NEPA and Assessment of Greenhouse Gas Emissions

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The growing national focus on greenhouse gas (GHG) emissions is creating new challenges for the application of one of the most venerable federal environmental laws, the National Environmental Policy Act (NEPA).[1] NEPA requires federal agencies to analyze the environmental effects of their proposed actions in formal environmental studies. The purpose of the law is to generate better information on environmental impacts for agency decisionmakers and the public, so that agencies can make better decisions.

Over the first four decades of NEPA's existence, there has been relatively little analysis of GHG emissions and climate change in NEPA documents. Today, with the growing understanding of the threat posed by global climate change, agencies increasingly are being asked to analyze GHG emissions in NEPA documents. For many federal proposals, such as those intended to address directly the issue of GHG emissions, an analysis of these issues would be very helpful to agencies and the public. NEPA is well positioned to play an important role in fostering better decisionmaking on those types of projects.

However, for the great majority of federal agency proposals, NEPA analysis of GHG emissions and climate change pose a much more difficult challenge. Virtually any human activity can cause the emission of GHGs such as carbon dioxide (CO_2), which means that most federal agency actions will have some effect on GHG emissions. This suggests that federal agencies must analyze in most of their NEPA documents the effect of their proposals on GHG emissions, and also potentially the broader effect of those emissions on the global climate. This has the potential to generate relatively useless information, to the extent that NEPA documents analyze the effects of climate change that is not meaningfully affected by the proposed action. It also has the potential to distort the NEPA process itself, to the extent that the GHG issue prevents agencies from preparing shorter environmental assessments (EAs) (due to the cumulative effect of a project's small increase in emissions combined with overall emissions of GHGs) and provides a tool for project opponents to force lengthy additional analysis through litigation. These and other issues will pose great challenges for federal agencies in the coming years.

How these issues are addressed is not entirely up to federal agencies and the executive branch. More so than other federal environmental laws, NEPA is driven by a common law of federal court decisions that result from lawsuits challenging agencies' NEPA compliance. Despite the deferential "arbitrary and capricious" standard of review, NEPA plaintiffs win a surprisingly high percentage of cases.[2] This means that the general trend of NEPA law is to require progressively more in the way of analysis.[3] The accretion of judge-made standards takes place over a period of years, as judicial opinions are issued that identify specific issues requiring more analysis. As more NEPA challenges are brought that focus on climate change issues, the likelihood is that agencies will be required to conduct more analysis in this area—rather than less—than agencies initially are inclined to conduct. Moreover, the issue of GHG emis-

1. 42 U.S.C. §§4321-4370f, ELR Stat. NEPA §§2-209.

2. The Council on Environmental Quality (CEQ) publishes on its website annual surveys that track cases filed and decided that involve NEPA claims. In 2008 (the most recent year for which the CEQ has published statistics), there were judgments for the defendant agencies in 77 NEPA cases and "adverse dispositions" (including injunctions, remands, and settlements) in 73 cases. *See* CEQ, 2008 Litigation Survey, *available at* http://ceq.hss.doe.gov/nepa/NEPA2008LitigationSurvey.pdf. Other commentators who surveyed the outcome of NEPA cases in the early 2000s found that plaintiffs won approximately 35-40% of the cases decided on the merits. *See, e.g.,* Lucinda Low Swartz, *Recent NEPA Cases* (2004) (noting that agencies won 60% of cases in 2004 where there was a substantive decision on NEPA), *available at* http://ceq.hss.doe.gov/nepa/caselaw/NEPA_Cases_2004_NAEP_paper.pdf.

3. For example, in 1981, the CEQ issued guidance entitled "40 Most-Asked Questions Concerning CEQ's NEPA Regulations," in which it indicated that an EA typically would be "not more than approximately 10-15 pages." 46 Fed. Reg. 18026 (Mar. 23, 1981) [hereinafter *Forty Questions*], *available at* http://ceq.hss.doe.gov/nepa/regs/40/30-40.HTM#35. In 2003, a federal task force reported that the typical "small" EA is 10-30 pages long, and the typical "large" EA is 50-200+ pages long. NEPA Task Force Report to CEQ, *Modernizing NEPA Implementation*, ch. 6 (Sept. 2003) [hereinafter *NEPA Task Force Report*], *available at* http://ceq.hss.doe.gov/ntf/report/chapter6.pdf. Similarly, the estimated time line to complete an environmental impact statement (EIS) increased from about one year in 1981 to up to six years by 2003. *Compare Forty Questions*, *with NEPA Task Force Report*. The increase in length and time of analysis can be attributed almost entirely to federal agencies attempting to proactively respond to issues raised by judicial decisions.

sions is likely to exacerbate conflicts that already exist in certain areas of NEPA case law (such as the evaluation of cumulative impacts and mitigation measures), and case law generated in the context of GHG emissions will affect the application of NEPA in other contexts.

Recent draft guidance from the president's Council on Environmental Quality (CEQ) does not appear to solve the problem.[4] The draft guidance generally states that agencies should analyze GHG emissions under NEPA, but says little about the limits that agencies may place on such analysis. The draft guidance also does not address every challenge posed by the NEPA analysis of GHG emissions, which means that it leaves those challenges to be worked out in the courts. If history is any guide, courts will err on the side of requiring more analysis rather than less.

This Article outlines some of the challenges to NEPA posed by the analysis of GHG emissions. In particular, it discusses the issue of cumulative impacts, the determination of significance, how to calculate GHG emissions, and analysis of mitigation. The Article then identifies some potential steps that federal agencies could take to minimize potential problems associated with the analysis of climate change issues under NEPA.

I. NEPA Fundamentals

The basic requirement of NEPA is that federal agencies must "include in every recommendation or report on proposals for . . . major Federal actions significantly affecting the quality of the human environment, a detailed statement . . . on the environmental impact of the proposed action. . . ."[5] The purpose of the statute is to provide information regarding the environmental effects of proposed actions, so that agency decisionmakers, and the public, can make more informed (and hopefully, better) decisions.[6]

NEPA is concerned with effects on the physical environment.[7] Regulations promulgated by the CEQ provide that agencies must analyze the direct effects of the proposed action (effects "which are caused by the action and occur at the same time and place"),[8] indirect effects (effects "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable"),[9] and cumulative impacts (impacts "which result[ ] from the incremental impact of the action when added to other past, present, and future reasonably foreseeable future actions").[10] Agencies also must analyze the environmental effects of possible mitigation measures.[11] Analysis of these impacts should be "full and fair."[12]

The depth of analysis under NEPA turns on the significance of a proposal's environmental impacts. For proposed actions with significant impacts (regardless of whether those impacts are negative or beneficial),[13] an agency must prepare an environmental impact statement (EIS).[14] For proposed actions that will not cause "significant impacts," cause no significant impacts not already analyzed in an EIS, or contain measures that mitigate any impacts below the level of significance, an agency need only prepare a shorter EA, paired with a finding of no significant impact (FONSI).[15] Whether a proposed action will have "significant impacts" not only affects the length of the environmental analysis, but also the time and cost it takes to complete the NEPA process. In 2003, a federal task force estimated that a "typical" EIS takes approximately one to six years to complete (compared to 9-18 months for a typical "large" EA), and costs between $250,000-$2,000,000 to prepare (compared with $50,000-$200,000 for the typical "large" EA).[16] These costs often are passed on to applicants for federal approvals.[17]

In practical terms, NEPA often drives federal agencies' consideration of environmental issues. Agencies typically document their compliance with most environmental laws through publicly released NEPA documents. Some agencies also structure their consideration of environmental issues around the preparation and completion of NEPA documents. Project opponents commonly use NEPA at least in part as the basis of their legal challenges, which cause agencies to devote even more attention on the NEPA process where they think there might be a challenge. All of these factors make the application of NEPA important in the environmental decisionmaking of federal agencies.

II. Challenges of Applying NEPA to GHG Emissions

A. *Defining the Relevant Impact Caused by the Proposed Action*

One of the threshold challenges associated with GHG emissions is identifying the environmental impacts that must be analyzed in a NEPA document. NEPA requires the analysis of environmental impacts that are caused by a proposed action. Environmental impacts are the effects of a proposal on the natural and physical environment. Since the emission of GHGs (like the emission of any

4. CEQ, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions (Feb. 18, 2010) [hereinafter *CEQ Draft Guidance*], *available at* http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf.
5. 42 U.S.C. §4332(2)(C).
6. 40 C.F.R. §1502.1; Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 348-50, 19 ELR 20743 (1989).
7. 40 C.F.R. §1508.14; Metropolitan Edison Co. v. People Against Nuclear Energy, 460 U.S. 766, 772, 13 ELR 20515 (1983).
8. 40 C.F.R. §1508.8(a).
9. 40 C.F.R. §1508.8(b).
10. 40 C.F.R. §1508.7.
11. *Robertson*, 490 U.S. at 351; 40 C.F.R. §1508.20, -.25(b), §1502.14(f), -.16(h).
12. 40 C.F.R. §1502.1; *see also* §1502.24 (analysis should be science-based).
13. 40 C.F.R. §1508.8, -.27(b)(1).
14. 40 C.F.R. §1501.4; *see, e.g.*, CARE Now, Inc. v. FAA, 844 F.2d 1569, 1575, 18 ELR 21081 (11th Cir. 1988) ("When mitigation measures compensate for otherwise adverse environmental impacts, the threshold level of 'significant impacts' is not reached so no EIS is required.").
15. 40 C.F.R. §1501.4(e).
16. *NEPA Task Force Report*, *supra* note 3, ch. 6.
17. *Forty Questions*, *supra* note 3, Question 16: Third Party Contracts.

other air pollutant) affects the physical world—gases go into the air—a discussion of how a proposed action would increase or decrease such emissions would seem to be required by NEPA.[18]

The mere emission of GHGs is not the real issue of concern, however. It is the effects of those emissions on the global climate that really matter. Those impacts to the climate are caused by total global emissions of GHGs over a long period of time; the effect of almost any individual project on global climate change is miniscule.[19] NEPA only requires analysis of those environmental impacts of which the proposed action is the "proximate cause."[20] Proximate cause is an amorphous concept that requires more than "but for" causation, i.e., but for the proposed action, the impact would not occur, and "turns on policy considerations and considerations of 'legal responsibility' of actors."[21] There is a very good argument that no individual project will cause global warming within the meaning of NEPA, because "but for" any individual project, that warming will occur anyway due to the effects of total global emissions of GHG, and because no individual project proposed by a federal agency can be considered legally responsible for the occurrence of global climate change.[22] If the causation requirement flows from the emissions caused by the individual project being studied, then there is no need to analyze the effects of global climate change in a NEPA document, and NEPA analysis could be limited to a discussion of how the proposal would increase or decrease GHG emissions.[23]

The analysis of global climate change itself cannot be so easily dismissed, however, because NEPA also requires an analysis of cumulative impacts. A "cumulative impact" is one "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 actions."[24] If the causation requirement flows from the cumulative impact of GHG emissions from the proposed action, combined with all past, present, and reasonably foreseeable other emissions of GHGs, then it suggests that the effects of global climate change will need to be studied for each proposed federal action that increases emissions of GHGs. To date, courts have given conflicting guidance regarding how the cumulative impact requirement should be applied.[25] Unfortunately, while the recent CEQ Draft Guidance on NEPA and Climate Change discusses the issue of cumulative impacts, and notes that "agencies may properly limit the scope of their cumulative effects analysis based on practical considerations," the CEQ has not clearly stated what this means in the context of projects causing GHG emissions.[26]

The issue of GHG emission and climate change is not the first area where this issue regarding cumulative impacts has come into focus. However, it has the potential to push the conflict over analysis of cumulative impacts to a whole new level. Climate change is the ultimate "small handle" problem, where an individual project has only a very small individual contribution to an extremely significant cumulative problem. Any court decisions in the area of cumulative impacts and climate change have the potential to drive the law of cumulative impacts regarding all environmental

18. NEPA documents commonly analyze how proposed actions will change the emission of air pollutants. However, those documents rarely, if ever, analyze every gas emission that might increase or decrease a result of a proposed action. Instead, NEPA documents typically focus only on those gases that raise potential regulatory, environmental, or health concerns, such as pollutants regulated under the Clean Air Act (CAA). For instance, until recently, many EISs did not even identify the amount of GHG emissions likely to be emitted from proposed actions. *See, e.g.,* N.C. Alliance for Trans. Reform v. U.S. Dept of Trans., 713 F. Supp. 2d 491, 516-21 (M.D.N.C. 2010). Nothing in NEPA or the CEQ regulations indicates that an agency need only analyze emissions of pollutants that are regulated under another statute, but limiting discussion to regulated substances focuses decisionmakers on issues that matter from a health or environmental standpoint. GHGs now fit this paradigm, since the U.S. Supreme Court has held that GHGs are "pollutants," Massachusetts v. EPA, 549 U.S. 497, 532, 37 ELR 20075 (2007), and EPA has started the process of regulating GHGs under the CAA. *See, e.g.,* U.S. EPA, PSD and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31514 (June 3, 2010). The CEQ has affirmatively stated that agencies should analyze GHG emissions.
19. *Massachusetts*, 549 U.S. 497; U.S. EPA, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496 (Dec. 15, 2009) [hereinafter U.S. EPA, Endangerment Finding].
20. Dept of Transportation v. Public Citizen, 541 U.S. 742, 767, 34 ELR 20033 (2004); Metropolitan Edison Co. v. People Against Nuclear Energy, 460 U.S. 766, 774, 13 ELR 20515 (1983) (NEPA requires a "reasonably close causal relationship between a change in the physical environment and the effect at issue"). NEPA also only requires analysis of environmental impacts that are "reasonably foreseeable." 42 C.F.R. §1508.8. In light of the various statements by the federal government that global climate change is occurring as a result of GHG emissions, e.g., U.S. EPA, Endangerment Finding, *supra* note 19, no federal agency could take the position that climate change itself is not "reasonably foreseeable."
21. *Dept. of Transportation*, 541 U.S. at 767.
22. The issue of proximate cause of individual sources of GHG emissions for the effects of global climate change currently is being addressed in other related contexts. The Supreme Court found that for purposes of standing, there is a causal connection between man-made GHG emissions and global climate change, and that U.S. motor vehicle emissions "make a meaningful contribution to greenhouse gas concentrations." *Massachusetts*, 549 U.S. at 523-24. Tort cases pending in three federal circuits also are raising the issue of whether individual emitters can be held legally responsible for the damages caused by climate change on individual plaintiffs. *See, e.g.,* Connecticut v. American Elec. Power Co., 582 F.3d 309, 345-46, 356, 39 ELR 20215 (2d Cir. 2009), *cert. granted,* 131 S. Ct. 813 (2010); *see also* Brief of Petitioner Washington Legal Foundation in Native Village of Kivalina v. ExxonMobil Corp., No. 09-17490, 39 ELR 20236 (9th Cir. 2009).
23. Under this approach, the cumulative effects of GHG emissions on global climate change could be analyzed instead as part of the identification of the baseline-affected environment. Global climate change resulting from overall GHG emissions would be the baseline for analysis, and a NEPA document could limit its analysis to the emissions specifically caused by a proposed action. *Cf.* CEQ, Considering Cumulative Effects §3 (1997), *available at* http://ceq.hss.doe.gov/nepa/ccenepa/sec3.pdf. One of the problems with this approach is that the effects of global climate change on environmental conditions in any given region are highly uncertain, which can make it extremely difficult to describe the environmental baseline in the specific area primarily affected by a proposed action. *Cf. CEQ Draft Guidance, supra* note 4, at 8, 11.
24. 40 C.F.R. §1508.7.
25. *See, e.g.*, *Dept. of Transportation*, 541 U.S. at 770 (stating in somewhat ambiguous circumstances that "[t]he 'cumulative impact' regulation required the FMCSA to consider the 'incremental impact' of the safety rules themselves . . ."); Center for Biological Diversity v. NHTSA, 538 F.3d 1172, 1216-17, 38 ELR 20214 (9th Cir. 2008) (the National Highway Traffic Safety Administration was required to describe the effects of new Corporate Average Fuel Economy standards on climate change given cumulative impacts).
26. *CEQ Draft Guidance, supra* note 4, at 10.

media. Some may welcome such a development on ideological grounds, because it would generally push agencies to consider stopping projects completely. It also likely would generate a great deal of useless information, because there would be no meaningful difference between the impacts of the "action" and the "no-action" alternatives.

B. *Cumulative Impacts and the Determination of Significance*

Perhaps the biggest challenge to NEPA posed by analysis of GHG emissions is the determination whether impacts are "significant." An agency may prepare an EA if a proposed action's impacts are insignificant (with or without mitigation measures), but must prepare an EIS if the impacts of a proposed action are significant and not already analyzed in another EIS.[27] Typically, agencies prepare EA/FONSIs for most federal actions because they determine that the impacts are insignificant.[28] This saves agencies time and money.[29]

Analysis of GHG emissions has the potential to create significant impacts for a great number of federal actions. The significance of a proposed action's impacts is determined by its direct, indirect, and cumulative impacts.[30] As discussed above, if agencies are required to analyze the impacts of a proposal's GHG emissions *and* the GHG emissions of all "other past, present, and future reasonably foreseeable future actions,"[31] which collectively are changing the planet's climate, then it is hard to imagine that most federal actions would not have significant environmental impacts.[32] This would suggest that agencies will be much less able to comply with NEPA through preparation of an EA/FONSI.

This could create incentives for agencies and applicants for federal approvals to restructure their proposals to avoid the risk of an EIS. The costs and delays associated with an EIS are substantial enough that some project proponents may be unable or unwilling to proceed if an EIS is required. Some may find it cheaper and more certain to reduce the GHG emissions of a project, or to pay to offset any increased emissions with emissions reductions elsewhere. Whether these would be good or bad outcomes depends on one's perspective. However, they highlight how the transactional costs of compliance with this entirely procedural statute can affect the substantive choices of agencies and those seeking federal approvals.

It would be a bad outcome if federal agencies were precluded from preparing EA/FONSIs for the great bulk of their decisions. Requiring EISs solely based on the impacts of global climate change would distract agencies from the real environmental choices within their control with the decisions at hand. NEPA is a very useful statute when it generates meaningful information that can encourage agencies to make better environmental choices. Simply generating more documentation about the impacts of global climate change for projects that do not appreciably affect GHG emissions does not further the goals of the statute.

C. *Calculating GHG Emissions*

For many projects, even calculating the amount of GHG emissions associated with a given proposal may be very difficult. To the extent that a proposed action's primary effects include changes in GHG emissions—for example, a fossil-fuel power plant or a change in motor vehicle fuel economy standards—then it might be relatively straightforward to determine the GHG emissions of that action.[33] However, other projects may affect GHG emissions largely through alleged secondary and induced impacts, which makes the calculation of GHG emissions far less straightforward. NEPA plaintiffs often argue that federal actions will induce third parties to change their behavior, e.g., road projects will cause suburban growth and sprawl.[34] Calculating the amount of GHG emissions in those circumstances would require agencies to make a series of assumptions about how a proposed action would affect the behavior of third parties, what those third parties might do (over what period of time), and how those induced activities would affect GHG emissions. Although it is possible to estimate emissions in these scenarios, such estimates run the risk of being highly speculative, because they rely on a series of assumptions regarding the decisions of third parties and the net effect of those persons' decisions on GHG emissions.[35] The calculation of such induced impacts is especially difficult in the context of GHG emissions, because those emissions can be affected (both positively and negatively) in many ways, for instance, by changes in people's driving habits.

The subject of induced impacts and NEPA already has been the subject of some debate over how far agencies should go in attributing changes in third-party behavior to

27. 40 C.F.R. §§1501.4, 1508.13.
28. In 1997, the CEQ estimated that federal agencies prepare 45,000 EAs in a typical year, compared to 450 EISs. CEQ, Considering Cumulative Effects Under NEPA §1 (1997), *available at* http://ceq.hss.doe.gov/nepa/ccenepa/sec1.pdf.
29. *Id.* (explaining how EAs save time and money for agencies); *see also NEPA Task Force Report*, *supra* note 3, ch. 6.
30. *E.g.,* 40 C.F.R. §1508.27(b)(7) ("Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.").
31. 40 C.F.R. §1508.7.
32. One set of actions that likely would be unaffected is renewable energy projects that avoid emissions of GHGs. To the extent that a project avoids those emissions, then it would not have emissions that would be added to other "past, present, and reasonably foreseeable future actions" for purposes of a cumulative impacts analysis. The net effect might be beneficial—lower emissions—but that beneficial impact would flow from the absence of an adverse impact (GHG emissions).
33. Consistent with this approach, the recent CEQ draft guidance encourages agencies to start by calculating the direct and indirect emissions of a proposed action. *CEQ Draft Guidance*, *supra* note 4, at 9-10. The draft guidance also directs agencies to use certain existing federal protocols for calculating emissions. *Id.* at 4.
34. *See, e.g.,* Sierra Club v. Marsh, 976 F.2d 763, 23 ELR 20321 (1st Cir. 1992) (challenge to port development plan based in part on analysis of secondary growth-inducing impacts); *see also* 40 C.F.R. §1508.8(b).
35. *Cf. CEQ Draft Guidance* at 4 ("Land management techniques, including changes in land use or land management strategies, lack any established Federal protocol for assessing their effect on atmospheric carbon release and sequestration at a landscape scale.").

a federal decision. The GHG emission issue has the potential to exacerbate that debate.

D. Analysis of Mitigation Measures

The issue of GHG emissions also has the potential to affect the analysis of mitigation measures. Agencies are required to include a detailed discussion of possible mitigation measures in an EIS.[36] "Mitigation" includes measures to minimize a given impact, as well as measures that "compensate[e] for the impact by replacing or providing substitute resources or environments."[37] One of the fault lines in NEPA case law is the extent to which agencies must analyze mitigation measures: some courts have required very detailed analysis of possible mitigation measures, while other courts have held more general discussion of mitigation measures to be sufficient.[38]

GHG emissions have the potential to exacerbate that fault line. There is an extremely wide range of "possible mitigation measures" for GHG emissions that might be subject to NEPA analysis. Depending on the nature of the proposed action, there may be many ways that GHG emissions could be minimized, since the amount of such emissions is affected by how power is generated, and how people and products are transported. In theory, an agency might analyze ways that people might minimize their driving of cars to work at a proposed project site (to minimize tailpipe emissions), or potential alternative sources of electricity for a proposed facility (to minimize electricity production from fossil fuels). There are even more possible measures to compensate for new GHG emissions from a given project through so-called offset projects (for instance, through planting of trees, reducing the tillage of soil, or better management of landfill gases).[39] Since climate change is a global phenomenon, and it does not matter where in the world emissions or offsets occur, possible mitigation measures span the globe. While it could be useful for agencies to learn and disclose ways to minimize or offset GHG emissions, at some point, the discussion of such mitigation measures could become burdensome and detract attention from the real choices before an agency. The degree to which agencies analyze mitigation measures is not entirely in their hands, since courts have driven the scope of analysis required by NEPA.

III. Potential Solutions

A. Tiering

One of the simplest ways that federal agencies could deal with the challenge of GHG emissions under NEPA would be to issue one or more programmatic EISs that could be used for purposes of tiering. Under the CEQ's NEPA regulations, an agency can issue a NEPA document concerning a specific proposal which "tiers off" of a more general NEPA document.[40] Typically, tiering takes place where there is an EIS that covers a broader range of projects or impacts, and then an agency later issues an EA that deals with a subset of issues or a specific example of the type of project addressed in general terms in the earlier EIS. If an agency's project-specific EA identifies only significant impacts already analyzed in the earlier EIS, then it need not prepare an EIS on that project.[41]

The effect of GHG emissions on global climate change could be a natural subject for tiering under NEPA. A federal agency periodically could issue a programmatic EIS on the cumulative effects of GHG emissions and the types of mitigation measures to address those effects. When agencies then prepare EAs or EISs on individual proposals that affect GHG emissions, they could refer to the analysis of the impacts of such emissions and potential mitigation measures contained in the programmatic EIS. In the case of EAs, so long as the EA does not identify any significant environmental impact not already analyzed in the programmatic EIS, the GHG emission aspect of the project would not require any further NEPA analysis. This would address the potential problems discussed above of requiring too much analysis on general climate change issues, and also of requiring EISs solely on the basis of the cumulative impacts of climate change.

The CEQ has recommended such a tiering strategy in its draft guidance. Specifically, the CEQ has proposed that agencies include discussion of GHG emissions in programmatic EISs that agencies may be issuing for specific programs.[42] The CEQ did not go so far as to suggest that agencies prepare programmatic EISs specifically to address the issue of GHG emissions, or to suggest that one federal agency conduct a single broad EIS that other agencies could use for purposes of tiering. The draft guidance's approach therefore is incrementally helpful, but will not obviate the need for agencies to spend significant time and money addressing the generalities of GHG emissions and climate change.

Even without preparation of a programmatic EIS, federal agencies may have opportunities for tiering. Federal agencies already have issued reports that broadly discuss the impacts of GHG emissions on climate change, and which identify the consequences of different levels of future GHG emissions. Most prominently, in December 2009,

36. Robertson v. Methow Valley Citizens Ass'n, 490 U.S. 332, 351 (1989); 40 C.F.R. §1508.20, -.25(b), §1502.14(f), -.16(h).
37. 40 C.F.R. §1508.20(b), -(e).
38. *See, e.g.*, Citizens Against Burlington v. Busey, 938 F.2d 190, 206, 21 ELR 21142 (D.C. Cir. 1991) (only a "reasonably complete discussion of possible mitigation measures" is required); O'Reilly v. U.S. Army Corps of Eng'rs, 477 F.3d 225, 231-32, 37 ELR 20021 (5th Cir. 2007) (finding NEPA violation based on inadequate analysis of mitigation).
39. Some of the "offset" projects identified in the 2009 proposed American Clean Energy and Security Act (sometimes referred to as the Waxman-Markey Bill) include altered tillage practices, reduction of nitrogen fertilizer use, urban tree planting and maintenance, and manure management. H.R. 2454, 111th Cong. §503(b)(1) (2009).
40. 40 C.F.R. §1502.20, -.28.
41. Sierra Club v. Espy, 38 F.3d 792, 796, 24 ELR 20888 (5th Cir. 1994).
42. *CEQ Draft Guidance, supra* note 4, at 5.

the U.S. Environmental Protection Agency (EPA) issued its so-called endangerment finding under the Clean Air Act[43] that GHG emissions are likely to endanger human health and welfare through the effects of climate change.[44] The CEQ in its draft guidance also has pointed to reports issued by the U.S. Global Change Research Program as documents that agencies can incorporate by reference pursuant to 40 C.F.R. §1502.21.[45] One could argue that such reports are the functional equivalent of an EIS, to the extent that they address the cumulative impacts of GHG emissions, and then to tier-off of them in issuing project-specific EAs pursuant to 40 C.F.R. §1502.20. This approach might require an extension of existing law regarding what type of document is the functional equivalent of an EIS,[46] but with appropriate guidance from the CEQ, courts may be willing to agree that these general government reports are adequate in this context for purposes of tiering.

B. Regulatory Identification of Significance Thresholds

Another potential solution to the issue of determining significance of impacts would be to establish through regulation a level of GHG emissions that are deemed to be significant. The CEQ presumably could do this by amending its NEPA regulations to identify a specific amount of GHGs in CO_2 equivalents, identify a percentage increase or decrease in emissions, or a combination of the two approaches. Under this approach, agencies would not have to prepare EISs solely based on GHG emissions unless the proposed action's emissions would exceed the threshold identified in the regulation. The effect could be to greatly reduce the chance that most federal agency actions would require preparation of an EIS based solely on the level of GHG emissions.

There are some drawbacks to this potential solution. It only would address one of the challenges to NEPA posed by GHG emissions, specifically, the determination of significance. To the extent that courts do not start to generally require preparation of EISs based on the GHG emission issue, identification of a significance threshold could encourage them to do this for those projects that are over the threshold where they might not otherwise do so. The existence of a threshold also might encourage NEPA plaintiffs to challenge the calculation of GHG emissions by focusing on induced emissions, thereby exacerbating the issue regarding analysis of induced impacts such as suburban sprawl.

The CEQ has proposed a variant of this approach in its draft guidance, where it states that annual direct emissions of 25,000 metric tons or more of CO_2-equivalent GHGs would be "meaningful" for purposes of NEPA.[47] This apparently represents the level at which agencies need to consider GHG emissions at all in a NEPA document.[48] However, the CEQ pointedly stated that it "does not propose this as an indicator of a threshold of significant effects,"[49] which means that it does not address the issue of when an EIS need be prepared based on GHG emissions alone. Moreover, there are questions about the weight of this specific guidance in court challenges: it is unclear why a court would give deference to what is a technical judgment by the CEQ of the level of emissions that are "meaningful," especially when that judgment is based on unexplained technical choices, e.g., only counting "direct" emissions and not indirect and induced emissions. What may seem meaningful to the CEQ (or an agency) may not seem meaningful to a judge deciding a case. The draft guidance regarding meaningful levels of emissions therefore is a start, but does not address one of the proverbial elephants in the room regarding GHG emissions and NEPA.

C. Cap and Trade and NEPA

A cap-and-trade system for GHG emissions could have the potential to greatly simplify the analysis of GHG emissions under NEPA. In general terms, a cap-and-trade system would not restrict any person's emissions of GHG emissions, but would restrict overall emissions and let the market set a price for such emissions. Cap and trade is intended to reduce cumulative emissions of GHGs without directly regulating the emissions of individual sources.

43. 42 U.S.C. §§7401-7671q, ELR Stat. CAA §§101-618.
44. U.S. EPA, Endangerment Finding, *supra* note 19.
45. *CEQ Draft Guidance, supra* note 4, at 5, 8 (referring to the Synthesis and Assessment Products, *available at* http://www.globalchange.gov/publications/reports).
46. The doctrine of functional equivalence typically has been used to excuse NEPA compliance "where the particular action being undertaken is subject to rules and regulations that essentially duplicate the NEPA inquiry." Catron County Bd. of Comm'rs v. U.S. Fish & Wildlife Serv., 75 F.3d 1429, 1435, 26 ELR 20808 (10th Cir. (1996) (holding that designation of critical habitat under the Endangered Species Act was not the functional equivalent of an EIS); *see also* Municipality of Anchorage v. United States, 980 F.2d 1320, 1329, 23 ELR 20302 (9th Cir. 1993) (holding that EPA duties under the Clean Water Act are the functional equivalent of NEPA requirements); Portland Cement Co. v. Ruckelshaus, 486 F.2d 375, 384-86, 3 ELR 20642 (D.C. Cir. 1973) (holding that a portion of CAA requires the functional equivalent of an EIS). The federal reports on climate change may not contain every element of an EIS, e.g., analysis of alternatives, and some courts may reject reliance upon them for purposes of NEPA compliance. *Cf.* South Fork Band Council of Western Shoshone of Nevada v. Department of the Interior, 588 F.3d 718, 726, 40 ELR 20276 (9th Cir. 2009) ("A non-NEPA document . . . cannot satisfy a federal agency's obligations under NEPA."). However, they serve the same function of informing decisionmakers and the public of the cumulative impacts of GHG emissions, so an argument can be made that agencies should be allowed to tier from those reports in preparing NEPA documents on individual projects.
47. *CEQ Draft Guidance, supra* note 4, at 1-3. The 25,000 ton-per-year (tpy) threshold is based on EPA's threshold for reporting GHG emissions under the CAA, which was chosen because it captures 85-90% of all such emissions in the United States and limits the number of people who need to submit reports. *Id.* at 3 n.2 (citing U.S. EPA, Mandatory Reporting of Greenhouse Gases Final Rule, 74 Fed. Reg. 56260 (Oct. 30, 2009)). EPA did not set the 25,000 tpy threshold based on a judgment that emissions at lower levels do not cause global climate change; the threshold was picked for purposes of regulatory efficiency in the reporting program.
48. At least one court apparently has followed this approach (without referencing the CEQ draft guidance), when it held that a timber project need not discuss GHG emissions and climate change because the proposed project would only have minor impacts. Hapner v. Tidwell, 621 F.3d 1239, 1245, 40 ELR 20248 (9th Cir. 2010) (rejecting challenge to EA prepared for timber sale).
49. *CEQ Draft Guidance, supra* note 4, at 2.

To the extent that emissions from a given proposed action are subject to a cap-and-trade system,[50] GHG emissions from that individual action arguably would have no meaningful impact on climate change, because cumulative emissions are being controlled. This also could mean that the climate change effects of a proposed action would not be significant, avoiding the need for an EIS based solely on the issue of climate change. In theory, this would reduce the need for analysis of GHG emissions in NEPA documents for most proposed actions.[51]

Analysis of mitigation measures also could change. Under the primary cap-and-trade proposals put forward in the 111th Congress, covered emission sources can account for their emissions by submitting either emission allowances or emission offsets, including international allowances and offsets.[52] Those cap-and-trade proposals contemplate that allowances and offsets would be bought and sold on open markets. Under this system, possible mitigation measures could be located in foreign countries,[53] and it might be very difficult to identify what specific mitigation measure is being used to compensate for the GHG emissions of a given proposed action. To the extent that agencies (and courts) assume that the cap-and-trade system actually is working as intended, it may be enough to simply explain how needed allowances or offsets will be purchased on an open market.

The effect of a cap-and-trade system on NEPA is speculative, because it is unlikely that the U.S. Congress will enact such a system (at least in the near future), the structure of such a system would make a difference regarding the application of NEPA, and Congress could expressly address the issue of NEPA in legislation adopting any such system. However, one of the opportunities presented by cap and trade is the simplification of GHG emission analysis under NEPA.

IV. Conclusion

NEPA is an important law because it encourages federal agencies to make better decisions related to environmental impacts. To the extent that federal agencies are presented with meaningful choices regarding GHG emissions when considering proposed actions, then analysis of those emissions under NEPA should help federal decisionmaking. However, for the great majority of federal actions, the issue of GHG emissions has the potential to overwhelm NEPA analyses with information that may distract agencies from the real environmental choices before them. It is in everybody's interest that this not happen.

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50. Most cap-and-trade proposals would not make all emissions subject to the cap-and-trade system. For instance, it has been estimated that the proposed 2010 American Power Act (introduced by Sens. John Kerry (D-Mass.) and Joe Lieberman (I-Conn.)) in May 2010 would only capture approximately 67% of non-hydrofluorocarbon GHG emissions in the first year of its proposed cap-and-trade system. John Larsen, Emissions Reductions Under Pollution Reduction Proposals in the 111th U.S. Congress 6 (World Resources Inst. June 8, 2010), *available at* http://pdf.wri.org/usclimatetargets_2010-06-08.pdf. To the extent that a proposed action would generate emissions not subject to the cap-and-trade system, then arguably there might be heightened NEPA requirements related to those emissions.
51. Federal actions that still would need heightened NEPA analysis related to GHG emissions presumably would include those relating to the structure and administration of the cap-and-trade system itself, e.g., decisions related to the annual cap on total emissions, or the type of offsets to be authorized.
52. *E.g.,* H.R. 2454, 111th Cong. §722(a) (2009).
53. *E.g.,* H.R. 2454, 111th Cong. §§728, 743 (2009).