

NEPA Review of Climate Change

by Barry Kellman

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The National Environmental Policy Act (NEPA)¹ must be central to how the United States addresses the cardinal imperative of climate change. NEPA is the foundation of the nation's environmental planning process, serving to prohibit actions that bypass consideration of environmental consequences. Climate change is a global phenomenon that pushes NEPA to its very limits, raising difficult questions about which actions produce specific impacts that deserve NEPA consideration. Officials, jurists, and all lawyers should appreciate the legal issues that inevitably arise when NEPA and climate change are put together.

The 2014 Draft Guidance² issued by the White House Council on Environmental Quality (CEQ) has substantially increased understanding about how NEPA can contribute to informed consideration of the accelerating impacts of climate change.³ But the magnitude of NEPA's contribution depends on how thoughtfully courts address questions that are among the most perplexing in environmental jurisprudence.

This Comment addresses these questions in light of recent case law that illuminates when and how to consider climate change. Cases from federal appellate and district courts are exposing several conceptual fissures in the application of NEPA obligations to climate change. I conclude that while substantial progress has been made to optimize NEPA's contribution to the U.S. climate change response, the first wave of lower court decisions concerning NEPA's requirements in this context perpetuates ambiguities as to what federal agencies must do—ambiguities that might be dangerous to leave unresolved.

I. Introduction

It would be unfair to deride the law in this area as rud-derless, or to say that courts face questions of NEPA and climate change without substantial doctrinal principles to guide their opinions. Some questions regarding the law of NEPA and climate change are no longer particularly con-

troversial because of a solidifying legal consensus about their answers.

A. *Points of Consensus on NEPA and Climate Change*

NEPA requires all federal agencies, in connection with major federal actions significantly affecting the environment, to prepare a detailed environmental impact statement (EIS) that incorporates environmental considerations into their planning and decisionmaking through a systematic interdisciplinary approach. An EIS must inform officials and the public of the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity. NEPA further mandates that agencies recognize “the global character of environmental problems” so as to anticipate and prevent “a decline in the quality of mankind's world environment.”⁴

When initially considered in connection with NEPA's obligations, climate change was viewed as too complex, uncertain, and controversial to be a cognizable issue in NEPA review. The globalism of climate change, where so much of the cause is due to activities beyond the scope of U.S. regulatory law and where any single proposed action would have negligible impact,⁵ seemingly defied useful consideration in the context of decisions whether to approve leases for coal or oil extraction or to license a power plant or other infrastructure project. Moreover, there was vast uncertainty as to how particular actions might generate emissions of greenhouse gases (GHGs), how those GHGs might accelerate climate change, and how climate change might impact the

4. 42 U.S.C. §4332(2)(F).

5. Prof. Madeline June Kass has explained that worldwide combined manufacturing and construction industries contributed just 10% of total GHG emission in 2000, meaning any single individual manufacturing facility project would represent a minute fraction of a minor percentage of total emissions. From another perspective, the United States—now the second largest contributor of worldwide GHG emissions—contributes approximately 20% of worldwide GHG emissions per year. If all U.S. sources combined (land use, forestry, transportation, energy, manufacturing, construction, agriculture, shipping, aviation, industrial processes, etc.) make up just a fifth of worldwide emissions, any one U.S. emitter, in any one sector, will undoubtedly be truly minuscule by comparison.

Madeline June Kass, *A NEPA-Climate Paradox: Taking Greenhouse Gases Into Account in Threshold Significance Determinations*, 42 IND. L. REV. 47, 61-62 (2009).

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

2. Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews, 79 Fed. Reg. 77801 (Dec. 24, 2014) [hereinafter CEQ Guidance], available at <https://federalregister.gov/a/2014-30035>.

3. See generally Nicholas C. Yost, *EPA and Climate Change: Practitioners Should Take Note of CEQ's New Guidance*, 45 ELR 10646 (July 2015).

United States. To consider the causal relationships among emissions, impacts, and policy choices in the NEPA context might suggest a futile exercise of trying to link uncertain variables. Against a phenomenon of planetary magnitude about which so little was known, and especially in view of no clear policy direction from the U.S., NEPA consideration of climate change was viewed as premature, if not altogether beyond the scope of any agency's responsibility.

The U.S. Court of Appeals for the Eighth Circuit's 2003 decision in *Mid States Coalition for Progress v. Surface Transportation Board* rejected this view.⁶ At issue was the approval of a \$1.4 billion proposal—dubbed the “largest and most challenging rail construction proposal” ever before the Board—for 280 miles of new rail construction and 600 miles of rail upgrades to transport coal from mines to power plants more quickly and at less cost. The 5,000-page draft EIS was held to be inadequate for failing to consider how the project, by decreasing the price of coal, would result in increased GHG emissions. The court found that by making coal more attractive in comparison with other potential fuel sources, the project would most assuredly affect the nation's long-term demand for coal. In response to the project proponents' position that the effects were too speculative, the court instructed that the “nature of the effect . . . is far from speculative”; it was only the extent of the effect that is speculative and, as such, it must be evaluated under NEPA.⁷

The U.S. Court of Appeals for the Ninth Circuit reinforced this understanding of NEPA requirements in *Center for Biological Diversity v. National Highway Traffic Safety Administration*,⁸ holding that, with regard to setting corporate average fuel economy (CAFE) standards for motor vehicles, “[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct.” The court instructed that the objection that climate change is largely a global phenomenon comprising 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.”⁹ Any action might have an “individually minor” effect on the environment,¹⁰ but be “collectively significant . . . over a period of time.”¹⁰

The perspective adopted by these two decisions was reinforced by the U.S. Supreme Court's 2007 decision in *Massachusetts v. EPA*,¹¹ which, albeit not specifically a NEPA challenge, reprimanded agencies for disregarding climate change as either too huge or too uncertain to consider. Writing for the majority, Justice John Paul Stevens clarified that the government does not “generally resolve massive problems in one fell regulatory swoop”; and “that the first step might be tentative does not by itself support the notion that federal courts lack jurisdiction to determine whether that step conforms to law.”¹² Rather, the government should begin to address climate change as it does with all “massive problems”—by “refining [its] approach as circumstances change and [developing] a more nuanced understanding of how best to proceed.”¹³ The government is not unburdened of its duty to consider ways to effectively “slow or reduce” climate change simply because potential remedial regulations are not the final solution.¹⁴

To similar effect was the Ninth Circuit's decision in *California Wilderness Coalition v. U.S. Department of Energy*,¹⁵ which, although not strictly focusing on climate change, instructed that a broad agency program that encourages activity, even if it has only speculative or difficult-to-measure effects and does not direct any immediate behavior, is precisely the type of determination that calls for NEPA review. While the challenged action did not authorize specific projects, it would “encourage, through a number of incentives,” projects through which significant environmental impacts could be assessed.¹⁶ The court noted that, although “[t]he effects may be difficult to measure and may be determined ultimately to be too imprecise to influence the [major federal action] . . . this is precisely the type of determination” required by NEPA.¹⁷

These decisions and the mounting imperative of addressing climate change leave little dispute as to whether NEPA requirements include consideration of climate change impacts. Today, the more pressing questions focus on when or how such consideration is to be undertaken. Before examining how recent court decisions have addressed these questions, I will first discuss how CEQ has clarified NEPA consideration of the impacts of climate change.

B. The CEQ Guidance

In response to calls to increase the level of scrutiny of federal actions causing GHG emissions, CEQ released draft guidance in December 2014 advising federal agencies how they should consider the effects of GHGs and climate

6. 345 F.3d 520 (8th Cir. 2003).

7. *Id.* at 549. After remand, preparation of a supplemental EIS, and the Surface Transportation Board's re-approval of the rail line, the court found sufficient the EIS' projection that air emissions associated with additional coal usage would be less than 1%; moreover, the Eighth Circuit approved the Board's conclusion that the local impacts were “speculative” and “ultimately unforeseeable,” and that it was thus unnecessary to require increased mitigation. *Mayo Found. v. Surface Transp. Bd.*, 472 F.3d 545, 556, 37 ELR 20006 (8th Cir. 2006). See generally Alana M. Wase, *Climate Change Impacts and NEPA: Overcoming the Remote and Speculative Defense*, 72 MD. L. REV. 967 (2013), available at <http://digitalcommons.law.umaryland.edu/mlr/vol72/iss3/6/>.

8. 538 F.3d 1172, 1217, 38 ELR 20214 (9th Cir. 2008).

9. *Id.*

10. *Id.*

11. 549 U.S. 497, 37 ELR 20075 (2007).

12. *Id.* at 524.

13. *Id.*

14. *Id.*

15. 631 F.3d 1072, 41 ELR 20078 (9th Cir. 2011).

16. *Id.* at 1101-03.

17. *Id.* at 1103.

change in NEPA reviews of their proposed actions, including land and resource management actions. The Guidance instructs agencies how to assess both the impact of the proposed project on climate change and the impact of climate change on the proposed project. Altogether, the Guidance advances the use of NEPA review for encouraging consideration of mitigation measures and alternatives for reducing GHG emissions.

The CEQ Guidance advises agencies that climate change can magnify the damaging strength of certain effects of a proposed action.¹⁸ Climate change can increase the vulnerability of a resource, ecosystem, or human community, causing a proposed action to result in consequences that are more damaging than prior experience with environmental impacts analysis might indicate. For instance, climate change can affect the integrity of a development or structure by exposing it to a greater risk of floods, storm surges, or higher temperatures.

Agencies should consider the specific effects of the proposed action (including the proposed action's effect on the vulnerability of affected ecosystems), the nexus of those effects with projected climate change effects on the same aspects of our environment, and the implications for the environment to adapt to the projected effects of climate change.¹⁹ Agencies should also consider the particular impacts of climate change on vulnerable communities where this may affect the design of the action or the selection among alternatives.

When assessing the effects of climate change on a proposed action, an agency should start by identifying the reasonably foreseeable future condition of the affected environment for the "no action" alternative, based on available climate change measurements, statistics, observations, and other evidence.²⁰ The obligation of an agency to discuss particular effects turns on "a reasonably close causal relationship between the environmental effect and the alleged cause."²¹

The process of adaptive planning requires constant learning to reduce uncertainties and improve adaptation outcomes. Where climate change effects are likely to be important but there is significant uncertainty about such effects, it may be useful to consider the effects of any proposed action or its alternatives against a baseline of reasonably foreseeable future conditions that is drawn as distinctly as the science of climate change effects will support. In order to ensure that decisions are properly carried out, monitoring strategies should be modified as more information becomes available and best practices and other experiences are shared.

II. Recent NEPA-Climate Change Case Law

The CEQ Guidance goes a long way toward shaping NEPA review of actions that potentially affect climate change.

Many of the questions that occupied judicial attention are no longer particularly controversial. Yet subtler questions have come to the fore, accounting for a rise in the volume of NEPA-climate change case law. These cases center on initiatives for extracting and combusting fossil fuels, challenging actions of agencies typically within the U.S. Departments of the Interior (DOI) or Energy (DOE).

The cases rapidly working their way through the federal judiciary present a more nuanced picture of the law of NEPA and climate change. Whether the proposed action is leasing a federally supervised tract for coal mining or oil drilling, approving a transportation corridor for moving fossil fuels, or licensing a facility for combusting these fuels, the legal issues tend to focus on when and how agencies considered aspects of climate change in making their decisions.

For purposes of explication, I organize the cases around three issues: (1) When should an agency undertake a programmatic review of its policies and programs in light of climate change? (2) How should an agency consider the impacts of potential GHG emissions, and what constitutes inadequate consideration? (3) Must an agency consider an action's indirect contribution to fossil fuel dependence? As to each issue, I examine two recent cases.

A. Programmatic Review of Climate Change

Climate change is perhaps the world's greatest example of aggregate or cumulative actions added to other past, present, and reasonably foreseeable future actions.²² The effects result from human activities that accumulate within and beyond the temporal and geographic boundaries of proposed action.²³ Addressing the phenomenon of climate change implicitly calls for programmatic NEPA review of relevant activities.

I. When Should an Agency Undertake Programmatic Review?

According to the CEQ Guidance, climate change impacts may usefully be considered as part of a programmatic analysis of agency activities that considers the "overall, cumulative impact of the action proposed (and of further actions contemplated)."²⁴ Federal programs that affect emissions or sinks and proposals regarding long-range energy, transportation, and resource management programs lend themselves to a programmatic approach.²⁵ "Such aggregated discussion may be useful in connection

18. CEQ Guidance, *supra* note 2, 79 Fed. Reg. at 77828.

19. *Id.* at 77813.

20. *Id.* at 77820.

21. *Id.* at 77808 (quoting *Department of Transp. v. Public Citizen*, 541 U.S. 752, 767, 34 ELR 20033 (2004)).

22. 40 C.F.R. §1508.7 (2015). See CEQ Guidance on the Consideration of Past Actions in Cumulative Effects Analysis (June 24, 2005), available at http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-PastActsCumulEffects.pdf.

23. See generally CEQ, CONSIDERING CUMULATIVE EFFECTS UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT (1997).

24. 35 Fed. Reg. 7390-91 (1970).

25. For example, if GHG emissions or climate change and related effects in general are included in a broad (i.e., programmatic) EIS for a program, subsequent NEPA analyses for actions implementing that program at the project level should, if useful in the NEPA analysis for that decision, tier from the

with requirements for agencies to implement sustainable practices for energy efficiency, GHG emissions avoidance or reduction, petroleum products use reduction, and renewable energy, including bioenergy as well as other required sustainable practices.”²⁶

With regard to when a programmatic NEPA review should be prepared, such determination should be based on two questions: (1) could such programmatic review be sufficiently forward-looking to contribute to the agency’s basic planning of an overall program; and (2) would such programmatic review provide the agency the opportunity to avoid “segmenting” the overall program from subsequent individual actions, and thereby avoid unreasonably constricting the scope of the environmental review? A programmatic review that considers climate change impacts should present the agency’s anticipated timing and sequence of decisions, which decisions are supported by the programmatic NEPA document and which decisions are deferred for some later time, and the time frame or triggers for a tiered NEPA review. According to CEQ, by presenting the nature of subsequent tiered decisions, agencies can focus the scope and development of alternatives and mitigation measures.²⁷

2. Recent Case Law on Programmatic Review

The CEQ Guidelines recommend consideration of climate change in connection with programmatic environmental review, but such programmatic review is not routinely performed. Indeed, once accomplished, programmatic review is rarely re-undertaken absent a fundamental change in how the program operates. In effect, there is nothing to compel agencies to perform a programmatic review of climate change impacts even as they approve applications for mining or power plants. Environmental advocates have challenged the nonperformance of climate change programmatic reviews, but these challenges have not fared well in the courts.

The first decision explicitly to consider the need for programmatic review in connection with climate change was *Center for Biological Diversity v. U.S. Department of Interior*.²⁸ At issue was the administrative process for expanding offshore oil and gas development in Outer Continental Shelf (OCS) areas over the 2007-2012 period, including expansion of lease offerings off the Alaska coast. Environmental petitioners argued that the leasing program violated NEPA because DOI failed to take into consideration the

effects of climate change on the OCS areas and the leasing program’s effects on climate change.

The U.S. Court of Appeals for the D.C. Circuit ruled that the petitioners’ NEPA-based claims were not ripe because no lease sales had yet occurred; the leasing program “had therefore not yet reached that ‘critical stage’ where an ‘irreversible and irretrievable commitment of resources’ has occurred that will adversely affect the environment.” To allow a petitioner to bring such NEPA challenges to a leasing program when no rights have yet been implicated or actions taken, said the court, would essentially create an additional procedural requirement for all agencies adopting any segmented program. This would impose too onerous an obligation, and would require an agency to divert too many of its resources at too early a stage in the decisionmaking process.

The 2015 decision in *Western Organization of Resource Councils v. Jewell*²⁹ posed a converse challenge that similarly failed. The plaintiffs sought to compel DOI to supplement the 1979 EIS of its federal coal management program and to assess the effect of the program on the global climate. The plaintiffs argued that the program is an ongoing federal action and that DOI continues to issue new leases under the program with a significant impact on climate change.

The court ruled that agencies must supplement an EIS only where the agency plans on making “substantial changes [to] the *proposed action* that are relevant to environmental concerns’ or where ‘there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.’”³⁰ As the agency was not contemplating issuance of leases in a manner other than what was contemplated in 1979, the court found no legal basis to order programmatic NEPA re-review. According to the court, “[o]nce the federal coal management program went into effect, the proposed federal action came to an end. That the federal defendants continue to issue leases in a manner consistent with the federal coal management program introduced in 1979, does not constitute an ‘ongoing major Federal action[.]’”³¹

There is a Catch-22 quality to these two decisions. In the *Center for Biological Diversity* decision, consideration of the impacts of climate change was disallowed as premature. The court said that, with regard to the process for expanding off-shore oil and gas development, NEPA consideration should await the issuance of leases, the climate change impact of which can be more appropriately assessed. In the *Western Organization* decision, consideration of the impacts of climate change was disallowed as too late: The 1979 federal coal management program is a fait accompli, no longer an ongoing action subject to NEPA review. For proponents of consideration of climate change’s impacts under NEPA, these cases represent narrow goal-

programmatic statement and summarize the relevant issues discussed in the programmatic statement. 40 C.F.R. §§1502.20, 1508.28 (2012).

26. NANCY H. SUTLEY, CEQ, DRAFT NEPA GUIDANCE ON CONSIDERATION OF THE EFFECTS OF CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS 5 (2010), available at https://ceq.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf.

27. MICHAEL BOOTS, CEQ, EFFECTIVE USE OF PROGRAMMATIC NEPA REVIEWS 15-16 (2014). See also *Piedmont Envtl. Council v. Federal Energy Regulatory Comm’n*, 558 F.3d 304, 316, 39 ELR 20036 (4th Cir. 2009) (quoting *National Wildlife Fed’n v. Appalachian Reg’l Comm’n*, 677 F.2d 883, 888-89, 11 ELR 20386 (D.C. Cir. 1981).

28. 563 F.3d 466 (D.C. Cir. 2009).

29. 2015 WL 5076976 (D.D.C. Aug. 27, 2015).

30. *Id.* at *3 (citing 40 C.F.R. §1502.9(c)(1)(i)-(ii)) (alterations in original).

31. *Id.* at *4 (quoting *Norton v. Southern Utah Wilderness Alliance*, 542 U.S. 55, 73, 34 ELR 20034 (2004)) (some internal citations omitted).

posts through which it is difficult to find the precise right moment to demand that an agency perform such consideration. Meanwhile, as mining and drilling applications move forward, absent reversal of *Western Organization of Resource Councils*, programmatic consideration of climate change is not obligatory.

B. Consideration of GHG Impacts on Climate Change

NEPA-related questions concerning how fossil fuels are extracted and used are central to climate change because mining, drilling, transporting, and combusting these fuels generate GHG emissions. The imperative of considering policy measures to mitigate such direct emissions in connection with NEPA review of a lease or license application is not seriously disputed. However, with regard to any particular action, its impact on climate change is likely to be insubstantial; climate change is such a huge phenomenon as to render its consideration in every leasing decision seemingly impractical, or at least beyond a reviewing court's legal authority to compel. Throughout recent NEPA cases in this domain, therefore, is a quandary about how to scale the magnitude of an action's impact on climate change with the intensity of NEPA inquiry.

I. CEQ Guidance on Considering GHG Impacts

The CEQ Guidance cautions against attempting to link specific climatological changes or their environmental impacts to a particular project or emissions, as such direct linkage is difficult to isolate and to understand. Instead, emissions can serve as a reasonable proxy for decisionmakers and the public to assess potential climate change impacts and make a reasoned choice among alternative actions.³²

Thus, actions entailing 25,000 metric tons of direct carbon dioxide-equivalent (CO₂e) emissions on an annual basis—the figure that evokes stationary source reporting obligations under the Clean Air Act (CAA)³³—should trigger NEPA review, although other actions with emissions below that threshold could deserve NEPA review depending on the context and intensity of the action's environmental impacts.³⁴ Examples of proposals for federal agency action that may warrant a discussion of the GHG emissions include approval of a large solid waste landfill, approval of energy facilities such as a coal-fired power plant, or authorization of a methane-venting coal mine.

As to such significant projects, agencies should estimate the quantity of the proposed action's cumulative emissions over the life of the project, taking into account all phases and elements of an action, including emissions from other activities that bear a reasonably close causal

relationship to the proposed action. For example, NEPA review of an open-pit mine should consider GHG emissions from clearing land for access roads, transporting the extracted mineral, refining or processing the resource and, significantly, “using the resource.” In some cases, such activities are part of the purpose and need for the proposed action, and the analysis will provide a comparative assessment of the alternatives and their relative ability to advance those objectives.

An agency's NEPA review of a project involving large-scale emissions should discuss measures to reduce GHG emissions, including consideration of the proposed action's energy requirements and mitigation opportunities for reducing energy demand or GHG emissions associated with energy production, taking into account the emissions source categories, measurement methodologies, and applicable reporting criteria.³⁵ Moreover, alternatives may be considered for their ability to reduce or mitigate GHG emissions, including enhanced energy efficiency, lower GHG-emitting technology, renewable energy, planning for carbon capture and sequestration, and capturing or beneficially using fugitive methane emissions.

2. Recent Case Law on Impacts of GHG Emissions

Controversy over the adequacy of agencies' NEPA reviews of climate change impacts in connection with fossil fuel leasing and licensing decisions focuses on the extent of deference that courts should afford to agency determinations. Two recent cases illuminate how judicial deference operates with regard to consideration of climate change's impacts.

In *WildEarth Guardians v. Jewell*,³⁶ the D.C. Circuit upheld a Bureau of Land Management (BLM) decision to lease two tracts for coal mining activities, finding that BLM discussed the prevailing scientific consensus on global climate change and coal mining's contribution to it. BLM had estimated previous and projected GHG emissions and determined that the proposed mining would account for only 0.63 percent of statewide emissions of CO₂e, and it noted that mitigation measures could be imposed at a later stage.

Upholding BLM's decision, the D.C. Circuit noted that the agency assumed that mining would continue at existing production rates and coal would continue to be used to generate electricity by coal-fired power plants. “Although it did not discuss specific global impacts that would result from additional emissions, the BLM explained that ‘[g]iven the state of the science, it is not possible to associate specific actions with the specific global

32. CEQ Guidance, *supra* note 2, at 8.

33. 42 U.S.C. §§7401-7671q, ELR STAT. CAA §§101-618.

34. See 40 C.F.R. §§1501.4, 1508.27 (2012).

35. CEQ has prepared an inventory of GHG accounting methods and tools for agencies to use in their NEPA reviews. See Greenhouse Gas (GHG) Accounting Tools, available at https://ceq.doe.gov/current_developments/GHG_accounting_methods_7Jan2015.html.

36. 738 F.3d 298, 44 ELR 20001 (D.C. Cir. 2013).

impacts such as potential climate effects.”³⁷ Because this position reflected CEQ guidance, the court deferred.³⁸

By contrast, consider the District Court of Colorado’s decision in *High Country Conservation Advocates v. U.S. Forest Service*³⁹ rejecting the sufficiency of the EIS concerning approval of coal mine leases in western Colorado. The EIS disclosed that coal might contribute to climate change both from the release of methane from mining and from the release of CO₂ from coal combustion, and it quantified the amount of emissions relative to state and national emissions; however, it did not discuss the impacts caused by these emissions. The court noted that the draft EIS weighed several specific economic benefits, including coal recovered, payroll, associated purchases of supplies and services, and royalties,⁴⁰ against the two costs of disturbing forests and of methane emissions from the mine.⁴¹ Analysis of climate change impacts was removed because of an official’s conclusion that “[p]lacing quantitative values on greenhouse gas emissions is still controversial.”⁴²

The court, however, emphasized that the agency had a tool for quantifying a project’s contribution to costs associated with global climate change: the social cost of carbon protocol.⁴³ Accordingly, it was arbitrary and capricious to quantify the benefits of the lease modifications and then explain that a similar analysis of the costs was impossible—when such an analysis was in fact possible. By deciding not to quantify the costs at all, the agencies effectively zeroed out the cost in its quantitative analysis.

These cases suggest an emphasis on the use of available analytical tools to quantify climate change impacts. Where BLM’s process for considering climate change impacts is not skewed or constrained, the *Jewell* decision suggests that courts will not use NEPA to increase the scope of their inquiry of leasing decisions. But where tools are available for measuring impacts, non-use of those analytical tools may be grounds for remand for further consideration. More generally, these decisions fit neatly into the core of judicial deference concerning NEPA and the oft-articu-

lated view that NEPA does not compel environmentally beneficial outcomes, but only mandates that a proposed action’s environmental consequences be fully considered.⁴⁴ For environmental advocates concerned about climate change, NEPA’s substantial value would seem to depend on the promulgation of assessment tools within the executive branch.

C. Consideration of Indirect or Systemic Impacts

The prior section focused on the quantity of GHGs released by the proposed activity and the obvious, albeit incremental, impact that large releases must have on the direction and pace of climate change. The material I discuss in this section is one step more abstract, asking whether NEPA requires consideration of a proposed project’s entrenchment or expansion of America’s fossil fuel extraction, delivery, and combustion infrastructure; and if so, whether that consideration should weigh upon its approval. The basis of such consideration is an appreciation that approvals of leases or licenses reinforce behavioral patterns that sustain reliance on fossil fuels and cumulatively render mitigation of climate change more difficult. There are indirect implications of a lease or license approval that will not diminish even with implementation of mitigation measures for curbing the proposed action’s direct emissions.

I. Should NEPA Require Consideration of These Impacts?

Whether NEPA should require consideration of how a decision might entrench and perpetuate the use of fossil fuels is one of the most perplexing questions in environmental jurisprudence today. To the extent that NEPA requires consideration of how a proposed action might generate or entrench GHG emissions, it raises the regulatory barriers to recover, transfer, and finally combust fossil fuel resources. Yet, not to consider climate change in connection with the many lucrative leasing decisions that agencies regularly make would be to ignore the causal relationship between these decisions and how humanity has, in fact, changed the climate. As previously discussed, the Eighth Circuit recognized in *Mid States Coalition for Progress* that some decisions have the effect of reducing the costs of emission-generating activities, even though the GHGs resulting from the decision itself are negligible.

The CEQ Guidance on this question is particularly vague: “Consideration of indirect effects should be

37. *Id.* at 309.

38. *WildEarth Guardians v. Jewell* was decided under CEQ’s 2010 guidance, *see* 75 Fed. Reg. 8046 (Feb. 23, 2010).

39. 52 F. Supp. 3d 1174, 44 ELR 20144 (D. Colo. 2014).

40. The court noted, “[t]he agency’s [approval] expressly relied on the anticipated economic benefits of the Lease Modifications . . . See FSLicensing-0069890 at 0069898 (explaining that the no-action alternative was not chosen because ‘it does not achieve social and economic objectives in the area. Estimates suggest nearly a billion dollars in lost revenues, royalties, payroll and local payment for goods and services would be foregone by implementing this Alternative’).” *Id.* at 1191.

41. *Id.* at 1190-91.

42. *Id.* at 1191. According to BLM, whose comments provoked removal of climate change from consideration,

Social cost estimates for a ton of carbon dioxide emitted range from \$5 to over \$800 . . . Considering the 1.23 million tons of carbon dioxide equivalent emissions [from methane] the West Elk mine emits annually, the cost could range from a moderate \$6 million per year to an overwhelming \$984 million per year.

Id.

43. *High Country Conservation Advocates*, 52 F. Supp. 3d at 1990. *See also* INTERAGENCY WORKING GROUP ON SOCIAL COST OF CARBON, TECHNICAL SUPPORT DOCUMENT (2010), available at <http://www3.epa.gov/otaq/climate/regulations/scc-tds.pdf>.

44. A similar perspective has been pronounced by at least one state court. In *Minnesota Center for Environmental Advocacy v. Holsten*, 2009 WL 2998037, 39 ELR 20227 (Minn. Ct. App. Sept. 22, 2009), the court upheld an environmental analysis that contained a detailed evaluation of GHG emissions from the proposed reactivation of an iron mine, but did not consider the impacts of the project’s emissions on climate change; the court found the agency’s action reasonable in light of the uncertainty inherent in predicting climate change. *See generally* Thaddeus R. Lightfoot, *Climate Change and Environmental Review: Addressing the Impact of Greenhouse Gas Emissions Under the Minnesota Environmental Policy Act*, 36 WM. MITCHELL L. REV. 1068 (2010).

bounded by limits of feasibility in evaluating upstream and downstream effects of federal agency actions.” Moreover, only the methodologies relevant to the emissions of the proposed project, and over which the action agency has control or authority, need be considered.⁴⁵ The CEQ Guidance reminds agencies to apply “the ‘rule of reason’ to ensure that their discussions pertain to the issues that deserve study and deemphasizes issues that are less useful to the decision regarding the proposal, its alternatives, and mitigation options.”⁴⁶

2. Recent Cases on Indirect or Systemic Impacts

In my view, the two cases examined here are the most troubling, less for what they pronounce than for what they disregard. In the 2015 case *WildEarth Guardians v. U.S. Forest Service*,⁴⁷ the District Court of Wyoming upheld a decision to approve large coal mining leases, finding that the Final EIS (FEIS) sufficiently assessed the mining plans’ estimates of source emissions from the coal mines, the electricity needed for mining operations, and coal fires resulting from combustion of methane from exposed coal. The FEIS acknowledged that emissions resulting from the mining activities would exceed 60 million tons of CO₂e per year; nearly 750 million metric tons of CO₂ would be generated from combustion of all the coal from Wyoming (before applying emissions reduction technologies)—approximately 35% of total U.S. CO₂e emissions from coal combustion. The court found:

Even if the analysis in the FEIS was imperfect and could have been better, and today the analysis likely could have been better given the development and acquisition of new knowledge and continuing scientific study, the agencies considered the effects of climate change, recognized benefits and costs of mining coal in the Wright area tracts. The record reflects that the agencies did not ignore the effects of coal combustion, GHGs and climate change in reaching the decisions it made. Risks of harm were considered.⁴⁸

In one sense, the holding in this case is merely another testimonial to judicial deference, wholly consistent with the *Jewell* decision. But the scale of what is at stake is very much larger, raising the question of whether the contemplated magnitude of coal extraction and combustion deserves NEPA attention not only for its direct contribution of GHGs, but also for the indirect effects of continued

reliance on Wyoming coal as a major source of U.S. energy as well as GHG emissions.

This logic leads to the NEPA decision with potentially the most far-reaching implications, *In re Corpus Christi Liquefaction*.⁴⁹ At issue was approval to site, construct, and operate liquefied natural gas (LNG) export and import facilities in Texas.⁵⁰ The project’s EIS recommended 104 mitigation measures for reducing impacts on air quality to “insignificant levels.” According to the Sierra Club, however, the EIS did not analyze the environmental impacts of induced natural gas production—the project, by connecting domestic gas producers with global demand, would induce additional production of gas that foreseeably would have environmental effects.

The Federal Energy Regulatory Commission (FERC) refused reconsideration of the EIS, holding that indirect growth-inducing effects must bear a reasonably close relationship between the environmental effects and the alleged cause, and those effects must be reasonably foreseeable. FERC ruled that it had no jurisdiction over the production and development of domestic natural gas. “[W]here an agency has no ability to prevent a certain effect due to its limited statutory authority over the relevant actions, the agency cannot be considered a legally relevant ‘cause’ of the effect.”⁵¹ Moreover, FERC ruled, the scope of the impacts from any such induced production is not reasonably foreseeable. With regard to the project’s cumulative effects along with other DOE-authorized projects, FERC declined to undertake what it characterized as essentially a programmatic NEPA review of natural gas development and production.

WildEarth Guardians v. U.S. Forest Service and *In re Corpus Christi Liquefaction*, both issued in 2015, portray an interpretation of NEPA shorn of its capacity to compel agencies to consider how their decisions impact the energy infrastructure that is at the heart of climate change.

III. Conclusion

Climate change, more than any environmental challenge in human history, evokes the imperative of NEPA: that government agencies undertake informed decisionmaking with regard to matters significantly impacting the environment. Fulfilling that imperative is the responsibility of, first, the federal agencies that must decide such environmental matters and, second, the courts that are responsible for ensuring that a crabbed reluctance to inter-

45. See 40 C.F.R. §1502.24 (2012).

46. CEQ Guidance, *supra* note 2, at n.9; see 40 C.F.R. §§1500.4(f)-(g), 1501.7, 1508.25 (2012). “Agencies may incorporate USGCRP studies and reports by reference in any discussion of GHG emissions and their effects. 40 C.F.R. §1502.21.” NANCY H. SUTLEY, CEQ, DRAFT NEPA GUIDANCE ON CONSIDERATION OF THE EFFECTS OF CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS 5 (2010), available at https://ceq.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf.

47. 2015 WL 4886082 (D. Wyo. Aug. 17, 2015).

48. *Id.* at 22.

49. 151 F.E.R.C. ¶ 61098 (May 6, 2015).

50. *Id.* The liquefaction project will enable liquefaction for export of approximately 15 million metric tons per annum (mtpa) of LNG (or 2.1 billion cubic feet (Bcf) per day of natural gas) and vaporize approximately 400 million cubic feet per day of imported natural gas. In conjunction with the proposed Liquefaction Project, FERC also authorized construction and operation of a bi-directional pipeline to transport domestic natural gas to the liquefaction project facilities for liquefaction and export and to transport regasified imported LNG from the terminal to interconnections with several existing pipeline systems. *Id.* ¶ 61650.

51. *Id.* ¶ 61652.

fere with industrial progress does not render NEPA a hollow shibboleth.

Any assessment of how well NEPA is advancing informed decisionmaking with regard to climate change would be premature at this time. The CEQ Guidance is a clarion call forward, emphasizing that climate change is a consequence of human activity that produces unique stresses for environmental resources. Cautioning against linking specific climate changes to their environmental effects, CEQ advises that emissions sufficient to trigger CAA obligations should trigger NEPA review. As to such significant projects, review can be limited reasonably to ensure that NEPA consideration pertains to issues that are salient to the decision in question. Left somewhat unclear is when an agency might be required to conduct an in-depth analysis of the project's technology cycle.

Also left somewhat unclear is CEQ's recommendation that consideration of climate change impacts may usefully be done as part of a programmatic analysis of agency activities. According to CEQ, by presenting the nature of subsequent tiered decisions, agencies can focus the scope and development of alternatives and mitigation measures.

However, once undertaken, such programmatic review is rarely re-undertaken absent a fundamental change in how the program operates. The maturing awareness of climate change by itself apparently does not mean that agencies must perform a programmatic review. And as I described, courts have rejected environmentalists' demands to order agencies to undertake such a programmatic review.

Finally, courts have abstained from requiring agencies to consider how their leasing or licensing decisions reinforce, in some instances strongly, America's reliance on a fossil fuel infrastructure.

It may confidently be asserted that the cases discussed here will soon be joined by more cases that discuss the adequacy of NEPA review in connection with climate change. Clearer doctrine no doubt will take shape as more cases are decided. This is a moment of initial framing of doctrinal approaches to some of the most complex environmental questions ever to confront the courts. But scientists tell us that climate change may not offer the luxury of time to let law evolve on its own. In my view, NEPA can be a more powerful shaper of policies to mitigate and adapt to climate change if the courts make it so.