table of the thirty-five EISs.

161. Sunrise and White Pine contain mitigation measures in the Record of Decision. See *infra* notes 208, 213 and accompanying text. USG Gypsum includes mitigation measures in the EIS. See *infra* note 216 and accompanying text.

162. To be placed in this category, an EIS must have no mention of “climate change,” “greenhouse gas,” or “global warming.” Climate change-related references to “carbon dioxide” and “methane” also were searched.

163. BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, FINAL ENVIRONMENTAL IMPACT STATEMENT AND BIOLOGICAL ASSESSMENT: EOG RESOURCES INC. CHAPITA WELLS-STAGECOACH AREA NATURAL GAS DEVELOPMENT (2008), available at http://www.blm.gov/ut/st/en/fo/vernal/planning/nepa_/Chapita_Wells.html [hereinafter CHAPITA WELLS FINAL EIS]; BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, MOXA ARCH AREA INFILL GAS DEVELOPMENT PROJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (2007), available at http://www.blm.gov/wy/st/en/info/NEPA/kfodocs/moxa_arch.html.

164. BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, FINAL ENVIRONMENTAL IMPACT STATEMENT QUESTAR EXPLORATION & PRODUCTION (QEP) GREATER DEADMAN BENCH OIL AND GAS PRODUCING REGION (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/ut/vernal_fo/planning/greater

project to construct a 399-mile petroleum pipeline¹⁶⁶ and a 760-mile natural gas pipeline,¹⁶⁷ six mining-related proposals,¹⁶⁸ and a resource management plan.¹⁶⁹ These projects are all logically related to climate change and are precisely the type of projects that should consider climate change. Yet, each EIS fails to mention the relevant terms.

The apathy toward climate change impacts is particularly troublesome for two of the projects—the proposal to lease thousands of acres of coal for mining in East Lake Lynn and the proposal to develop oil and gas resources in the Greater Deadman Bench. The East Lake Lynn project proposes to lease over 13,000 acres of coal in West Virginia that would be mined by underground mining methods from existing mines operating on

_deadman_bench.Par.37202.File.dat/Summary.pdf [hereinafter GREATER DEADMAN BENCH FINAL EIS].

165. BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, EAST LYNN LAKE COAL LEASE DRAFT LAND USE ANALYSIS AND DRAFT ENVIRONMENTAL IMPACT STATEMENT (2008), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/es/eastlynnlake.Par.49261.File.dat/B_2239%20DEIS%20Text%20200803Mar25.pdf [hereinafter EAST LYNN LAKE DRAFT EIS].

166. BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE UNEV PIPELINE (2008), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/ut/lands_and_minerals/lands/major_projects/unev_pipeline.Par.91298.File.dat/12-23UNEV_DEIS_103108.pdf.

167. BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, FINAL OVERLAND PASS NATURAL GAS LIQUIDS PIPELINE ENVIRONMENTAL IMPACT STATEMENT (2007), *available at* http://www.blm.gov/wy/st/en/info/NEPA/rfodocs/overland_pipeline.html.

168. BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, EMIGRANT MINE DRAFT ENVIRONMENTAL IMPACT STATEMENT (2008), *available at* http://www.blm.gov/nv/st/en/fo/elko_field_office/blm_information/nepa/emigrant_deis_no_v.html; BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT: GOLDEN SUNLIGHT MINE PIT RECLAMATION (2007), *available at* <http://www.deq.state.mt.us/eis/hardrock/GoldenSunlightSEIS/finalSEIS.mcp>; BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, LEEVILLE MINING PROJECT DRAFT SUPPLEMENT (2007), *available at* http://www.blm.gov/nv/st/en/fo/elko_field_office/blm_information/nepa/draft_eis_leeville.html; BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, MONTANA TUNNELS MINE PROJECT (2007), *available at* <http://deq.mt.gov/eis.asp>; BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, NEWMONT GOLD MINING DRAFT SUPPLEMENT (2007), *available at* http://www.blm.gov/nv/st/en/fo/elko_field_office/blm_information/nepa/draft_eis_soapa.html; BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, THREE RIVERS STONE QUARRY EXPANSION: DRAFT ENVIRONMENTAL IMPACT STATEMENT (2007), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/id/nepa/challis_fo/three_rivers_stone.Par.41033.File.dat/01%20-%20Introduction.pdf [hereinafter THREE RIVERS DRAFT EIS].

169. BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, IRONWOOD FOREST NATIONAL MONUMENT (2007), *available at* http://azmemory.lib.az.us/cdm4/item_viewer.php?CISOROOT=/feddocs&CISOPTR=484&CISOBX=1&REC=1.

adjacent private land.¹⁷⁰ The project will unquestionably increase methane emissions—an explosive gas that is a hazard to underground miners.¹⁷¹ To ensure mine safety, fresh air must be circulated through underground coal mines using ventilation systems to dilute in-mine concentrations of methane to safe levels. Ventilated methane represents over half of all coal mining emissions in the United States and worldwide.¹⁷² The DOE estimates that coal mining activities also account for 10 percent of all methane emissions.¹⁷³ With few exceptions, the ventilated methane is simply released to the atmosphere.¹⁷⁴ Given the documented environmental impact of methane ventilation, the East Lake Lynn EIS should discuss methane emissions, however, the EIS makes no mention of methane emissions or the consequent impact on climate change that might result from the project.¹⁷⁵

Similarly, the proposal to develop natural gas at Greater Deadman Bench in Utah would involve drilling up to 1,020 natural gas wells and 219 oil wells, as well as the construction of 170 miles of new roads, 235 miles of pipelines, 31 miles of power lines, 22 new central tank facilities, and 15 new gas compressor stations.¹⁷⁶ Though it is well documented that climate change impacts from natural gas can be triggered by the exploration, production, processing, transportation, distribution, and refining processes,¹⁷⁷ the Greater Deadman Bench EIS failed to mention the potential GHG emissions resulting from the project.

170. EAST LYNN LAKE DRAFT EIS, *supra* note 165, at iii.

171. U.S. Env'tl. Prot. Agency, Coalbed Methane Outreach Program (CMOP), Basic Information, <http://www.epa.gov/cmop/basic.html> (last visited Nov. 11, 2009).

172. *Id.*

173. NAT'L ENERGY TECH. LAB., U.S. DEPT OF ENERGY, PROJECT FACTS: CARBON SEQUESTRATION 1 (2008), available at <http://www.netl.doe.gov/publications/factsheets/project/Proj248.pdf>.

174. U.S. Env'tl. Prot. Agency, *supra* note 171.

175. EPA issued a similar critique about the Forest Service's EIS for a proposal to drill methane drainage wells. Letter from Kerrigan G. Clough to Charles Richmond, *supra* note 93, at 1; see also U.S. FOREST SERV., *supra* note 140.

176. GREATER DEADMAN BENCH FINAL EIS, *supra* note 164, at S-13, S-17.

177. Letter from Erik Schlenker-Goodrich & Megan Anderson to Gene Terland, *supra* note 144, at 9 (protesting BLM's April 8, 2008 oil and gas lease sale).

2. EISs with a “Discussion” of Climate Change

Seven of the EISs contain a “discussion” of climate change.¹⁷⁸ This category includes three proposals to lease millions of acres of land for coal, oil, or gas; two resource management plans; one mine expansion; and one proposal to develop natural gas wells. Even though the EISs mention climate change issues, the agencies often baldly assert that the impact of the increased GHG emissions would be negligible.¹⁷⁹ Worse, other EISs explicitly state that climate change is outside the scope of the NEPA analysis.¹⁸⁰

In some EISs, agencies repeat stock language without actual consideration of GHG emissions or climate change. The BLM evaluated two companion proposals to issue leases totaling about 460 million metric tons of coal in Wyoming: Maysdorf

178. To be placed in this category, an EIS must mention “climate change” or “greenhouse gas,” but not include a quantification of emissions.

179. See BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, NORTHEAST NATIONAL PETROLEUM RESERVE-ALASKA (NPR-A) FINAL SUPPLEMENTAL INTEGRATED ACTIVITY PLAN/ENVIRONMENTAL IMPACT STATEMENT (IAP/EIS) 4-73, 4-269, 4-396, 4-507 (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/planning/ne_npra_final_supplement.Par.86097.File.dat/npra_final_chapter4.1_4.6.pdf [hereinafter NPR-A EIS], for the proposal to lease millions of acres of land for oil and gas development in the National Petroleum Reserve in Alaska that would yield nearly three billion barrels of oil and trillions of cubic feet of natural gas. CO₂ emissions were not specifically calculated, but the proposal estimated that each alternative would “contribute minuscule amounts of CO₂ emissions to the national and global levels.” *Id.* at 4-73.

180. For the proposal to develop 4,400 additional natural gas wells in Wyoming, see BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PINEDALE ANTICLINE OIL AND GAS EXPLORATION AND DEVELOPMENT PROJECT 4-74 (2008), available at <http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/pfodocs/anticline/rod.Par.84121.file.dat/05chap4.pdf> [hereinafter PINEDALE FINAL SEIS]. “Greenhouse gas emissions are a concern; however, because of [the lack of scientific tools designed to predict climate change or quantify future impacts] and because they are outside the scope of this analysis, they were not analyzed in this Final SEIS [(Supplemental Environmental Impact Statement)].” *Id.* For the proposal to expand open pit phosphate mining operations in Idaho, see BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, SMOKY CANYON MINES PANEL F AND G: FINAL ENVIRONMENTAL IMPACT STATEMENT 5-13 (2007), available at http://www.blm.gov/id/st/en/fo/pocatello/planning/smoky_canyon_mine.html [hereinafter SMOKY CANYON FINAL EIS].

Because the scale of the global warming issue is so large and the release of CO₂ from fuel burning under the Proposed Action (measured in thousands of tons over the mine life) is relatively minuscule compared to the U.S. emission rate, . . . an assessment of the effects of the operations on global climate change would be unreliable.

Id.

and Eagle Butte.¹⁸¹ The BLM admitted that this large commitment of resources would result in carbon dioxide and methane emissions.¹⁸² Accordingly, the EISs mentioned GHG emissions, but the BLM failed to provide genuine consideration of climate change. For example, both proposals make use of identical stock language acknowledging that “CBNG [coalbed natural gas] that is not recovered prior to mining would be vented to the atmosphere during the mining process . . . [and that] CBNG is composed primarily of methane, which is a greenhouse gas that contributes to global warming.”¹⁸³ Notwithstanding this lip service, the BLM then determined that:

Total U.S. methane emissions attributable to coal mining would not be likely to decrease if the [Maysdorf or Eagle Butte West] LBA [Lease By Application] Tract is not leased at this time because a decision to lease or not to lease the tract would not directly affect total U.S. coal production. However, the methane on an LBA tract could be more completely recovered if leasing is delayed.¹⁸⁴

The BLM also went on to note that Wyoming Powder River Basin (“PRB”) surface coal mines were responsible for approximately 1.04 percent of the estimated U.S. anthropogenic methane emissions in 2005, suggesting that it did not find the increase important.¹⁸⁵ In reaching this conclusion, the BLM took a similar approach to its analysis of carbon dioxide in both EISs:

The applicant mine plans to produce the coal included in the LBA tract at currently permitted levels using existing production and transportation facilities. As a result, leasing the Maysdorf LBA Tract [or Eagle Butte Tract] to an existing mine under the Proposed Action or Alternatives 2 and 3

181. BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE EAGLE BUTTE WEST COAL LEASE APPLICATION ES-1 (2007), *available at* http://www.blm.gov/wy/st/en/info/NEPA/cfo_docs/eaglebutte-westcoal.print.html [hereinafter EAGLE BUTTE FINAL EIS]; BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE MAYSDORF COAL LEASE APPLICATION 3-161 (2007), *available at* <http://www.blm.gov/pgdata/etc/medialib/blm/wy/information/NEPA/cfodocs/maysdorf/feis.Par.45744.File.dat/08chap3.pdf> [hereinafter MAYSDORF FINAL EIS].

182. *See* EAGLE BUTTE FINAL EIS, *supra* note 181, at 3-180 to -182.

183. *Id.* at 3-180 to -181.

184. *Id.* at 3-181.

185. *Id.*

would not be expected to result in new emissions of CO₂ from coal-fired power plants.¹⁸⁶

These coal lease EISs raise a number of questions. First, it is unclear why a decision to lease over 400 million metric tons of coal would not directly affect coal production. Second, it is unclear why a finding that emissions are “not likely to decrease” without the project satisfies the agency’s obligation to consider how the emissions are likely to *increase* if the project is approved. Lastly, it is unclear why mining 400 million metric tons of coal for combustion would not be expected to result in new carbon dioxide or methane emissions.

Finally, in the two remaining EISs that encompass resource management plans in Utah, the BLM repeats its stock GHG-avoidance language:

The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts. Currently, the BLM does not have an established mechanism to accurately predict the effect of resource management-level decisions from this planning effort on global climate change.¹⁸⁷

Although the BLM acknowledges in both EISs that several activities occur within the planning area that may generate emissions of “climate changing pollutants”—including oil and gas development, large fires, and recreation using combustion engines¹⁸⁸—the BLM did not quantify the expected GHG emissions.

186. MAYS DORF FINAL EIS, *supra* note 181, at 3-161.

187. PRICE FIELD OFFICE, BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, PROPOSED RESOURCE MANAGEMENT PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT 4-5 to -6 (2008), *available at* http://www.blm.gov/ut/st/en/fo/price/planning/Proposed_RMP_Final_EIS.html; *see also* VERNAL FIELD OFFICE, BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, PROPOSED RESOURCE MANAGEMENT PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT 4-8 (2008), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/ut/vernal_fo/planning/proposed_rmp/_chapter_4.Par.24426.File.dat/Chapter_4_-_4.2_Air_Quality.pdf.

188. PRICE FIELD OFFICE, *supra* note 187, at 3-3; VERNAL FIELD OFFICE, *supra* note 187, at 3-9.

3. Quantification of GHG Emissions and Assessment of Significance

Fifteen of the thirty-five BLM EISs reviewed quantify the GHG emissions associated with the project. This category includes two proposals to lease millions of acres of coal, one proposal to construct a new coal plant, two proposals to develop oil and/or natural gas, four proposals to expand mines, and three resource management plans. Despite the Ninth Circuit's strongly worded requirement that agencies must assess actual impacts from these GHG emissions in *Center for Biological Diversity v. NHTSA*, the following review of BLM EISs suggests that the BLM is still reluctant to move beyond mere quantification.¹⁸⁹

Of the thirty-five EISs in which the BLM did quantify emissions, it often found that, compared to national or global GHG emissions, the project's emissions would be negligible. For instance, two proposals to lease millions of acres of coal in South Gillette and West Antelope II contained language similar to the Maysdorf and Eagle Butte EISs.¹⁹⁰ Both EISs quantify the annual GHG emissions of the respective projects

189. Although outside the two-year sample size by a few days, the BLM presented a similar response in its EIS for the Ely Energy Center proposal, a coal-fueled electric energy generating facility. Using Energy Information Administration data, the BLM quantified emissions of carbon dioxide, methane, and nitrogen oxide from the proposal. ELY DRAFT EIS, *supra* note 26, at 4-64. Totaling 10.6 million metric tons of carbon-dioxide equivalent per year, the BLM only made a global comparison, which resulted in no mitigation measures to offset these increased emissions. The BLM explicitly noted that its analysis was "limited to accounting and disclosing factors that contribute to climate change." *Id.* at 4-82. Because the CEQ regulations explicitly state that "[a]n environmental impact statement is more than a disclosure document," 40 C.F.R. § 1502.1 (2009), it is difficult to understand how the BLM's analysis could be sufficient under NEPA.

190. BUREAU OF LAND MGMT., U.S. DEPT OF THE INTERIOR, DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE SOUTH GILLETTE AREA COAL LEASE APPLICATIONS (2008), *available at* http://www.blm.gov/wy/st/en/info/NEPA/cfodocs/south_gillette.html [hereinafter SOUTH GILLETTE DRAFT EIS]; BUREAU OF LAND MGMT., U.S. DEPT OF THE INTERIOR, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE WEST ANTELOPE II AREA COAL LEASE APPLICATION (2008), *available at* http://www.blm.gov/wy/st/en/info/NEPA/cfodocs/West_Antelope_II.html [hereinafter WEST ANTELOPE II FINAL EIS]. Notably, the CEQ guidance that advocated consideration of climate change in programmatic EISs suggests that one programmatic EIS for all the coal and mining in the Powder River Basin could have encompassed Maysdorf, West Antelope, Gillette, Hay, and Eagle Creek. *See* MCGINTY, *supra* note 53, at 4. It is unclear why the BLM did not find these sufficiently related to conduct a programmatic EIS.

(348,477 metric tons of carbon dioxide equivalent¹⁹¹ per year for South Gillette and 120,729 metric tons of carbon dioxide equivalent per year for West Antelope).¹⁹² Only the West Antelope EIS compared the expected increase to state-wide emissions, finding the project would constitute 0.63 percent of statewide emissions.¹⁹³ Notably, however, the BLM issued its Final EIS for Gillette in early 2009, which was amended to include a discussion of three voluntary mitigation measures used at “some PRB mines.”¹⁹⁴

Similarly, in two proposals to expand and construct new mining facilities at the Betze and Cortez Hills mines, the BLM included stock language about the “correlation between global warming and emissions of GHG[s].”¹⁹⁵ To reach the conclusion that both projects’ GHG emissions would be minimal (0.01 percent of national annual emissions for Betze and 0.0048 percent of national annual emissions for Cortez), the BLM quantified the annual GHG emissions of the respective projects (972,594 annual metric tons of GHG for Betze and 386,000 annual metric tons of GHG for Cortez) and compared each projects’

191. CO_{2e} stands for carbon dioxide equivalent. See *infra* Part V.B.3.a. It is an internationally accepted measure that equalizes the global warming potential of different GHGs. For instance, the measure takes into account the fact that, even though there are more metric tons of carbon dioxide being emitted, methane has a greater impact on global warming.

192. See SOUTH GILLETTE DRAFT EIS, *supra* note 190, at 3-255; WEST ANTELOPE II FINAL EIS, *supra* note 190, at 3-174.

193. WEST ANTELOPE II FINAL EIS, *supra* note 190, at 3-175 to -176.

194. SOUTH GILLETTE DRAFT EIS, *supra* note 190, at 3-270 (“Voluntarily [sic] mitigation measures to reduce mine-specific greenhouse gas emissions currently in place at some PRB mines include: minimizing blast size to the extent possible to reduce CO₂ and NO₂ emissions; using different blends of ANFO and slurries and gels used in coal and overburden blasts to reduce CO₂ and NO₂ emissions; and reducing fuel consumption by restricting equipment idling times, maintaining equipment (vehicles, compressors, generators, etc.) to improve fuel efficiency, focusing on high-efficiency engines for replacement, establishing overland conveyors to reduce coal hauling distances, and installing in-pit refueling facilities to reduce travel distance for fueling, thereby reducing CO₂, NO₂, and N₂O emissions.”).

195. BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT: BETZE PIT EXPANSION PROJECT 3.15-1 (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/nv/field_offices/elko_field_office/information/nepa/betze_pit_draft_seis.Par.98906.File.dat/3.0_Affect_Env.pdf [hereinafter BETZE PIT DRAFT SEIS]; see also BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, CORTEZ HILLS EXPANSION PROJECT: FINAL ENVIRONMENTAL IMPACT STATEMENT VOLUME I 3.20-1 (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/nv/field_offices/battle_mountain_field/blm_information/nepa/cortez_hills_final.Par.44277.File.dat/g_Sect_3-10_through_Chapter_8.pdf [hereinafter CORTEZ HILLS FINAL EIS].

annual GHG emissions to national annual emissions.¹⁹⁶ While the BLM acknowledged that extending the period of mining by four years would generate five more years of CO₂, the agency asserted that “CO₂ emissions would not materially impact state, national, or global climate change.”¹⁹⁷

In four other EISs that encompassed oil and gas resource management plans,¹⁹⁸ a coal-fired power plant,¹⁹⁹ and natural gas wells,²⁰⁰ the BLM found substantial GHG emissions yet provided little or no explanation for the lack of mitigation.

196. BETZE PIT DRAFT SEIS, *supra* note 195, at 3.15-1; CORTEZ HILLS FINAL EIS, *supra* note 195, at 3.20-1.

197. BETZE PIT DRAFT SEIS, *supra* note 195, at 3.15-1.

198. See BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, PROPOSED OIL SHALE AND TAR SANDS RESOURCE MANAGEMENT PLAN AMENDMENTS TO ADDRESS LAND USE ALLOCATIONS IN COLORADO, UTAH, AND WYOMING AND FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT (2008), *available at* <http://ostseis.anl.gov/eis/guide/index.cfm>, for proposed amendments to the resource management plans for oil shale and tar sands resources across three states to identify which areas will be open to commercial leasing, exploration, and development. Quantification of GHGs for the two specific phases approved by this programmatic EIS results in 221,639 metric tons of CO₂e. *Id.* at A-83 to -84. The BLM explains that additional NEPA documentation will take place before approval of a plan of development and that “[a]ppropriate stipulations and mitigation measures” would be identified at that time. *Id.* at 1-1. See BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, FINAL SUPPLEMENT TO THE MONTANA STATEWIDE OIL AND GAS ENVIRONMENTAL IMPACT STATEMENT AND PROPOSED AMENDMENT OF THE POWDER RIVER AND BILLINGS RESOURCE MANAGEMENT PLANS 4-61 (2003), *available at* http://www.blm.gov/eis/mt/milescity_seis/fseis/contents.htm, for the preferred alternative to manage oil and gas resources in Montana, totaling over 39 MMTCO₂e or 0.98 MMTCO₂e annually. “Although the CBM [coalbed methane] development (project sources) and non-project sources emit carbon dioxide and methane, climate impacts are anticipated to be small from implementation of any of the alternatives.” *Id.* at 4-20.

199. See TOQUOP DRAFT EIS, *supra* note 16, for the proposal to construct a 750-megawatt coal-fired power plant (originally proposed as a 1100-megawatt natural gas fired power plant). The preferred alternative for the coal-fired plant is expected to produce over seven million metric tons of carbon dioxide emissions per year, yet the EIS provides for no mitigation of these emissions. *See id.* app. at D-32. Notably, this consideration provides a much more skeptical view of global warming than some of the other EISs, where the BLM notes that “CO₂ is widely considered to be a ‘greenhouse gas’” and that “[i]ncreased emissions of greenhouse gases from anthropogenic (i.e., human) activity over the last 100 years are suspected of playing a role in the observed global warming, although the precise mechanisms and magnitude of their effect remains subject to debate within the scientific community.” *Id.* at 4-63.

200. See BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, WEST TAVAPUTS PLATEAU NATURAL GAS FULL FIELD DEVELOPMENT PLAN: DRAFT ENVIRONMENTAL IMPACT STATEMENT 4-16 (2008), *available at* http://www.blm.gov/ut/st/en/fo/price/energy/Oil_Gas/Draft_EIS.html [hereinafter WEST TAVAPUTS PLATEAU DRAFT EIS], for the proposal to develop over eight hundred natural gas wells in the Tavaputs Flats, resulting in over five hundred thousand metric tons of carbon dioxide emissions per year.

Additionally, the BLM provided no explanation for the lack of mitigation in four separate EISs with less substantial GHG emissions.²⁰¹ Even though the BLM quantified the projected GHG emissions from the respective projects, in all cases, the agency determined that the emissions fell below the significance threshold, resulting in no consideration of less GHG-emitting alternatives or mitigation measures in the projects' respective EISs.

4. Quantification of GHG Emissions and Mitigation Measures to Reduce GHG Emissions

Of the fifteen EISs reviewed that did quantify the GHG emissions associated with the project, only three EISs contained any climate change-related mitigation measures.²⁰² This category includes a proposal for a new coal plant, a proposal to construct a transmission line, and a proposal to expand manufacturing operations.²⁰³ The proposal with one of the largest estimated GHG emissions laid the groundwork for potential future mitigation, but did little to ensure actual mitigation. The BLM proposed to construct a 1,590 megawatt

201. Two proposals to expand mines are each estimated to result in over one hundred thousand metric tons of carbon dioxide emissions per year. See BUREAU OF LAND MGMT., U.S. DEPT OF THE INTERIOR, DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE BALD MOUNTAIN MINE NORTH OPERATIONS AREA PROJECT 3-124 (2008), available at http://www.blm.gov/nv/st/en/fo/ely_field_office/blm_programs/minerals/mining_projects/bald_mountain_mine/bald_mountain_mine.html (102,000 metric tons of annual carbon dioxide emissions); BUREAU OF LAND MGMT., U.S. DEPT OF THE INTERIOR, DRAFT ENVIRONMENTAL IMPACT STATEMENT: INDIAN CREEK MINE EXPANSION 3-6 (2008), available at http://www.blm.gov/mt/st/en/fo/butte_field_office/indiancreek.html (156,500 metric tons of annual carbon dioxide emissions). Two other resource land management plans that include the same stock climate change language are referenced *supra* note 183, yet proceed to quantify emissions in an appendix. See BUREAU OF LAND MGMT., U.S. DEPT OF THE INTERIOR, THE MOAB FIELD OFFICE PROPOSED RESOURCE MANAGEMENT PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT AT 4-10 AND 4-28 (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/ut/moab_fo/rmp/finaleis.Par.16274.File.dat/CompleteDocumentText.pdf (83,271 annual metric tons of CO₂); BUREAU OF LAND MGMT., U.S. DEPT OF THE INTERIOR, THE MONTICELLO FIELD OFFICE PROPOSED RESOURCE MANAGEMENT PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT at 4-8 and 4-29 (2008), available at http://www.blm.gov/ut/st/en/fo/monticello/planning/draft_rmp_eis.html (19,826 annual metric tons of CO₂).

202. See SOUTH GILLETTE DRAFT EIS, *supra* note 190, at 3-270 (discussing mitigation generally in other projects).

203. See *infra* notes 204, 210, 214 and accompanying text.

coal-fired electric-power generating plant at White Pine.²⁰⁴ Experts estimate that coal-fired power plants in the United States already emit almost one-third of the U.S. emissions, or 8 percent of the world's anthropogenic carbon dioxide.²⁰⁵ Accordingly, coal-fired power plants indisputably increase GHG emissions. The preferred alternative for White Pine is expected to produce over twelve million metric tons of carbon dioxide emissions per year.²⁰⁶ The EIS notes that the plant "will be designed to accommodate the future addition of carbon capture equipment, and the Station will capture and sequester carbon dioxide if it becomes technologically feasible on a large scale basis and commercially viable in accordance with a memorandum of understanding," but "[b]ased on the extremely small incremental contribution of carbon dioxide emissions from the White Pine Energy Station relative to the total cumulative emissions in the global carbon cycle[,] . . . it is not possible to meaningfully predict any climate impacts."²⁰⁷ Although this mitigation was committed to by the developers and was incorporated into the Record of Decision, it is conditional on the technological and commercial feasibility of carbon sequestration.²⁰⁸

In addition to the White Pine Energy mitigation, there are two notable exceptions to the general apathy toward quantified GHG emissions: Sunrise and USG Gypsum. The most substantive analysis of climate change occurs in these two EISs that are under the jurisdiction of NEPA, as well as CEQA, California's more substantive state version.²⁰⁹ The Sunrise EIS

204. BUREAU OF LAND MGMT., U.S. DEPT OF THE INTERIOR, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE WHITE PINE ENERGY STATION PROJECT 4-97 (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/nv/field_offices/ely_field_office/energy_projects/white_pine_energy1/feis_wpes_pieces.Par.92112.File.dat/09%20%20FEIS%20WPEnergyStation%20Chapter4%2009252008.pdf [hereinafter WHITE PINE FINAL EIS].

205. *In re Otter Tail Power Co.*, 744 N.W.2d 594, 600 (S.D. 2008) (quoting the expert testimony of Dr. Ezra Hausman).

206. WHITE PINE FINAL EIS, *supra* note 204, at 4-136.

207. *Id.* at 4-307 to -308.

208. ELY DIST. OFFICE, BUREAU OF LAND MGMT., U.S. DEPT OF THE INTERIOR, RECORD OF DECISION FOR THE WHITE PINE ENERGY STATION PROJECT 5 (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/nv/field_offices/ely_field_office/energy_projects/white_pine_energy1/feis_wpes_complete.Par.1762.File.dat/White-Pine_ROD.pdf (explaining that the power plant layout will be designed to be "Carbon Capture Ready").

209. Some scholars have addressed the more substantive nature of CEQA. *See, e.g.*, Judi Brawer & Matthew Vespa, *Thinking Globally, Acting Locally: The Role of Local Government in Minimizing Greenhouse Gas Emissions From New Development*, 44 IDAHO L. REV. 589, 617, 619 (2008) (noting the aggressive use of CEQA

addressed a proposal to construct a 150-mile transmission line in Southern California. The BLM indicates that the “Proposed Project would cause an overall net increase in GHG emissions and a significant climate change impact.”²¹⁰ The EIS adopted a “no net increase” threshold of GHG increases, determining that “any level of net GHG increases could be called ‘substantial.’”²¹¹ The EIS proceeded to discuss numerous ways to mitigate these GHG increases, and although noting that “mitigation measures to reduce or offset GHG impacts” were not available that “could fully mitigate the GHG impacts to a less than significant level,” the applicant “contends that GHG emissions will eventually be offset by renewable energy sources that lead to reduced emissions from power plants.”²¹² Notably, in the Record of Decision for the project, the applicant committed both to its mitigation measures and to the status of its reporting efforts.²¹³

The USG Gypsum EIS addressed the environmental impacts of the expansion and modernization of the existing USG gypsum processing and wallboard manufacturing facilities and gypsum quarrying operations in Imperial County, California.²¹⁴ Even after quantification of the carbon dioxide equivalent, the BLM determined that the project’s emission increases represent less than 0.00000654 of the national carbon dioxide

to address greenhouse gas emissions); Madeline June Kass, *Little NEPAs Take on Climate Goliath*, NAT. RESOURCES & ENV’T, Fall 2008, at 40, 41 (noting that CEQA has more “substantive bite” than NEPA).

210. CAL. PUB. UTILS. COMM’N & BUREAU OF LAND MGMT., U.S. DEP’T OF INTERIOR, FINAL ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT AND PROPOSED LAND USE AMENDMENT: SAN DIEGO GAS & ELECTRIC COMPANY APPLICATION FOR THE SUNRISE POWERLINK PROJECT ES-28 (2008), available at <http://www.cpuc.ca.gov/Environment/info/aspensunrise/toc-feir.htm> [hereinafter SUNRISE POWERLINK FINAL EIS].

211. *Id.* at 2-42 (follow “General Responses to Major Comments” hyperlink under “Comments and Responses on the Draft EIR/EIS”).

212. *Id.* at 2-46; see also *id.* app. at 12-102 to -103 (committing to construction, operation, and power generation phase carbon credits, as well as to efforts to prevent sulfur hexafluoride leaks).

213. See BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, RECORD OF DECISION FOR THE SUNRISE POWERLINK TRANSMISSION PROJECT AND ASSOCIATE AMENDMENT TO THE EASTERN SAN DIEGO COUNTY RESOURCE MANAGEMENT PLAN app. A, available at <http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/elcentro/nepa/2007/eis.Par.9361.File.dat/ROD-SunrisePowerlinkJan2009.pdf> [hereinafter SUNRISE POWERLINK ROD].

214. See BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, UNITED STATES GYPSUM COMPANY EXPANSION/MODERNIZATION PROJECT: FINAL ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT ES-3 (2008), available at <http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/elcentro/nepa/2008/eis/ug.Par.91300.File.dat/Executive%20Summary.pdf>.

equivalent loading.²¹⁵ The BLM indicated that the applicant will mitigate its increased GHG emissions: “to the extent necessary, USG will acquire recognized carbon credits to offset the Project’s increased GHG emissions.”²¹⁶ Even in this EIS, however, the BLM noted “the lack of a causal link between the Project’s emissions and anticipated climate change.”²¹⁷

C. *Lack of an Organizing Principle for Consideration of Climate Change Leads to Inconsistencies*

The above review suggests that the BLM lacks an obvious organizing principle for when or when not to consider climate change in its EISs. Projects of similar activities and size, reviewed around the same time, were given disparate treatment. A proposal to lease coal at East Lynn Lake received no mention of climate change,²¹⁸ yet the proposals to lease coal at West Antelope and Gillette quantified expected GHG emissions.²¹⁹ This disparity cannot be reconciled by differences in time: the BLM issued the East Lynn Lake EIS, which was devoid of any mention of climate change, *after* it discussed climate change in the Maysdorf and Eagle Butte EISs.²²⁰ Similarly, a proposal to expand the Three Rivers mine failed to mention climate change,²²¹ yet the proposal to expand the Smoky Canyon mine finalized a few months earlier contained a discussion of climate change.²²²

The natural gas proposals present similar inconsistencies. Proposals to develop natural gas wells at Chapita Wells²²³ and Greater Deadman Bench²²⁴ did not contain a single mention of climate change, yet the proposal to develop natural gas at

215. BUREAU OF LAND MGMT., U.S. DEP’T OF THE INTERIOR, UNITED STATES GYPSUM COMPANY EXPANSION/MODERNIZATION PROJECT: FINAL ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT 4.0-78 (2008), available at <http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/elcentro/nepa/2008/eis/usg.Pa.r.59958.File.dat/4.0%20Collective%20Responses.pdf> [hereinafter USG FINAL EIS].

216. *Id.* at 4.0-81.

217. *Id.*

218. See EAST LYNN LAKE DRAFT EIS, *supra* note 165.

219. See SOUTH GILLETTE DRAFT EIS, *supra* note 190, at 3-269; WEST ANTELOPE II FINAL EIS, *supra* note 190, at 3-174.

220. See EAGLE BUTTE FINAL EIS, *supra* note 181, at 3-180 to -181; MAYSDORF FINAL EIS, *supra* note 181, at 3-161.

221. See THREE RIVERS DRAFT EIS, *supra* note 168.

222. See SMOKY CANYON FINAL EIS, *supra* note 180, at 5-13.

223. See CHAPITA WELLS FINAL EIS, *supra* note 163.

224. See GREATER DEADMAN BENCH FINAL EIS, *supra* note 164.

Tavaputs quantified emissions.²²⁵ And, whereas a proposal to develop eight hundred natural gas wells in Tavaputs quantified emissions,²²⁶ a proposal to develop over four thousand natural gas wells in Pinedale merely mentioned climate change without quantification.²²⁷

It is unclear if the agency's decisions are influenced by the applicant, by the proposed magnitude of the potential climate change impact, or by a lack of standardization. What is clear is that the result is a haphazard and cursory consideration of climate change that does little to advance the goals of NEPA. Some of the early 2009 BLM EISs issued under the Obama Administration gave similarly wide-ranging treatment to climate change issues.²²⁸ This disparity may be even more pronounced if EISs were compared across different agencies.

V. RECOMMENDATIONS FOR EFFECTIVE CONSIDERATION OF GREENHOUSE GASES DURING THE NEPA PROCESS

The Code of Federal Regulations provides that "NEPA's purpose is not to generate paperwork—even excellent paperwork—but to foster excellent action."²²⁹ Instead of fostering

225. See WEST TAVAPUTS PLATEAU DRAFT EIS, *supra* note 200, at 4-16.

226. See *id.* at ES-3.

227. See PINEDALE FINAL SEIS, *supra* note 180, at 4-74.

228. Three 2009 BLM EISs are of note. First, a 2009 EIS on a proposal to develop a new coal mine has an extensive discussion of methane venting, estimating total methane emissions and incorporating mitigation proposals pending feasibility. BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, DRAFT ENVIRONMENTAL IMPACT STATEMENT — PROPOSED RED CLIFF MINE PROJECT AND FEDERAL COAL LEASE BY APPLICATION 4-70 to -77 (2009), available at http://www.blm.gov/pgdata/etc/medialib/blm/co/programs/land_use_planning/rmp/red_cliff_mine/documents/draft_eis/volume_i.Par.76434.File.dat/Chapter_4_Environmental%20Consequences%20&%20Mitigation.pdf. Alternatively, the final EIS for the Gillette coal leasing proposal did nothing more than repeat the few voluntary mitigation measures that have occurred in similar mines. See SOUTH GILLETTE DRAFT EIS, *supra* note 190, at 3-270. Lastly, a draft EIS to expand a mine at Round Mountain contains a cursory discussion of climate change, quantifying the GHG emissions and comparing them to national levels. BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, DRAFT ENVIRONMENTAL IMPACT STATEMENT: ROUND MOUNTAIN EXPANSION PROJECT ES-12 (2009), available at http://www.blm.gov/pgdata/etc/medialib/blm/nv/field_offices/battle_mountain_field/blm_information/nea/round_mountain_expansion.Par.20225.File.dat/Executive%20Summary_052909.pdf ("Greenhouse gases (GHG) emissions associated with the proposed project primarily would be associated with the consumption of energy for mining and ore processing over the 13-year mine life. During peak production, the proposed project would emit approximately 275,000 tpy of GHGs, or approximately 0.0034 percent of the national annual emissions.").

229. 40 C.F.R. § 1500.1(c) (2009).

excellent action, the BLM appears compelled to “discuss” climate change in NEPA documentation without any tangible guidance. The result has been an ad hoc collection of climate change NEPA documentation, ranging from no climate change discussion to quantification of GHG emissions.

Not only is the resulting documentation inconsistent, it also creates definitional problems. First, without guidance or regulations specific to climate change, the BLM is able to make a determination that the climate change impacts of a project fall below the significance threshold and thereby avoid meaningful consideration of GHG impacts, lower-GHG-emitting alternatives, or mitigation measures. Second, even if the BLM acknowledges that the climate change impacts of a project exceed the significance threshold, the BLM is still able to proceed without implementing any lower-GHG-emitting alternatives or mitigation measures.

More meaningful consideration of climate change can be achieved on two levels. First, by providing clear and consistent thresholds about the significance of climate change impacts, the BLM will be able to realize the informational potential of NEPA. The projected GHG emissions associated with a proposed action would be publicly available, and agencies would no longer be able to avoid meaningful consideration of lower-GHG-emitting alternatives or mitigation measures by a bald assertion that the climate change impacts are insignificant. As a result, agencies may have more incentive to tailor their proposed actions to reduce impacts on climate change. Second, given the existing legal constraints, this Part contemplates concrete steps to overcome the Supreme Court’s narrow interpretation of NEPA, either through encouraging agency mitigation of climate change impacts or through a congressional amendment that requires mitigation in certain climate change-related circumstances. This Part both analyzes the possible mechanisms that have been proposed to achieve these objectives and provides some substantive recommendations.

A. Assessment of Possible Mechanisms for Meaningful Consideration of Climate Change in NEPA Documents

Many of the problems identified above that concern a lack of meaningful and consistent consideration of climate change could be remedied with the passage of federal climate change legislation. But while federal regulation of GHGs can be part

of a long-term strategy to address climate change, proponents of managing GHG emissions should not rely solely on this approach. Even though NEPA is not the preferred vehicle for regulating GHGs, in the absence of federal legislation the government is justified in evaluating whether more can be done within NEPA to curb our nation's GHG emissions. Such an evaluation, however, will not come without strong opposition.²³⁰

Over the years, a number of mechanisms have been proposed to give NEPA more substantive force. The list of mechanisms proposed includes the issuance of an executive order,²³¹ a revised approach to the APA,²³² the issuance of CEQ guidance²³³ and regulations,²³⁴ and (the most unlikely option), an amendment to NEPA itself.²³⁵ The unique challenges surrounding climate change enhance the argument for reevaluating whether NEPA could be narrowly amended to overcome the Supreme Court's purely procedural interpretation of NEPA to

230. See, e.g., Letter from Senator James Inhofe & Senator John Barrasso to Nancy Sutley, Chair, Council on Env'tl. Quality 1 (Oct. 22, 2009), available at http://www.eenews.net/public/25/12911/features/documents/2009/10/23/document_gw_01.pdf (arguing that NEPA "is not an appropriate tool to set global climate change policy" and that requiring NEPA analysis will "slow our economic recovery while providing no meaningful environmental benefits").

231. See CHRISTOPHER PYKE & KIT BATTEN, CENTER FOR AM. PROGRESS, FULL DISCLOSURE: AN EXECUTIVE ORDER TO REQUIRE CONSIDERATION OF GLOBAL WARMING UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT (2008), available at <http://www.americanprogress.org/issues/2008/05/pdf/nepa.pdf>.

232. See Jason Czarnezki, *Revisiting the Tense Relationship Between the U.S. Supreme Court, Administrative Procedure, and the National Environmental Policy Act*, 25 STAN. ENVTL. L.J. 3 (2006) (suggesting a more rigorous review of agency process holds the potential to lead to substantive decision-making change under NEPA). Czarnezki's suggestions to use the APA to force actual consideration of environmental factors may also be advanced with the Ninth Circuit's decision in *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 538 F.3d 1172 (9th Cir. 2008). Even if a court cannot require a substantive outcome, the Ninth Circuit's interpretation in *Center for Biological Diversity* suggests that a court can (1) require an agency to consider climate change and (2) require an agency to reassess and better defend a course of action that runs counter to the evidence before the agency on climate change. See *id.* at 1193-94. Arguably, a court could find agency action arbitrary and capricious where the agency did not properly defend its decision to proceed with the project without mitigation in the face of evidence of increased GHG emissions.

233. INT'L CTR. FOR TECH. ASSESSMENT, NATURAL RES. DEF. COUNCIL & SIERRA CLUB, PETITION REQUESTING THAT THE COUNCIL ON ENVIRONMENTAL QUALITY AMEND ITS REGULATIONS TO CLARIFY THAT CLIMATE CHANGE ANALYSES BE INCLUDED IN ENVIRONMENTAL REVIEW DOCUMENTS 3 (2008), available at <http://www.icta.org/doc/CEQ%20Petition%20Final%20Version%202-28-08.pdf> [hereinafter CEQ PETITION].

234. *Id.*

235. *Id.*

produce a law with more substantive force. Even if it is not politically feasible to bolster NEPA with more substantive force, these mechanisms can still be useful to provide procedural clarity and consistency for federal agencies. This Section briefly evaluates three mechanisms for eliciting more meaningful consideration of climate change: (1) federal climate change legislation, (2) CEQ regulations, and (3) NEPA amendments.

1. Federal Climate Change Legislation

The passage of federal climate change legislation would render it increasingly difficult for an agency to avoid completion of an EIS for climate change. Under current NEPA regulations, new climate change legislation that limits GHG emissions would hold agencies more accountable for actually addressing a proposal's impacts on climate change. As part of determining whether a proposed action is "significant," for instance, an agency must consider whether the proposal "threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment."²³⁶

Federal legislation amending the CAA with a cap-and-trade program would likely require significant economy-wide reductions beyond the 1990 baseline. For instance, President Obama has stated that his New Energy for America plan will include new federal legislation that will "[i]mplement an economy-wide cap-and-trade program to reduce greenhouse gas emissions 80 percent by 2050."²³⁷ If Congress enacts such climate change legislation, proposed actions with substantial, unmitigated GHG emissions would invariably "threaten a violation of a Federal" environmental law. In turn, such actions would satisfy the significance factor in NEPA and arguably trigger completion of an EIS.²³⁸

236. 40 C.F.R. § 1508.27(b)(10) (2009). CEQ regulations also require that "[f]ederal agencies shall cooperate in fulfilling [EIS] requirements as well as those of Federal laws so that one document will comply with all applicable laws." *Id.* § 1506.2(c).

237. *Change.gov*, *supra* note 25. The possibility of legislation is aided by Senator Barbara Boxer's chairmanship of the Senate Environment and Public Works Committee and Democratic control of Congress. *Id.*

238. Notably, this requirement extends to state laws as well. A number of states have enacted climate change legislation that needs to be considered in NEPA documentation. *See, e.g.*, California Global Warming Solutions Act of 2006, CAL. HEALTH & SAFETY CODE §§ 38500–38599 (West 2006). Furthermore, CEQ regulations require that EISs "shall discuss any inconsistency of a proposed action

Such regulation would automatically enhance agency consideration of climate change in NEPA documents and any mandatory CAA reductions may force agencies to mitigate such increases through the acquisition of carbon credits or equivalent offsets. Additionally, agencies will no longer be able to point to a lack of federal GHG regulation as their rationale for not including consideration of climate change in their NEPA documentation.²³⁹

Unfortunately, there are numerous political hurdles to passing climate change legislation.²⁴⁰ The most recently proposed climate change legislation, the American Clean Energy and Security Act of 2009, passed the House by a narrow margin.²⁴¹ And the legislation proposed before that, the Lieberman-Warner bill, failed in the Senate in December 2008.²⁴² Passage of such sweeping regulation is increasingly difficult in light of the economic recession and the political capital that nationwide health care reform has required of President Obama. At least one Congressman “predicts no congressional action until 2011” for climate change.²⁴³ So, while federal regulation of GHGs can be part of a long-term strategy

with any approved State . . . laws (whether or not federally sanctioned).” 40 C.F.R. § 1506.2(d).

239. See, e.g., *Border Power Plant Working Group v. Dep’t of Energy*, 260 F. Supp. 2d 997, 1028 (S.D. Cal. 2003) (discussing the argument that an EIS was not required because “the EPA has not designated [carbon dioxide or ammonia] as ‘criteria pollutants’ ”); RURAL DEVELOPMENT, U.S. DEPT OF AGRIC., FINAL ENVIRONMENTAL IMPACT STATEMENT: PROPOSED BASELOAD POWER PLANT ASSOCIATED ELECTRIC COOPERATIVE, INC. 4-4 (2007), available at http://www.usda.gov/rus/water/ees/pdf/AECI_FEIS/Sect_4.pdf (concluding that “[s]ince GHGs are not currently regulated at the state or national level, they are not taken into account in MDNR’s assessment of cumulative impacts”).

240. Ann E. Carlson, *Iterative Federalism and Climate Change*, 103 NW. U. L. REV. 1097, 1098 n.3 (2009) (recommending that the reader see Ted Nordhaus & Michael Shellenberger, *Getting Real on Climate Change*, AM. PROSPECT, Dec. 1, 2008, at 32, “[f]or an interesting account of the difficulties President Obama will face in getting Congress to pass comprehensive climate change legislation”).

241. The American Clean Energy and Security Act of 2009 (H.R. 2454) passed by a vote of 219 to 212. Sam Stein, *House Passes Historic Climate Change Bill*, HUFFINGTON POST, June 26, 2009, http://www.huffingtonpost.com/2009/06/26/climate-change-bill-may-h_n_221564.html.

242. On June 5, 2008, the Lieberman-Warner Climate Security Act of 2008 (S. 3036) “failed to win the needed number of votes to avoid a filibuster and was pulled from the floor.” *Climate Change Legislation Fails in Senate* (NPR radio broadcast June 6, 2008), available at <http://www.npr.org/templates/story/story.php?storyId=91238379>. “The bill would have cut greenhouse gas emissions by two-thirds by the year 2050,” using a cap-and-trade system. *Id.*

243. Brian Tumulty, *N.Y. Lawmakers Differ on Prospects for Climate Change Legislation*, ITHACA J., Dec. 12, 2009 (discussing the views of Representative Eliot Engel, D-Bronx).

to address climate change, proponents of better GHG emissions management should not rely solely on this approach.

2. CEQ Regulations

Notwithstanding legislation external to NEPA, one option for further development of NEPA documentation with respect to climate change involves amendments to the existing CEQ regulations.²⁴⁴ Through such regulations, the CEQ could provide clearer guidance on when and how climate change impacts should be considered in NEPA documents. Such action could enhance consideration of alternatives and mitigation measures related to climate change in an EIS, and thereby result in the realization of NEPA's informational benefits. This alteration would result in EISs with more meaningful consideration of climate change—at least more meaningful than that which was reported in the 35 EISs analyzed in Part IV.

Given the Supreme Court's position that NEPA is purely a procedural statute, however, the CEQ's regulations could do no more than require agencies to "consider" climate change in their NEPA documents. As one scholar noted over a decade ago:

Once an agency has given proper consideration to the possible environmental effect of a proposed action, it may "unwisely" decide to proceed with the action in the face of clear evidence of substantial environmental harm. Therefore, to merely append to the NEPA a requirement for the consideration of global warming impacts would not elevate consideration of those effects to a priority level. It would make global warming impacts one of the factors that the agency will review, rather than a threshold that would bar or permit any action to proceed.²⁴⁵

Even if the CEQ wanted to issue regulations interpreting NEPA with more substantive force, it would run into two problems. First, the Supreme Court "has ruled that, when a court resolves an ambiguous provision *first*, the agency's ability to

244. Lauren Giles Wishnie, *NEPA For a New Century: Climate Change and the Reform of the National Environmental Policy Act*, 16 N.Y.U. ENVTL. L.J. 628, 653 (2008) (noting that "to effectively use NEPA . . . the regulations must be amended to respond to GHG-specific issues").

245. Jose L. Fernandez, *Global Warming Legislation: Putting the Carbon Genie Back in the Bottle*, 42 SYRACUSE L. REV. 1095, 1107 (1991).

construe that provision—even by notice-and-comment rules of the type to which *Chevron* says courts must defer—is then foreclosed.”²⁴⁶ In turn, one could argue that any effort by the CEQ to require a substantive interpretation of the statute or mitigation measures more generally has been foreclosed by the Supreme Court’s interpretation of NEPA.²⁴⁷ Second, an Executive Order, not a congressional instruction, delegated rulemaking authority to the CEQ.²⁴⁸ As a result, CEQ’s regulations are interpretive, not legislative, and therefore are not accorded *Chevron* deference.²⁴⁹ The Supreme Court has indicated that the CEQ regulations are entitled to “substantial deference,”²⁵⁰ but some have suggested that the lesser *Skidmore*²⁵¹ deference is more appropriate.²⁵² Therefore, a CEQ attempt to provide

246. Kenneth A. Bamberger, *Provisional Precedent: Protecting Flexibility in Administrative Policymaking*, 77 N.Y.U. L. REV. 1272, 1274 (2002) (citing *Neal v. United States*, 516 U.S. 284, 295 (1996) (“Once we have determined a statute’s meaning, we adhere to our ruling under the doctrine of *stare decisis*, and we assess an agency’s later interpretation of the statute against that settled law.” (citations omitted))).

247. One possible way around this problem is presented in the Supreme Court’s 2005 decision in *National Cable & Telecommunications Ass’n v. Brand X Internet Services*, 545 U.S. 967 (2005), which concluded that “[o]nly a judicial precedent holding that the statute unambiguously forecloses the agency’s interpretation . . . displaces a conflicting agency construction.” *Id.* at 982–83. An argument could be made that the Supreme Court has not unambiguously foreclosed the agency’s contrary interpretation of NEPA. See Harvey Bartlett, *Is NEPA Substantive Review Extinct, or Merely Hibernating? Resurrecting NEPA Section 102(1)*, 13 TUL. ENVTL. L.J. 411 (2000) (suggesting that NEPA’s substantive force has not been foreclosed); see also Doug Geysler, *Courts Still “Say What the Law Is”: Explaining the Functions of the Judiciary and Agencies After Brand X*, 106 COLUM. L. REV. 2129 (2006) (arguing that agency action adopting a conflicting interpretation from judicial precedent does not create a separation of powers problem because the agency is effectively substituting for Congress). It is likely this argument would not apply to the CEQ because the CEQ is not acting on authority from Congress when it promulgates NEPA regulations. See *infra* notes 248–53 and accompanying text.

248. John C. Grothaus, *Questionable Authority: A Recent CEQ Guidance Memorandum*, 37 ENVTL. L. 885, 887 (2007) (explaining that CEQ’s interpretational authority for issuing NEPA regulations is found nowhere within NEPA, but from two Executive Orders under two different administrations (citing Exec. Order No. 11,514, 35 Fed. Reg. 4248 (Mar. 7, 1970) and Exec. Order No. 11,991, 42 Fed. Reg. 26,967 (May 24, 1977))).

249. *Chevron v. Natural Res. Def. Council*, 467 U.S. 837 (1984); see also Valerie M. Fogelman, *Worst Case Analyses: A Continued Requirement Under the National Environmental Policy Act?*, 13 COLUM. J. ENVTL. L. 53, 82 (1987).

250. *Winter v. Natural Res. Def. Council*, 129 S. Ct. 365, 391 (2008) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 355 (1989)).

251. *Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944).

252. See Thomas W. Merrill & Kristin E. Hickman, *Chevron’s Domain*, 89 GEO. L.J. 833, 921 (2001).

NEPA with more substantive force via regulation may be quite susceptible to legal challenge. Regardless, several organizations petitioned the CEQ to amend its regulations to make clear that climate change should be addressed in NEPA documents.²⁵³ The petition proposes to specifically add climate change language to the regulations on effects, significance, and environmental consequences, but it does not require specific mitigation measures from the documenting agency.²⁵⁴

3. NEPA Amendments

Climate change also might enhance an argument to reevaluate whether NEPA could be amended to have more substantive impact.²⁵⁵ For example, a few jurisdictions have enacted mini-NEPA statutes that include a substantive requirement to reduce or mitigate negative environmental impacts where feasible.²⁵⁶ Some scholars generally support amending NEPA to provide it with similar substantive force.²⁵⁷ Though these

253. CEQ PETITION, *supra* note 233.

254. *Id.* at 39, 41–42.

255. *See, e.g.,* Fernandez, *supra* note 245, at 1108 (“The amendment, by requiring zero increase of greenhouse gas emissions, implies that the agency would be able to proceed with actions that increase the emissions of greenhouse gases as long as other steps are taken simultaneously to abate old emissions or absorb the newly generated ones. Thus the depletion of a segment of forest may be abated by plantings to ensure that the overall absorption of carbon remains the same in an affected area.”).

256. Noah D. Hall, *Interstate Environmental Impact Assessment*, 39 ENVTL. L. REP. NEWS & ANALYSIS 10667, 10668–69 n.24 (2009) (listing the jurisdictions with a substantive requirement as California, the District of Columbia, Massachusetts, Minnesota, and New York); *see also* CAL. PUB. RES. CODE § 21,002.1(b) (West 2007) (“Each public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.”); MASS. ANN. LAWS ch. 30, § 61 (LexisNexis 2007); MINN. STAT. ANN. § 116D.04(6) (West 2005); N.Y. ENVTL. CONSERV. LAW § 8-0109(1) (McKinney 2005).

257. Alyson C. Flournoy, Heather Halter & Christina Storz, *Harnessing the Power of Information to Protect Our Public Natural Resource Legacy*, 86 TEX. L. REV. 1575, 1579 n.13 (2008) (“[Matthew J. Lindstrom, *Procedures Without Purpose: The Withering Away of the National Environmental Policy Act’s Substantive Law*, 20 J. LAND RESOURCES & ENVTL. L. 245, 264–66 (2000)] (discussing proposed reforms to fix NEPA’s inadequate substantive standard, including ‘amending NEPA to create a more explicit link between its substantive policies and procedural mechanism’); [Paul S. Weiland, *Amending the National Environmental Policy Act: Federal Environmental Protection in the Twenty-First Century*, 12 J. LAND USE & ENVTL. L. 275, 290–93 (1997)] (advocating an amendment to NEPA that clarifies environmental protection as a substantive goal in federal decision making); Philip Michael Ferester, *Revitalizing the National Environmental Policy Act: Substantive Law Adaptations from NEPA’s Progeny*, 16 HARV. ENVTL. L. REV. 207 (1992). *But see* Lynton K. Caldwell, *NEPA Revisited: A Call for a Constitu-*

suggestions are well taken, the purpose of this Article is not to advocate for this course of action. Rather, this Article merely questions whether (1) climate change is so different from other environmental impacts that differential NEPA treatment may be justified and (2) whether a narrow amendment—one specific to climate change—could be considered. Two factors lend credence to these arguments. First, climate change differs from many other environmental impacts because it is global in nature. Second, at present, climate change differs from other environmental impacts in that it is not subject to an independent federal regulatory scheme outside of NEPA. Unlike other environmental problems such as air pollution (which Congress has regulated under the CAA) and water pollution (which Congress has regulated under the Clean Water Act), Congress has left climate change to its own devices. This may change with the passage of cap-and-trade legislation, but until then, climate change may be unique enough from most other environmental effects to justify differential treatment under NEPA.

Furthermore, if 80 percent reductions of GHG emissions cannot pass muster in the current economy, NEPA amendments narrowly tailored to climate change may provide an unexpected middle ground for both sides of the aisle. Although GHG emissions would not be reduced below the baseline (as has been discussed in climate change legislation), NEPA could help reduce the rate of emissions by maintaining the baseline. This approach would be further limited in that NEPA would not be able to control GHG emissions from existing sources, as federal legislation would likely require. But NEPA could still prove useful to prevent additional net increases in GHG emissions from new sources.²⁵⁸

Although the federal regulation of GHGs would be the most direct method of addressing the millions of additional tons of GHG emissions that will result from future major agency actions, interim steps need to be taken until a consensus can be reached on this mammoth initiative. CEQ regulations, CEQ guidance, or even consideration of the viability of specific NEPA amendments could provide a means by which to implement the specific recommendations below. Given the

tional Amendment, ENVTL. F., Nov.–Dec. 1989, at 18, 22 (calling for a constitutional amendment rather than legislative reform of NEPA).”).

258. Congress also could consider amendments that empower NEPA with additional congressional authority needed to issue legislative regulations that would be binding and entitled to *Chevron* deference.

limitations faced by each of these options, and the lack of substantive authority over the agencies to direct a particular outcome, another option may be to “encourage” climate-oriented agencies to issue their own binding regulations that provide more substantive force to the NEPA process.²⁵⁹

B. Specific Recommendations for Addressing Climate Change Impacts in NEPA Documents

Regardless of the mechanism chosen, more meaningful consideration of climate change can be achieved on two levels. First, uniform thresholds on the significance of climate change impacts eliminate inconsistencies and ensure consideration of alternatives and mitigation measures where an activity has high-GHG-emitting potential. With clearer directives in place, the EIS can serve as a useful vehicle for forcing disclosure of volumetric levels of GHG emissions, of alternatives to the proposal, and of ways to effectively mitigate the GHG impacts.²⁶⁰ Time and energy that has been spent litigating NEPA’s scope on these issues could be redirected to efforts aimed at minimizing or eliminating GHG emissions.

Second, absent NEPA amendments that require mitigation of climate change-related impacts, more meaningful consideration of climate change may be achieved by strongly “encouraging” mitigation. This type of change can occur in one of two ways. First, a low significance threshold, (e.g., twenty-five thousand annual metric tons of carbon dioxide equivalent per year), may motivate agencies to tailor their proposed actions in a way that reduces their impacts on climate change to avoid completion of an EIS. Second, the EPA may be able to increase

259. See, for example, U.S. Army regulations that require consideration of mitigation measures where feasible. The regulations require that “[t]he proponent must implement those identified mitigations,” “the mitigation shall become a line item in the proponent’s budget or other funding document, if appropriate, or included in the legal document implementing the action (for example, contracts, leases, or grants),” and monitoring must take place to ensure compliance. 32 C.F.R. § 651.15 (2008).

260. See *South Fork Band Council of Western Shoshone v. U.S. Dep’t of the Interior*, No. 09-15230, slip op. at 15837 (9th Cir. Dec. 3, 2009), available at <http://www.ca9.uscourts.gov/datastore/opinions/2009/12/03/09-15230.pdf> (“An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective. . . . A mitigation discussion without at least *some* evaluation of effectiveness is useless in [determining whether anticipated environmental impacts can be avoided].”).

the use of its EIS rating system and referral authority under section 309 of the CAA to elicit more substantive results.

Specific NEPA recommendations can borrow from the number of jurisdictions that require some GHG analysis in their respective mini-NEPAs—namely Massachusetts,²⁶¹ California,²⁶² and New York.²⁶³ Washington,²⁶⁴ Virginia,²⁶⁵ and Kentucky²⁶⁶ also notably released climate change action plans in recent years. Although these state documents differ on the margins (including whether emissions are addressed for all

261. MASS. EXECUTIVE OFFICE OF ENERGY AND ENVTL. AFFAIRS, (REVISED) MEPA GREENHOUSE GAS EMISSIONS POLICY AND PROTOCOL 1 (2009), available at <http://www.env.state.ma.us/mepa/downloads/RevisedGHGPolicy.pdf> (requiring projects with more than *de minimis* GHG emissions to quantify direct and indirect GHG emissions, and, if an alternative with greater GHG emissions is chosen, to explain how it is consistent with the statutory mandate to “take all feasible measures to avoid, minimize, or mitigate ‘damage to the environment’” in Environmental Impact Reviews); see also Gerrard, *supra* note 20, at 21 (discussing Massachusetts state policies regarding climate change).

262. See, e.g., NATURAL RES. AGENCY, PROPOSED REVISIONS TO THE PROPOSED GUIDELINES AMENDMENTS TO GUIDELINES FOR IMPLEMENTATION OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT 6–7 (2009), available at http://ceres.ca.gov/ceqa/docs/Text_of_Proposed_Changes.pdf; Kass, *supra* note 209, at 41 (citing CAL. AIR POLLUTION CONTROL OFFICERS ASS’N, CEQA & CLIMATE CHANGE: EVALUATING AND ADDRESSING GREENHOUSE GAS EMISSIONS FROM PROJECTS SUBJECT TO THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (2008), available at <http://www.capcoa.org/CEQA/CAPCOA%20White%20Paper.pdf> (white paper providing interim resource until adoption of statewide guidelines); GOVERNOR’S OFFICE OF PLANNING AND RESEARCH, TECHNICAL ADVISORY: CEQA AND CLIMATE CHANGE (2008), available at <http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf> (technical advisory for consideration of climate concerns into CEQA documents)).

263. OFFICE OF AIR, ENERGY, AND CLIMATE, N.Y. STATE DEP’T OF ENVTL. CONSERVATION, GUIDE FOR ASSESSING ENERGY USE AND GREENHOUSE GAS EMISSIONS IN AN ENVIRONMENTAL IMPACT STATEMENT (2005), available at http://www.dec.ny.gov/docs/administration_pdf/eisghgpolicy.pdf; see also CLIMATE CHANGE PROGRAM, N.Y. CITY DEP’T OF ENVTL. PROT., ASSESSMENT AND ACTION PLAN: REPORT 1 (2008), available at http://www.nyc.gov/html/dep/pdf/climate/climate_complete.pdf.

264. DEP’T OF ECOLOGY, STATE OF WASH., A COMPREHENSIVE PLAN TO ADDRESS THE CHALLENGES AND OPPORTUNITIES OF CLIMATE CHANGE (2008), available at <http://www.ecy.wa.gov/pubs/0801025.pdf> (attempting to help the state reduce GHG emissions to 1990 levels by 2020, to 25 percent below 1990 levels by 2035, and to 50 percent below 1990 levels by 2050).

265. GOVERNOR’S COMM’N ON CLIMATE CHANGE, FINAL REPORT: A CLIMATE CHANGE ACTION PLAN (2008), available at http://www.deq.virginia.gov/export/sites/default/info/documents/climate/CCC_Final_Report-Final_12152008.pdf.

266. KY. DEP’T FOR ENERGY DEV. & INDEPENDENCE, KY. ENERGY AND ENV’T CABINET, INTELLIGENT ENERGY CHOICES FOR KENTUCKY’S FUTURE: KENTUCKY’S 7-POINT STRATEGY FOR ENERGY INDEPENDENCE (2008), available at <http://www.eec.ky.gov/NR/rdonlyres/3BB23D1C-F42C-4E3D-808D-CF7588926BD3/0/FinalEnergyStrategy.pdf> (calling for Kentucky to reduce GHG emissions to 20 percent below 1990 levels by 2025).

actions or only for those that already exceed the threshold for environmental impact review (“EIR”) documents), they all share some key components. The two most salient features are the focus on quantification of GHG emissions and mitigation measures. For instance, Massachusetts provides more than fifty possible GHG mitigation measures for applicants to consider.²⁶⁷ The result of following these principles could result in EISs much more akin to the Sunrise and Gypsum EISs, where applicants committed to meaningful mitigation measures.²⁶⁸

Building upon these comprehensive assessments, this Article proposes four changes that provide more effective consideration of climate change in NEPA documentation. Two proposals eliminate barriers to meaningful consideration of climate change in NEPA documents. One proposal establishes a bright-line significance threshold for actions affecting climate change, and one proposal suggests how to encourage more substantive mitigation measures to offset the GHG impacts.

1. Eliminate Use of Emissions Comparisons as a Significance Threshold

First, Congress or the CEQ should eliminate agency use of local, state, national, or global comparisons as criteria for significance of impacts.²⁶⁹ For instance, while a statewide comparison may provide a useful frame of reference to understand the relative impact of a project,²⁷⁰ it should not be used as a threshold upon which to determine whether an EIS is required.²⁷¹

As both agencies and courts have noted, the individual GHG impacts from any one project are unlikely to ever meet the significance threshold as it has been previously

267. MASS. EXECUTIVE OFFICE OF ENERGY AND ENVTL. AFFAIRS, *supra* note 261, at app.

268. *See supra* notes 212, 216 and accompanying text.

269. *See, e.g.*, Mayo Found. v. Surface Transp. Bd., 472 F.3d 545, 556 (8th Cir. 2006) (upholding the finding that mitigation conditions were unnecessary because climate change emissions were “small” and “speculative” compared to global emissions).

270. Letter from Nova Blazej to Jane Peterson, *supra* note 107, at 11–12 (proposing comparisons).

271. This may be slightly inconsistent with the CEQ Guidance suggesting comparisons when evaluating cumulative effects, but it is difficult to envision how that guidance could be interpreted to allow such a comparison as the sole basis for a determination of “significance.”

interpreted.²⁷² The DOE acknowledged that “[c]ommentators have questioned [the] DOE’s use of such global comparisons because they believe such comparisons trivialize greenhouse gas emissions and indicate that [the] DOE would always conclude that greenhouse emissions are ‘small,’ thus not warranting mitigation.”²⁷³ An environmental planner for the Colorado Department of Transportation similarly acknowledged the following:

When we get to the project level, . . . I have a hard time believing that any single project is likely to have a significant [effect] on the total greenhouse gas emissions of the transportation system. As such, does a detailed analysis at the project level provide useful information, or assist in making a determination between alternatives? Is it significant? The difference between any alternative and the existing conditions is likely to be so small as to be practically unnoticeable at the regional, let alone state or global, scale.²⁷⁴

As seen in the BLM’s EISs discussed in Part IV,²⁷⁵ agencies continue to use this rationale as another excuse to minimize consideration of climate change. And the BLM is not alone. In a 2007 EIS evaluating funding of private developers and utilities to build new coal-fired plants, the U.S. Department of Agriculture (“USDA”) indicated that:

[i]n a global context, the contribution of a single site-specific action is almost by definition exceedingly small, or at least not practicable to quantify. . . . Consistent with the CEQ regulations, a nationwide or possibly a large-scale regional policy or action that would affect GHG emissions might

272. *Mayo Found.*, 472 F.3d at 555–56 (noting that the Surface Transportation Board described carbon dioxide emissions of less than 1 percent of U.S. emissions as “small”); *Border Power Plant Working Group v. Dep’t of Energy*, 467 F.Supp.2d 1040, 1067 (S.D. Cal. 2006) (holding that carbon dioxide emissions comprising 0.088 percent of total U.S. emissions were “negligible”); *see also City of Los Angeles v. Nat’l Highway Traffic Safety Admin.*, 912 F.2d 478, 501 (D.C. Cir. 1990) (Wald, C.J., dissenting) (noting that the individual GHG emissions of one project cannot possibly be used to determine significance), *overruled by Fla. Audubon Soc’y v. Bentsen*, 94 F.3d 658 (D.C. Cir. 1996).

273. U.S. DEPT OF ENERGY, *supra* note 97, at 4.

274. Posting of F. Yates Oppermann to Re: NEPA, available at <http://nepa.fhwa.dot.gov/ReNEPA/ReNepa.nsf/discussionDisplay?Open&id=16DE78EFE1DC3F67852573950048C0B7&Group=Cumulative%20and%20Indirect%20Impacts&tab=DISCUSSION> (Jan. 29, 2008, 05:59 PM).

275. *See, e.g., NPR-A EIS*, *supra* note 179, at 4-73.

meet the threshold criteria for evaluating global significance, but a single site-specific action would not.²⁷⁶

USDA concluded that there was “not sufficient basis to support a determination of the significance of the Proposed Action related to global climate change” based on the uncertainty of an appropriate baseline condition, or standard, against which to judge significance.²⁷⁷ Without an affirmation that such a comparison is insufficient to satisfy an agency’s obligations under NEPA, similarly hollow statements will result. An amendment that precludes specifying such a comparison would result in efficiency gains, as it would eliminate needless litigation over the “significance” of a project on climate change. The result, of course, would be to preserve time and energy for minimizing or eliminating GHG emissions.

2. Acknowledge GHG Emissions as a Proxy for Climate Change Impacts

Second, Congress or the CEQ should explicitly acknowledge consideration of GHG emissions as a proxy for consideration of climate change. Although there are a number of uncertainties surrounding climate change, it is too easy for agencies to use scientific uncertainty as an excuse for inaction. Some have argued that an analysis of the impacts on climate change should focus on the resulting changes in temperature and precipitation.²⁷⁸ It is generally acknowledged, however, that the current science does not allow for a precise correlation between GHG emissions and an increase in temperature or precipitation.²⁷⁹ And, the Intergovernmental Panel on Climate Change has indicated that increased GHG emissions are part of the causal link impacting climate change.²⁸⁰ Although the use of GHG emissions may not be the perfect way to assess an activity’s effects on climate change, it can serve as a reasonable and valuable proxy.

276. RURAL DEVELOPMENT, *supra* note 239, at 4-5.

277. *Id.*

278. See WHITE PINE FINAL EIS, *supra* note 204, at 4-136 to -137.

279. See, e.g., Chris McChesney, *The Evolving Scope of Significant Effects on the Environment: The National Environmental Policy Act and Climate Change*, SUSTAINABLE DEV. L. & POL’Y, Winter 2007, at 30, 31.

280. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *supra* note 61, at 5.

An agency's continued resistance to consider climate change when the precise science is unknown is exemplified in BLM's response to the protests of the Montana and North Dakota oil and lease sales.²⁸¹ The BLM argued that it was allowed to reference preexisting NEPA documents that encompassed the proposed area, and that it was only required to supplement this documentation if new information had become available since the last NEPA filing.²⁸² In defending its decision to not prepare a supplement to its existing NEPA documents, the BLM noted: "[t]he lack of appropriate scientific tools makes it impossible to analyze how specific quantities of GHG emissions may contribute to an incremental change in average annual global surface temperatures."²⁸³ The BLM also stated:

[w]hile future development of the parcels is likely to emit greenhouse gases, climate change science at this time does not enable us to translate any incremental contributions to global greenhouse gas emissions that may result from potential development of these parcels into incremental effects on the global climate system or the environment in the leasing area.²⁸⁴

As such, the agency determined that, because the connection was uncertain, it did not need to act at all. The best way to avoid this type of situation in the future is to formally acknowledge the use of GHG emissions as a proxy for climate change.

3. Establish Thresholds for Significance

Third, Congress or the CEQ should establish a threshold for significance that would be satisfied if: (1) a proposed action exceeded a quantitative GHG emission threshold; or (2) the proposed action fits into a number of predetermined high-GHG-emitting categories (even if the projected GHG emissions fall

281. BUREAU OF LAND MGMT., U.S. DEP'T OF THE INTERIOR, DECISION: PROTEST DISMISSED (2008), available at http://www.blm.gov/pgdata/etc/medialib/blm/mt/blm_programs/energy/oil_and_gas/leasing/protets/april08.Par.82351.File.dat/april08dec.pdf.

282. *Id.* at 7–8.

283. *Id.* at 9.

284. *Id.*

below the quantitative threshold).²⁸⁵ This type of dual threshold is consistent with the threshold mechanism the EPA uses to determine which emission sources are required to report GHG emissions levels.²⁸⁶ Consistent with this scheme, if a proposed action is expected to exceed the quantitative threshold, the agency will be required to complete an EIS or mitigate its impacts below the quantitative level of significance.²⁸⁷ Alternatively, if a proposed action is within a predetermined high priority category, the only option for the agency will be to complete an EIS.

Since the feasibility of reducing the projected GHG emissions to below the quantitative threshold will prove difficult for many agencies, this bright-line rule will increase the volume of NEPA-required EISs. But instead of witnessing quantification of GHG emissions accompanied by a determination of no significance, as was seen in many of the sample BLM EISs reviewed in Part IV, the agencies will have to quantify and then consider alternatives to “avoid or minimize adverse impacts”²⁸⁸ and mitigation measures to avoid, minimize, rectify, reduce, or compensate for the impact.²⁸⁹ This more consequential consideration of climate change would be more in line with NEPA’s purposes.

Although many may fear that such a proposal would create a tremendous increased administrative burden, the CEQ regulations suggest that, if an agency is conducting an EIS merely due to climate change impacts, the resulting EIS need only consider climate change impacts. Specifically, the CEQ regulations provide that in preparing an EIS, agencies “shall focus on significant environmental issues” and “[i]mpacts shall be discussed in proportion to their significance. There shall be only brief discussion of other than significant issues. As in a finding of no significant impact, there should be only enough discussion to show why more study is not warranted.”²⁹⁰ Given these

285. Such thresholds for climate change would be consistent with many of the factors the CEQ lists to evaluate the intensity prong of significance. *See supra* note 37 and accompanying text.

286. *See* U.S. Env’tl. Prot. Agency, Frequently Asked Questions: Mandatory Reporting of Greenhouse Gases Rule, http://www.epa.gov/climatechange/emissions/ghg_faq.html#somesectors (last visited Jan. 22, 2010).

287. *See infra* notes 309–10 and accompanying text (discussing a “mitigated FONSI”).

288. 40 C.F.R. § 1502.1 (2009).

289. *Id.* § 1508.20.

290. *Id.* § 1502.2(b); *see also id.* § 1502.1.

guidelines, a NEPA climate change document could be much more abbreviated than a traditional EIS.

a. Threshold One: Quantitative GHG Emission

Agencies should be required to quantify the projected GHG emissions for each of the proposed alternatives in an EA and use a numerical threshold to determine whether the GHG emissions are significant. A fundamental benefit of this approach would be the certainty, consistency, and administrative convenience provided to the agencies. Each agency would produce a net GHG emission total over the current baseline that takes into account both the increases and decreases in GHGs that are predicted to occur from the project. Instructions should clearly provide how far down the pipeline to quantify emissions, including both direct and indirect emissions. A number of methodologies currently exist for this process,²⁹¹ and Congress or the CEQ can allow for flexibility in new methodologies, perhaps tasking the CEQ to periodically assess the preferred standard to be used.²⁹²

These GHG emissions should be quantified using a carbon dioxide equivalent (“CO₂e”). This measurement standardizes the impact of different GHGs on climate change. This is needed because a ton of carbon dioxide does not have the same impact as a ton of methane. For instance, even though there are less methane emissions than carbon dioxide emissions, methane is a greenhouse gas that remains in the atmosphere for approximately nine to fifteen years and is over twenty times more effective in trapping heat in the atmosphere than carbon dioxide over a 100-year period.²⁹³ The use of CO₂e standardizes these impacts with impacts stemming from other GHGs.

Congress or the CEQ should also determine the appropriate numerical threshold to be applied to these proposals. The

291. See, e.g., U.S. ENVTL. PROT. AGENCY, STATIONARY FUEL COMBUSTION SOURCES, FINAL RULE: MANDATORY REPORTING OF GREENHOUSE GASES 1–2 (2009), available at http://www.epa.gov/climatechange/emissions/downloads/info_sheets/generalstationaryfuelcombustion.pdf (providing different methodology options for calculating carbon dioxide, methane, and nitrous oxide emissions).

292. See, e.g., Letter from Nova Blazej to Jane Peterson, *supra* note 107, at 11–12 (“Emissions of greenhouse gases in the United States have been quantified by the U.S. Department of Energy and the EPA in publications released in 2007. Additional information on carbon emissions from the burning of fossil fuel and other sources at a regional, national, and global scale has been assimilated by the Carbon Dioxide Information Analysis Center (CDIAC).”).

293. U.S. ENVTL. PROT. AGENCY, *supra* note 150, at ES-10.

first alternative would be to establish a GHG-emission-neutral framework. Instead of noting that a project would result in increased emissions and doing nothing, applicants could follow the model of the United States Gypsum Company and San Diego Gas and Electric, the applicants in the EIS sample that indicated they will mitigate their increased GHG emissions.²⁹⁴ Although such a carbon-neutral threshold may prove too ambitious, forward progress could also be achieved where new proposals are held to a *de minimis* or relatively low level of new GHG emissions.

The second alternative is to establish a precise numerical threshold. This alternative is made easier by the EPA's recent rulemakings that establish twenty-five thousand annual metric tons of CO_{2e} as a threshold for GHG reporting obligations²⁹⁵ and CAA permitting for stationary sources.²⁹⁶ The agency explained that this level was chosen to "cover many of the types of facilities and suppliers typically regulated under the CAA, while appropriately balancing emission coverage and burden." At that threshold, the EPA estimates that "approximately 10,000 facilities and 85 percent of total GHG emissions will be covered."²⁹⁷ Using this same rationale suggests that use of twenty-five thousand annual metric tons of CO_{2e} as a significance threshold should capture the majority of responsible activities under NEPA without over regulating

294. USG FINAL EIS, *supra* note 215, at 4.0-81.

295. Mandatory Reporting of Greenhouse Gases, 74 Fed. Reg. 56,260, 56,264 (Oct. 30, 2009) (to be codified at 40 C.F.R. pts. 86, 87, 89 et al.). As another example, a proposed settlement in *Friends of the Earth, Inc. v. Watson*, No. 3:02-cv-04106-JSW (N.D. Cal. filed Jan. 16, 2004), would establish a "Category A" for projects that result in more than one hundred thousand metric tons of carbon dioxide, triggering reporting requirements and the reduction of the emissions by 20 percent over the next ten years. Posting of Stephanie Stroup to Global Climate Law Blog, <http://www.globalclimatelaw.com/2009/02/articles/climate-change-litigation/friends-of-earth-climate-change-lawsuit-nearing-settlement/> (Feb. 9, 2009).

296. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 74 Fed. Reg. 55,292, 55,351-65 (proposed Oct. 27, 2009) (to be codified at 40 C.F.R. pts. 51, 52, 70, 71) (requiring large facilities emitting over twenty-five thousand annual metric tons of GHGs a year to obtain permits that would demonstrate they are using the best practices and technologies to minimize GHG emissions).

297. U.S. Env'tl. Prot. Agency, Frequently Asked Questions: Mandatory Reporting of Greenhouse Gases Rule, http://www.epa.gov/climatechange/emissions/ghg_faq.html#muchmetric (last visited Jan. 22, 2010) ("25,000 mtCO_{2e} are equivalent to emissions from the annual energy use of approximately 2,300 homes. The threshold is also roughly equivalent to the annual greenhouse gas (GHG) emissions from approximately 4,600 passenger vehicles. It is also equivalent to just over 58,000 barrels of oil consumed or 131 railcars' worth of coal.").

those *de minimis* sources of CO₂e. For instance, all but one of the BLM proposed actions evaluated in this Article that quantified projected GHG emissions also projected emissions above this threshold.²⁹⁸

b. Threshold Two: High-GHG-Emitting Activities

Proposed actions would also trigger a significance finding if the activity is one that has been prioritized as one of the most likely activities to have a substantial impact on GHG emissions. While this prioritization may not capture all projects that should include a consideration of climate change, it would perform a triage of sorts, focusing on those activities most likely to negatively impact climate change. Congress or the CEQ could categorically require that all activities on this high priority list satisfy the significance threshold and require an EIS for climate change even if they emit less than the quantitative GHG emission amount. This prioritization would effectively mandate a “categorical inclusion”²⁹⁹ and would prevent agencies from avoiding consideration of climate change for projects that are more likely to have an impact on GHG emissions.

The Intergovernmental Panel on Climate Change already established a ranking system that can be used to prioritize agencies’ activities. The IPCC’s Good Practice Guidance defines a key category as a “[source or sink category]³⁰⁰ that is prioritized within the national inventory system because its estimate has a significant influence on a country’s total inventory of direct greenhouse gases in terms of the absolute level of emissions, the trend in emissions, or both.”³⁰¹ By definition, key categories are sources or sinks that have the greatest contribution to the absolute overall level of national emissions in

298. See *infra* Appendix A.

299. In a recent petition to CEQ, petitioners suggest that “CEQ should direct agencies to review their NEPA implementing regulations to determine whether some classes of actions that pose a plainly ‘potentially significant’ risk of affecting the climate should be reclassified in their own regulations as normally requiring a full EIS rather than just an EA.” CEQ PETITION, *supra* note 233, at 49 (citing 40 C.F.R. § 1501.4 (2008)).

300. A source category is one that contributes GHGs (for example, coal), whereas a sink category is one that removes GHGs (for example, forestry).

301. U.S. ENVTL. PROT. AGENCY, *supra* note 150, at ES-20 (quoting INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, GOOD PRACTICE GUIDANCE AND UNCERTAINTY MANAGEMENT IN NATIONAL GREENHOUSE GAS INVENTORIES (2000), available at <http://www.ipcc-nggip.iges.or.jp/public/gp/gpqaum.htm>).

any of the years covered by the time series.³⁰² Included in the list are stationary combustion of coal, gas, and oil; natural gas systems; and coal mining. The high priority list proposed would include activities that directly impact fossil fuel combustion (such as approval of leases for fossil fuels).³⁰³ This list is consistent with the EPA's recent GHG inventory, which targets the following categories of activities in order of magnitude of carbon dioxide emissions: fossil fuel combustion, non-energy use of fuels, iron and steel production, cement production, and natural gas systems.³⁰⁴

Under this scheme, for instance, the planned development of over 1,800 additional natural gas wells would have triggered an EIS under both thresholds (projected to emit over twenty-five thousand annual metric tons of CO_{2e} per year and natural gas-related activity would be a high-GHG-emitting activity). Instead of ignoring the issue, this EIS would have forced the BLM to include a more meaningful consideration of climate change.

4. Encourage Agencies to Offset Increases in GHGs

Lastly, the agencies should move beyond mere disclosure of GHG emissions³⁰⁵ to actual mitigation of those emissions. If disclosure of emissions were all that NEPA required, more efficient ways to gather data exist. For instance, many states have already developed ways to facilitate GHG reporting. These states use a mixture of three main vehicles: (1) carbon dioxide emissions disclosure requirements for electricity providers, (2) creation of GHG registries, and (3) requiring entities to report their GHG emissions to the state.³⁰⁶ Whereas only four states have GHG registries, eighteen states have disclosure requirements for electricity providers and mandatory GHG reporting requirements.³⁰⁷ And, as discussed *supra*, the Obama Administration recently issued its final rule requiring

302. *Id.*

303. Activities that indirectly impact fossil fuel combustion should also be considered and evaluated.

304. U.S. ENVTL. PROT. AGENCY, *supra* note 150, at ES-5.

305. "An environmental impact statement is more than a disclosure document." 40 C.F.R. § 1502.1 (2009).

306. U.S. Evtl. Prot. Agency, Climate Change—State and Local Governments, State Reporting, http://www.epa.gov/climatechange/wycd/stateandlocalgov/state_reporting.html (last visited Nov. 12, 2009).

307. *Id.*

economy-wide reporting of GHG emissions that exceed twenty-five thousand annual metric tons of CO_{2e}.³⁰⁸

Short of a congressional amendment requiring agencies to mitigate the climate change impacts of their proposed actions, agencies may be further “encouraged” to mitigate the projected GHG emissions of a project in two ways. First, where proposals have projected GHG emissions that exceed the quantitative threshold, the lead agencies may have an incentive to mitigate a project’s GHG emissions below the “significance” threshold to avoid an EIS. If the applicant can mitigate the projected GHG emissions to below twenty-five thousand annual metric tons of CO_{2e}, the applicant can specify such measures in a “mitigated FONSI,” ending its NEPA obligations.³⁰⁹ In some scenarios, the increased cost of an EIS, possibility of delays, and public pressure to reduce GHG emissions might tip the balance in favor of this form of voluntary mitigation.³¹⁰

Second, the EPA may be able to “encourage” agencies to mitigate the impacts of climate change using its CAA section 309 authority. Under this authority, in addition to commenting on NEPA documents,³¹¹ the CAA also provides: “In the event the Administrator determines that any such legislation, action, or regulation [reviewed for its environmental impact] is unsatisfactory from the standpoint of public health or welfare or environmental quality, he shall publish his determination and the matter shall be referred to the Council on Environmental Quality.”³¹² This obligation is not discretionary. Where the

308. Mandatory Reporting of Greenhouse Gases, 74 Fed. Reg. 56,260 (Oct. 30, 2009) (to be codified at 40 C.F.R. pts. 86, 87, 89 et al.).

309. See, e.g., *Spiller v. White*, 352 F.3d 235, 239 (5th Cir. 2003) (upholding an EA and “mitigated FONSI” issued by the EPA and DOT for a proposed pipeline project). This incentive would not be effective where proposals triggered a significance finding because they were high-GHG-emitting activities.

310. The potential use of mitigated FONSI in this context was suggested to me in conversations with Jamie Grodsky. For a more general discussion of mitigated FONSI, see Bradley C. Karkkainen, *Framing Rules: Breaking the Information Bottleneck*, 17 N.Y.U. ENVTL. L.J. 75, 86 (2008) (“NEPA backhandedly creates an incentive for agencies either to design projects *ab initio* to reduce their expected environmental impacts below the EIS-triggering threshold [using a mitigated FONSI], or to add mitigation measures to keep the environmental costs down, obviating the need to produce a costly EIS.”).

311. See *supra* note 102 and accompanying text.

312. Clean Air Act, 42 U.S.C. § 7609(b) (2006); see also 40 C.F.R. § 1504.1 (2009). Notably, the ability to refer an EIS to the CEQ extends to federal agencies beyond EPA. “[O]ther Federal agencies may make similar reviews of [EISs] . . .” *Id.* § 1504.1(c). But only the EPA has the more extensive authority to review EIS and non-EIS documents, including EAs. See OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE, U.S. ENVTL. PROT. AGENCY, EPA’S SECTION 309

EPA finds a proposed action to be unsatisfactory, the agency must publish the determination and refer the matter to the CEQ. But the referral procedures are designed to encourage the agencies to work out their differences before this finding is made³¹³ and before the issue is elevated to the CEQ or the President.³¹⁴

The EPA has rarely evoked this referral power,³¹⁵ but this authority could provide useful leverage to require an agency to explore mitigation of climate change impacts. The EPA has established a ranking system to summarize its level of concern with a proposed action.³¹⁶ Under this system, a proposed action can receive the lowest ranking (“EU—Environmentally Unsatisfactory”) if there is one or more of the following: (1) a “substantial violation of a federal environmental standard;” (2) “severity, duration, or geographical extent of impacts that warrants special attention;” or (3) “national importance, due to threat to national environmental resources or policies.”³¹⁷

REVIEW: THE CLEAN AIR ACT AND NEPA 2 (1999), available at http://gc.energy.gov/NEPA/nepa_documents/TOOLS/GUIDANCE/Volume1/5-11-epa_309_caa_and_nepa.pdf [hereinafter EPA’S SECTION 309 REVIEW]; U.S. ENVTL. PROT. AGENCY, POLICY AND PROCEDURES FOR THE REVIEW OF FEDERAL ACTIONS IMPACTING THE ENVIRONMENT ch. 8 (1984), available at http://www.epa.gov/compliance/resources/policies/nepa/nepa_policies_procedures.pdf [hereinafter POLICY AND PROCEDURES].

313. See, e.g., 40 C.F.R. § 1504.3(a)(1) (2009) (“Advise the lead agency at the earliest possible time that it intends to refer a matter to the Council unless a satisfactory agreement is reached.”); POLICY AND PROCEDURES, *supra* note 312, at 31 (noting that an essential step prior to formal referral is to “attempt to meet with the lead agency and work out EPA’s concerns”).

314. 40 C.F.R. § 1504.3(f)(7) (2009) (providing that twenty-five days after the EPA referral and response, the CEQ may take one of many actions, including “submit[ting] the referral and the response together with the Council’s recommendation to the President for action”).

315. CEQ lists only twenty-seven total formal referrals from all federal agencies, fifteen of which came from EPA. The last referral listed was in 2001. COUNCIL ON ENVTL. QUALITY, REFERRAL OF INTER-AGENCY DISAGREEMENTS TO CEQ UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT 4, available at http://ceq.hss.doe.gov/nepa/eis/Referrals_to_CEQ_Mar09.pdf. In a more recent 2007 document, the CEQ does not list the referrals, but it still characterizes these referral procedures as “rarely used.” COUNCIL ON ENVTL. QUALITY, A CITIZEN’S GUIDE TO THE NEPA: HAVING YOUR VOICE HEARD 18 (2007), available at http://ceq.hss.doe.gov/nepa/Citizens_Guide_Dec07.pdf.

316. EPA has established four categories that signify EPA’s evaluation of the environmental impacts of the proposal: (1) “Lack of Objections” (LO); (2) “Environmental Concerns” (EC); (3) “Environmental Objections” (EO); and (4) “Environmentally Unsatisfactory” (EU). POLICY AND PROCEDURES, *supra* note 312, at 19. “Numerical categories 1, 2, and 3 signify an evaluation of the adequacy of the draft EIS.” *Id.* at 15.

317. EPA’S SECTION 309 REVIEW, *supra* note 312, at 3.

Analysis and mitigation of GHG emissions in NEPA documents could satisfy one or more of these triggers, warranting a potential EU rating. Faced with the possibility of this negative ranking from EPA, the lead agency may have an incentive to commit to binding mitigation measures to reduce its projected emissions to a level that ameliorates EPA's concerns.

Even where an agency does commit to mitigation, such an approach would not be without its problems. The key to either of these scenarios is binding the applicant to implementation of the mitigation measures it identified and ensuring adequate enforcement.³¹⁸ However, potential problems include a lack of applicant control over mitigation measures,³¹⁹ feasibility of mitigating all the increased emissions below the level of significance,³²⁰ and questions about the applicability of requiring mitigation of other adverse environmental effects acknowledged in NEPA documents. However, none of these issues render these recommendations unworkable, and the fundamental tenets of NEPA demand that they be addressed.

CEQ regulations or NEPA amendments could be tailored in a way to address some of these issues, including creative mitigation measures that look beyond mere purchase of offsets. For instance, the cost and feasibility of mitigation measures should be analyzed across all facets of the project, creating a smorgasbord of options. Narrow drafting of CEQ regulations or NEPA amendments specific to climate change could also limit the risk of a slippery slope, where litigation could commence over whether the new measures that apply to climate change

318. See Gerrard, *supra* note 20, at 24 (questioning monitoring and enforcement of such mitigation measures).

319. Haroff & Moore, *supra* note 68, at 182–83.

These rules are clearly not intended to apply to highly-generalized impacts associated with a global phenomenon like climate change, caused by both domestic and internationally-related activities diffusely spread across the planet. In the case of agencies like OPIC and Ex-Im, a requirement to prepare detailed EAs under NEPA for proposed fossil-fuel or other greenhouse-gas-related projects will not appreciably reduce global warming. Such agencies have little capacity to influence either the construction or day-to-day operation of the projects they support, and mandating that they conduct a particularized environmental review for a proposed international project will not necessarily reduce the amount of greenhouse-gas-emissions from that project in any appreciable way.

Id.

320. See SUNRISE POWERLINK FINAL EIS, *supra* note 210, at 2-46 (follow “General Responses to Major Comments” hyperlink under “Comments and Responses on the Draft EIR/EIS”) (noting that no mitigation measures “were available at the time of the Draft EIR/EIS that could fully mitigate the GHG impacts to a less than significant level (i.e., result in no net increase of GHG)”).

should apply with equal force to every other adverse environmental effect identified in NEPA documents.

CONCLUSION

Consideration of climate change in NEPA documents is likely to become standard. But the Supreme Court precedent interpreting NEPA as purely procedural and the deference given to agencies under the APA has resulted in NEPA documents that merely pay lip service to NEPA's goals. Based on an empirical evaluation of BLM EISs, there does not appear to be any rational organizing principle for when climate change is included in an EIS. Meaningful consideration of climate change is missing from some EISs where it was expected. And the resulting documentation fails to consistently and thoroughly consider climate change.

If the United States wants to take the next step toward addressing climate change, Congress or the CEQ should intervene and implement four critical changes. First, Congress or the CEQ should make clear that a comparison of individual project emissions to the global, national, or even local GHG emissions base not only trivializes an individual project's contributions to climate change, but serves as an obstacle to meaningful consideration of climate change in the NEPA context. Second, Congress or the CEQ should acknowledge GHG emissions as a proxy for climate change impacts. Third, Congress or the CEQ should establish "significance" for purposes of climate change impacts (which will subsequently trigger an EIS) when one of two thresholds is satisfied: (1) where a proposed action exceeds a quantitative level of GHG emissions; or (2) where a proposed action falls under a high-GHG-emitting category. Lastly, absent Congressional amendments requiring agencies to mitigate the GHG emissions of their proposals, applicants may be more strongly "encouraged" to offset the net GHG emissions above the established threshold. Agencies may have an incentive to mitigate the GHG emissions to avoid having to complete an EIS or to minimize interagency disputes with the EPA and the CEQ. Used correctly, these measures can help realize both the informational and sustainability principles in NEPA, resulting in more meaningful consideration of climate change, less paperwork, and less GHG emissions.

APPENDIX A: 2007-2008 BLM EISS EVALUATED

No Consideration of Climate Change

Proposed Action	Type of Action	BLM Region (Year)
Moxa Arch Area Infill Gas Development Project	Develop 1,861 additional natural gas wells	Wyoming (2007)
Chapita Wells-Stagecoach Area Natural Gas Development	Develop 627 additional natural gas wells	Utah (2008)
Greater Deadman Bench Oil and Gas Producing Region	Develop 1,020 natural gas and 219 oil wells	Utah (2008)
East Lynn Lake Coal Lease	Lease 13,000 acres of coal	West Virginia (2008)
UNEV Pipeline	Construct a 399-mile oil pipeline	Utah (2008)
Overland Pass Natural Gas Liquids Pipeline	Construct a 760-mile natural gas pipeline	Wyoming (2007)
Emigrant Mine	Mining	Nevada (2007)
Three Rivers Stone Quarry Expansion Project	Mining	Idaho (2008)
Golden Sunlight Mine Pit	Mining SUPPLEMENT	Montana (2007)
Newmont Gold Mining	Mining SUPPLEMENT	Nevada (2007)
Leeville Mining Project	Mining	Nevada (2007)
Montana Tunnels Mine Project	Mining	Montana (2007)
Ironwood Forest National Monument	Resource Management Plan	Arizona (2007)

Discussion of Climate Change

Proposed Action	Type of Action	BLM Region (Year)
Maysdorf Coal Lease Application	Lease 230 million tons of coal reserves	Wyoming (2007)
Eagle Butte West Coal Lease Application	Lease 238 million tons of coal reserves	Wyoming (2007)

Price Field Office, Proposed Resource Management Plan	Resource Management Plan	Utah (2008)
Vernal Field Office, Proposed Resource Management Plan	Resource Management Plan	Utah (2008)
Smoky Canyon Mines Panel F and G	Mining	Idaho (2007)
Northeast National Petroleum Reserve- Alaska (NPR-A)	Lease millions of acres for oil and gas	Alaska (2008)
Pinedale Anticline Oil and Gas Exploration and Development Project	Develop 4,400 natural gas wells	Wyoming (2008)

Quantification of GHG

Proposed Action	Type of Action	Estimated MT CO _{2e} Amount (annual)
South Gillette Area Coal Lease Applications	Lease 827 million tons of coal reserves	348,477
West Antelope II Area Coal Lease Application	Lease 241 million tons of coal reserves	120,729
Toquop Energy Project	Construct 750 MW coal plant	>7,000,000
West Tavaputs Plateau Natural Gas Full Field Development Plan	Develop over 800 natural gas wells	>500,000
Betze Pit Expansion Project	Mining	972,594
Cortez Hills Expansion Project	Mining	386,000
Bald Mountain Mine North Operations Area Project	Mining	102,000
Indian Creek Mine Expansion	Mining	156,000
Moab Field Office Proposed Resource Management Plan	Resource Management Plan	83,271
Monticello Field Office Proposed Resource Management Plan	Resource Management Plan	19,826

Montana Statewide Oil and Gas Environmental Impact Statement and Proposed Amendment of the Powder River and Billings Resource Management Plans	Resource Management Plan SUPPLEMENT	980,000
Proposed Oil Shale and Tar Sands Resource Management Plan Amendments to Address Land Use Allocations in Colorado, Utah, and Wyoming	Resource Management Plan PROGRAMMATIC	221,639

Quantification and Mitigation of GHG

Proposed Action	Type of Action	Estimated MT CO ₂ e Amount (annual)
White Pine Energy Project	Construct 1,590-MW coal plant	12,000,000
Sunrise Powerlink Transmission Project	Construct a 150-mile transmission line	>163,000
U.S. Gypsum Company Expansion/Modernization Project	Expand manufacturing operations	47,500