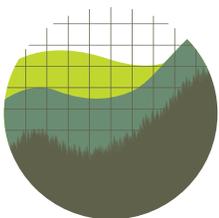


Ensuring Robust Consideration of Climate Change Under NEPA

Six Priorities for CEQ's Phase 2 Rulemaking



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In April 2022, the Council on Environmental Quality (CEQ) finalized a limited, “Phase 1” rulemaking to restore several longstanding features of the regulations that guide agency assessments under the National Environmental Policy Act (NEPA) which CEQ had removed in 2020.¹ In that rule, CEQ reaffirmed its intentions to further revise the regulations to better ensure that agencies make decisions that “advance environmental, climate change mitigation and resilience, and environmental justice objectives.”² This policy brief outlines six simple regulatory revisions that CEQ should prioritize for its “Phase 2” rulemaking to improve consideration of climate change during environmental review.

As driven home by the most recent Intergovernmental Panel on Climate Change assessment reports, climate change poses a grave and growing threat to human well-being and a healthy planet.³ Without consideration of climate change, agencies cannot fulfill NEPA's core purpose “to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.”⁴ Each of the following suggestions is consistent with the purpose, structure, and text of NEPA and will better ensure that environmental review includes consideration of how a proposed action may worsen climate change and how climate change may negatively impact a proposed action and the environment affected by the action.

CEQ Should Make the Following Amendments to the NEPA Implementing Regulations:

1. Revise the definition of “effects” in 40 C.F.R. § 1508.1(g) to explicitly include both a proposed action's impacts on climate change and the impacts of climate change on a proposed action and its affected environment;
2. Revise the definition of “effects” to specify that NEPA requires assessment of the real-world impacts of greenhouse gas emissions and other pollutants (“actual environmental effects”), and not merely volumetric emission estimates;
3. Rescind regulatory provisions inserted in 2020 that inappropriately suggest that NEPA analysis should ignore effects beyond the nation's borders;
4. Amend 40 C.F.R. § 1502.21, which pertains to agencies' treatment of uncertainty and incomplete information during environmental review, to apply to all impacts assessed under NEPA, not only significant impacts;
5. Revise the definition of “affected environment” in 40 C.F.R. § 1502.15 to explicitly include climate change impacts; and
6. Add language to 40 C.F.R. § 1502.23 to clarify that scientific accuracy for climate change data requires forward-looking projections and appropriately scaled data.

This policy brief provides a top-level overview of these six recommendations. **For further detail, see the Institute for Policy Integrity's [comment letter](#) to CEQ filed in November 2021.**⁵ CEQ should also issue guidance to agencies that further clarifies what constitutes adequate review of climate change under NEPA—a point also discussed in the comment letter.

¹ National Environmental Policy Act Implementing Regulations Revisions, 87 Fed. Reg 23,453 (Apr. 20, 2022).

² *Id.* at 23,456.

³ E.g. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Summary for Policy Makers*, in CLIMATE CHANGE 2022: IMPACTS, ADAPTATION, VULNERABILITY (Hans-O. Pörtner et al., eds., 2022), https://report.ipcc.ch/ar6wg2/pdf/IPCC_AR6_WGII_SummaryForPolicymakers.pdf.

⁴ 42 U.S.C. § 4321.

⁵ Inst. for Pol'y Integrity, Comments on the National Environmental Policy Act Implementing Regulations Revisions (Nov. 22, 2021), https://policyintegrity.org/documents/Comments_of_the_Institute_for_Policy_Integrity_2.pdf [hereinafter “Policy Integrity Comments”].

Recommendations

1. Revise the Definition of “Effects” in 40 C.F.R. § 1508.1(g) to Explicitly Include Both a Proposed Action’s Impacts on Climate Change and the Impacts of Climate Change on a Proposed Action and Its Affected Environment

In order to minimize any potential confusion about the scope of NEPA review, CEQ should consider adding a direct reference to climate change in the definition of “effects” in 40 C.F.R. § 1508.1(g). This addition should specify that it encompasses both an action’s greenhouse gas emissions (the action’s impact on climate change), and the impacts of climate change on the action and surrounding environment (climate vulnerability and resilience impacts).

Explicitly specifying that impacts on climate change meet the definition of “effects” is particularly important after the confusion caused by CEQ’s 2020 regulatory amendments (“2020 Rule”). In that rule, CEQ revised the definition of “effects” to explicitly require spatial, geographic, and temporal proximity⁶—all improper restrictions that CEQ has since rescinded.⁷ Some opponents of climate change review have interpreted this language from the 2020 Rule to largely preclude consideration of climate impacts under NEPA⁸—even though CEQ declined to endorse this view in the 2020 Rule.⁹ **CEQ should dispel any confusion about whether climate impacts should be considered under NEPA by revising the definition of “effects” to explicitly say so. Such a revision would be consistent with voluminous case law finding that agencies must consider reasonably foreseeable impacts on climate change.**¹⁰

CEQ should further amend the definition of “effects” to directly reference impacts related to climate vulnerability and resilience. As with greenhouse gas emissions, climate vulnerability and resilience effects clearly fall under the types of effects that agencies should consider under NEPA.¹¹ In fact, CEQ’s since-rescinded 2016 guidance on

⁶ 40 C.F.R. § 1508.1(g)(2).

⁷ 87 Fed. Reg. at 23,466-67.

⁸ See, e.g., Consideration of Greenhouse Gas Emissions in Natural Gas Infrastructure Project Reviews, 178 FERC ¶ 61,108, P 31 (Feb. 18, 2022) (Danly, Comm’r, dissenting) (“CEQ’s regulations affirmatively prohibit [indirect climate] effects from being considered in an agency’s compliance with NEPA.”).

⁹ Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43,304, 43,344 (July 16, 2020) (stating that “[t]he rule does not preclude consideration of the impacts of a proposed action on any particular aspect of the human environment,” and “analysis of the impacts on climate change will depend on the specific circumstances of the proposed action”).

¹⁰ See, e.g., Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin., 538 F.3d 1172, 1216–17 (9th Cir. 2008) (rejecting analysis under NEPA when agency “quantifie[d] the expected amount of [carbon dioxide] emitted” but failed to “evaluate the incremental impact that these emissions will have on climate change or on the environment more generally”) (internal quotation marks omitted); Sierra Club v. FERC, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (“[G]reenhouse-gas emissions are an indirect effect of authorizing [a natural gas pipeline] project, which FERC ... has legal authority to mitigate” and thus must reasonably assess under NEPA); WildEarth Guardians v. BLM, 870 F.3d 1222, 1236 (10th Cir. 2017) (rejecting analysis for unreasonable assessment of greenhouse gas impacts).

¹¹ Federal courts have repeatedly recognized the appropriateness of considering climate vulnerability and resilience effects under NEPA, but have generally deferred to agencies on what constitutes an adequate analysis. See, e.g., Cent. Oregon Landwatch v. Connaughton, 696 Fed. App’x 816, 819–20 (9th Cir. 2017) (finding “the Forest Service took an adequate ‘hard look’ at the impact of climate change on the proposed action”); Ctr. for Biological Diversity v. Kempthorne, 588 F.3d 701, 11–712 (9th Cir. 2009) (noting that “[t]he Service’s EA *did* acknowledge climate change and enumerated its long term effects on polar bears” and finding that the Service took an adequate “hard look” at the consequences of its actions); AquAlliance v. U.S. Bureau of Reclamation, No. 1:15-CV-754-LJO-BAM, 2018 WL 903746, at *38–*39 (E.D. Cal. 2018) (finding that the Bureau’s failure to adequately consider the effects of climate change on a water management project was a violation of NEPA); Idaho Rivers United v. U. S. Army Corps of Eng’rs, No. C14-1800JLR, 2016 WL 498911, at *17 (W.D. Wash. Feb. 9, 2016) (finding the defendant agency adequately analyzed the effect of climate change on sediment disposition). Even in cases where courts have upheld minimal climate analysis, they have not questioned the appropriateness of considering climate vulnerability and resilience effects under NEPA and in some cases have specifically indicated that further information from the agencies on what constitutes adequate climate analysis would help inform their review. See *infra* notes 44-45.

greenhouse gas emissions and climate change confirmed that such considerations “are squarely within the scope of NEPA and can inform decisions on whether to proceed with, and how to design, the proposed action.”¹² Despite these recognitions, surveys of climate change considerations in environmental impact statements have demonstrated a pattern of minimal and superficial consideration of climate vulnerability and resilience effects that rarely appear to influence decisionmaking.¹³ Clarifying the importance of these considerations in the implementing regulations would additionally help resolve any confusion created by the 2020 revisions, which improperly removed the definition of “cumulative impacts,” as climate vulnerability and resilience effects often fall under this category of effect.

To explicitly reference the full scope of climate change-related impacts, CEQ could add “climate change-related” to 40 C.F.R. § 1508.1(g)(4)¹⁴ and include a further definition of “climate change-related” in 40 C.F.R. § 1508.1(g) to indicate that this phrase encompasses both greenhouse gas emissions and climate vulnerability and resilience. Whether adopting this exact approach or an alternative revision, CEQ should clearly specify that both types of climate impacts falls within the definition of “effects.”

Revise 40 C.F.R. § 1508.1(g)(4): Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, **climate change-related**, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial.

Add an additional definition to 40 C.F.R. § 1508: **Climate change-related effects or impacts include both 1) contributions from the proposed action and its alternatives to climate change, and 2) the current and reasonably foreseeable future effects of climate change on a proposed action, its alternatives, and the surrounding environment, including increased vulnerabilities and their mitigation or elimination.**

Note: For all proposed regulatory revisions in this document, suggested additions are in red and suggested deletions are in blue.

¹² Final Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change 21 (issued Aug. 1, 2016; withdrawn Apr. 5, 2017; under review Feb. 19, 2021, for revision and update) [hereinafter “CEQ 2016 Final Climate Guidance”].

¹³ See ROMANY M. WEBB ET AL., SABIN CTR. FOR CLIMATE CHANGE LAW, EVALUATING CLIMATE RISK IN NEPA REVIEWS: CURRENT PRACTICES AND RECOMMENDATIONS FOR REFORM (2022), https://scholarship.law.columbia.edu/sabin_climate_change/185/; see also JESSICA WENTZ ET AL., SABIN CTR. FOR CLIMATE CHANGE LAW & ENV’T DEF. FUND, SURVEY OF CLIMATE CHANGE CONSIDERATIONS IN FEDERAL ENVIRONMENTAL IMPACT STATEMENTS, 2012–2014 (2016), https://scholarship.law.columbia.edu/sabin_climate_change/15/; SALONI JAIN ET AL., SABIN CTR. FOR CLIMATE CHANGE LAW, HOW DID FEDERAL ENVIRONMENTAL IMPACT STATEMENTS ADDRESS CLIMATE CHANGE IN 2016? (2017), https://scholarship.law.columbia.edu/sabin_climate_change/104/; Jessica Wentz, *Assessing the Impacts of Climate Change on the Built Environment Under NEPA and State EIA Laws: A Survey of Current Practices and Recommendations for Model Protocols*, 35 Env’t L. Rep. 11, 105 (2015), https://scholarship.law.columbia.edu/sabin_climate_change/120/; PATRICK WOOLSEY, SABIN CTR. FOR CLIMATE CHANGE LAW, CONSIDERATION OF CLIMATE CHANGE IN FEDERAL EISs, 2009–2011 (2012), https://scholarship.law.columbia.edu/sabin_climate_change/158/; AIMEE DELACH ET AL., DEFENDERS OF WILDLIFE, REASONABLY FORESEEABLE FUTURES: CLIMATE CHANGE, ADAPTATION AND NEPA (2013), <https://defenders.org/publications/reasonably-foreseeable-futures-climate-change-adaptation-and-national-environmental>.

¹⁴ CEQ moved the pertinent discussion of effects from 40 C.F.R. § 1508.1(g)(1) to (g)(4) in the Phase 1 rulemaking.

2. Revise the Definition of “Effects” to Specify that NEPA Requires Assessment of the Real-World Impacts of Greenhouse Gas Emissions and Other Pollutants (“Actual Environmental Effects”)—Not Merely Volumetric Emission Estimates

Despite numerous court decisions (both within and outside the context of greenhouse gas emissions) holding that agencies must assess the actual environmental and social effects of a project under NEPA, agency analyses of climate impacts have often fallen short of this requirement by providing volumetric estimates alone without measuring the real-world impacts of those emissions. CEQ can clarify agencies’ legal obligations by incorporating into its regulations judicial language about the need to consider “actual environmental effects.”

Numerous federal court decisions spell out NEPA’s requirement that agencies assess the real-world environmental and social impacts of project proposals, and cannot provide only volumetric estimates of emissions or other impacts. **As the D.C. Circuit has explained, merely listing the quantity of emissions is insufficient if the agency “does not reveal the meaning of those impacts in terms of human health or other environmental values,” since “it is not releases of [pollution] that Congress wanted disclosed” but rather “the effects, or environmental significance, of those releases.”**¹⁵

More recent court decisions have applied this doctrine in the climate change context. Most significantly, a 2008 decision by the U.S. Court of Appeals for the Ninth Circuit rejected a NEPA analysis of proposed fuel-efficiency standards when the agency quantified the resulting carbon dioxide emissions and compared those emissions to emissions nationwide and from the automobile sector.¹⁶ As the court explained, such an analysis failed to “discuss the *actual* environmental effects resulting from those emissions” as NEPA requires.¹⁷ Several more recent opinions have followed suit, rejecting an agency’s NEPA analysis as insufficient for merely quantifying greenhouse gas emissions without assessing the real-world impact of those emissions.¹⁸ In contrast, courts have agreed that use of the social cost of greenhouse gases fulfills NEPA’s requirement that agencies analyze the real-world impact of a project’s greenhouse gas emissions.¹⁹

Despite these court decisions, agency analyses often merely quantify greenhouse gas emissions and compare them to national or global totals. CEQ should dispel any lingering confusion about agencies’ legal obligations by incorporating

¹⁵ NRDC v. NRC, 685 F.2d 459, 486–87 (D.C. Cir. 1982), *rev’d on other grounds*, Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, 462 U.S. 87, 106–07 (1983).

¹⁶ *Ctr. for Biological Diversity*, 538 F.3d at 1215–16.

¹⁷ *Id.* at 1216–17.

¹⁸ *E.g.* High Country Conservation Advocates v. U.S. Forest Serv., 52 F. Supp. 3d 1174, 1190 (D. Colo. 2014) (“Beyond quantifying the amount of emissions relative to state and national emissions and giving general discussion to the impacts of global climate change, [the agencies] did not discuss the impacts caused by these emissions.”); *Mont. Env’t Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1095–99 (D. Mont. 2017) (rejecting the argument that the agency “reasonably considered the impact of greenhouse gas emissions by quantifying the emissions which would be released if the [coal] mine expansion is approved, and comparing that amount to the net emissions of the United States”); *California v. Bernhardt*, 472 F. Supp. 3d 573, 623 (N.D. Cal. 2020) (rejecting NEPA assessment of greenhouse gas emissions because the agency’s approach of quantifying emissions and comparing them to nationwide totals failed to “communicate the *actual* environmental effects resulting from emissions of greenhouse gas”) (internal quotation marks omitted); 350 *Montana v. Haaland*, ___ F.4th ___, No. 35-411, slip op. at 23 (9th Cir. Apr. 4, 2022) (analysis that “tells the reader that [a fossil-fuel project] will add more fuel to the fire but its contribution will be smaller than the worldwide total of all other sources of [greenhouse gases]” fails to sufficiently explain “why the [greenhouse gas] emissions from the [project] represent an insignificant contribution to the environmental consequences” caused by climate change).

¹⁹ *E.g.* *High Country*, 52 F. Supp. 3d at 1191; *Mont. Env’t Info. Ctr.*, 274 F. Supp. 3d at 1098–99; *WildEarth Guardians v. Bernhardt*, CV 17-80-BLG-SPW, 2021 WL 363955 (D. Mont. Feb. 3, 2021).

judicial language on the consideration of “actual environmental impacts” into the regulatory definition of “effects” under 40 C.F.R. § 1508.1. While such a requirement is already spelled out in case law, further clarity on this point is warranted given the repeated limitations of agency analyses with respect to climate impacts.

Add an additional sentence to 40 C.F.R. § 1508: *Effects refers to actual, real-world impacts in terms of human health or other environmental values, and an agency’s effects analysis is generally not satisfied by reporting only the volume or degree of emissions or releases without further assessment of the effects or environmental significance of those emissions or releases.*

3. Rescind Regulatory Provisions Inserted in 2020 that Inappropriately Suggest that NEPA Analysis Should Ignore Effects Beyond the Nation’s Borders

As part of the 2020 Rule, CEQ amended the definition of “human environment” in 40 C.F.R. § 1508.1(m) to cabin that term to refer to “the relationship of present and future generations of Americans with that environment.”²⁰ CEQ also deleted several references to transboundary impacts and indicated that impact and significance assessments should be restricted to the consideration of local or national effects.²¹

This attempt to restrict NEPA analysis to domestic impacts was improper. **Under the NEPA statute, agencies must “recognize the worldwide and long-range character of environmental problems.”²² Consistent with this statutory command, some courts have held that foreseeable transboundary effects must appear in NEPA analysis.** For example, in a 1993 decision, the D.C. Circuit held that NEPA required the National Science Foundation to consider environmental impacts before proceeding with plans to incinerate food waste in Antarctica, rejecting the agency’s argument that the presumption against extraterritoriality applies.²³

Likewise, in the 2010 case of *Manitoba v. Salazar*, the U.S. District Court for the District of Columbia stated that “NEPA requires agencies to consider reasonably foreseeable transboundary effects resulting from a major federal action taken within the United States.”²⁴ In making this assertion, the court considered CEQ guidance persuasive, but not binding, underscoring that the court was interpreting the NEPA statute rather than merely following CEQ guidance.²⁵ Similarly, in a 2017 case, the U.S. District Court for the Southern District of California held that the Department of Energy must take into account the effects in Mexico of both the U.S. and Mexico portions of an electric transmission line that ran across the

²⁰ 40 C.F.R. § 1508.1(m).

²¹ Most notably, while 40 C.F.R. § 1501.3(b)(1) now states that “significance would usually depend only upon the effects in the local area,” it previously recognized that significance could consider impacts on the “world as a whole.” The prior definition of “significantly,” which had been contained in 40 C.F.R. § 1508.27, also recognized that significance could consider impacts on the “world as a whole,” but such language was removed as part of the 2020 Rule.

²² 42 U.S.C. § 4332(2)(F).

²³ *Env’t Def. Fund, Inc. v. Massey*, 986 F.2d 528, 533 (D.C. Cir. 1993) (“[S]ince NEPA is designed to regulate conduct [i.e., agency decisions] occurring within the territory of the United States, and imposes no substantive requirements which could be interpreted to govern conduct abroad, the presumption against extraterritoriality does not apply[.]”).

²⁴ *Gov’t of Man. v. Salazar*, 691 F. Supp. 2d 37, 51 (D.D.C. 2010).

²⁵ *See id.* at 51 n.13.

national border.²⁶ And on multiple occasions, the Ninth Circuit and other courts have held that agencies must consider the impact of their actions on greenhouse gas emissions occurring abroad.²⁷

To be sure, some courts have held that NEPA does not require agencies to consider certain environmental effects of their actions when those effects occur in foreign countries. Some courts have suggested that the question merits a case-by-case inquiry,²⁸ and case law on the issue is not entirely consistent.²⁹ But courts have held that consideration of transboundary impacts is warranted under NEPA when those impacts affect global commons³⁰ or ultimately affect “the American environment” despite originating abroad³¹—both of which greenhouse gas emissions undoubtedly do.

Since greenhouse gas emissions present a global externality, CEQ’s 2020 revisions could sow confusion as to the proper scope of NEPA analysis regarding climate impacts. As noted above, courts have consistently held that agencies must assess impacts on global climate change under NEPA.³² Because it is both unlawful and threatens to undermine required agency analysis of global climate impacts, CEQ should rescind provisions of the 2020 Rule that purported to restrict NEPA analysis to domestic effects and enact further revisions to clarify that NEPA requires analysis at the proper geographic scale.

Revise 40 C.F.R. § 1501.3(b)(1): In considering the potentially affected environment, agencies should consider, as appropriate to the specific action, the affected area (**global**, national, regional, or local) and its resources, such as listed species and designated critical habitat under the Endangered Species Act. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance **would usually may in some instances** depend only upon the effects in the local area, **but depending on the nature of the action, could, in other instances, depend upon the effects on the nation or world as a whole.**

Revise 40 C.F.R. § 1508.1(m): Human environment means comprehensively the natural and physical environment and the relationship of present and future generations **of Americans** with that environment.

²⁶ Backcountry Against Dumps v. U. S. Dep’t of Energy, No. 3:12-cv-03062-L-JLB, 2017 WL 3712487, at *3 (S.D. Cal. Aug. 29, 2017).

²⁷ Ctr. for Biological Diversity v. Bernhardt, 982 F.3d 723, 736–40 (9th Cir. 2020); 350 Montana, slip op. at 26–29; Friends of the Earth v. Haaland, No. CV 21-2317 (RC), 2022 WL 254526 at *12–15 (D.D.C. Jan. 27, 2022); Sovereign Inupiat for a Living Arctic v. BLM, No. 3:20-CV-00290-SLG, 2021 WL 3667986 at *10–14 (D. Alaska Aug. 18, 2021).

²⁸ E.g. Greenpeace USA v. Stone, 748 F. Supp. 749, 759 (D. Haw. 1990) (“Congress intended to *encourage* federal agencies to consider the global impact of domestic actions and *may* have intended under certain circumstances for NEPA to apply extraterritorially.”).

²⁹ See Mayaguezanos por la Salud y el Ambiente v. United States, 198 F.3d 297, 301 n.8 (1st Cir. 1999) (collecting case law going both directions); Hirt v. Richardson, 127 F. Supp. 2d 833, 844 (W.D. Mich. 1999) (same); Jeffrey E. Gonzalez-Perez & Douglas A. Klein, *The International Reach of the Environmental Impact Statement Requirement of the National Environmental Policy Act*, 62 GEO. WASH. L. REV. 757, 760 (1994) (“There is no consensus about whether NEPA applies extraterritorially.”).

³⁰ Massey, 986 F.2d at 533–34 (“[I]n a sovereignless region like Antarctica, where the United States has exercised a great measure of legislative control, the presumption against extraterritoriality has little relevance and a dubious basis for its application.”); Ctr. for Biological Diversity v. Nat’l Sci. Found., No. C 02-5065 JL, 2002 WL 31548073, at *3 (N.D. Cal. Oct. 30, 2002) (finding that NEPA applies to a project occurring in the “high seas”).

³¹ Hirt, 127 F. Supp. 2d at 845 (“NEPA is designed to ensure that federal agencies contemplating actions that will [a]ffect the American environment carefully consider those environmental effects. It would elevate form over substance to suggest that simply because those environmental impacts emerge on the other side of a national boundary, NEPA procedures are not applicable.”).

³² See *supra* note 10 and accompanying text.

4. Amend 40 C.F.R. § 1502.21 To Apply to All Impacts Assessed Under NEPA, Not Only Significant Impacts Assessed in an Environmental Impact Statement

Under 40 C.F.R. § 1502.21, agencies facing incomplete or unavailable information are instructed to apply “theoretical approaches or research methods generally accepted in the scientific community.”³³ This provision has been critical to ensuring that agencies fully assess environmental impacts and do not overlook key impacts based on imperfect data,³⁴ including climate impacts. A recent decision by the U.S. Court of Appeals for the D.C. Circuit relied on 40 C.F.R. § 1502.21 in holding that federal agencies cannot simply fall back on scientific uncertainty as justification for failing to analyze a project’s impacts on climate change, but instead must consider any generally-accepted research methods—such as, potentially, the social cost of greenhouse gases—to assess that uncertainty.³⁵ In light of this case, 40 C.F.R. § 1502.21 could play a key role in the future in ensuring adequate climate analysis under NEPA.

However, that provision on its face it applies only to “reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement.”³⁶ **This limitation creates a risk that agencies may fail to provide an adequate analysis of climate impacts in an environmental assessment, when in fact the action may have significant climate impacts.**³⁷ Revising 40 C.F.R. § 1502.21 to apply to all impacts—not merely significant impacts in environmental impact statements—would help ensure that agencies provide a robust analysis of climate impacts. Such a revision could also improve assessment of climate vulnerability and resilience impacts, as the cumulative effects of climate change and the action on the affected environment may be what causes an impact to be significant.³⁸

The current limited application of 40 C.F.R. § 1502.21 to impacts that the agency has deemed significant is also illogical, since those requirements can be instrumental to the determination of whether an impact is significant in the first place. Requiring application of generally accepted research methods only after the agency has already determined the effect to be significant and decided to prepare an environmental impact statement puts the cart before the horse. There does not appear to be any principled basis for restricting the requirements of 40 C.F.R. § 1502.21 to impacts that the agency has already deemed significant.³⁹ Accordingly, CEQ should revise 40 C.F.R. § 1502.21 to apply to all impacts, and not only significant impacts assessed in an environmental impact statement.

³³ 40 C.F.R. § 1502.21(c)(4).

³⁴ *See, e.g.,* Native Vill. of Point Hope v. Salazar, 730 F. Supp. 2d 1009, 1018 (D. Alaska 2010) (rejecting decision to offer nearly 30 million acres of public lands on the Outer Continental Shelf for oil and gas leasing after agency failed to grapple with “missing information about the Chukchi Sea environment and the potential effects of the lease sale on wildlife and subsistence”). This case refers to the provision as 40 C.F.R. § 1502.22, as it was codified prior to the 2020 Rule.

³⁵ *Vecinos para el Bienestar de la Comunidad Costera v. Fed. Energy Regul. Comm’n*, 6 F.4th 1321, 1327–30 (D.C. Cir. 2021).

³⁶ 40 C.F.R. § 1502.21(a). CEQ regulations further provide that agencies “may” apply 40 C.F.R. § 1502.21 in the context of environmental assessments. *Id.* § 1501.5(g)(1).

³⁷ In a recent oral argument before the D.C. Circuit, for instance, FERC argued that 40 C.F.R. § 1502.21 does not apply to environmental assessments. Oral Argument, *Del. Riverkeeper Network v. Fed. Energy Regul. Comm’n*, No. 20-1206 (D.C. Cir. Sept. 24, 2021).

³⁸ For example, a power plant’s water intake may only be a significant effect after considering climate-change exacerbated regional drought.

³⁹ While CEQ promulgated these regulatory requirements to “codif[y] ... judicially created principles” from cases decided prior to the initial 1978 regulations, *Sierra Club v. Sigler*, 695 F.2d 957, 969–73 (5th Cir. 1983), those cases do not restrict their holdings to impacts that the agency has already deemed significant. In one key case, for instance, the D.C. Circuit applauded the U.S. Atomic Energy Commission for using sophisticated research methods to determine the risk of a severe reactor accident to be “extremely low.” *Carolina Env’t Study Grp. v. United States*, 510 F.2d 796, 799–800 (D.C. Cir. 1975). As this case demonstrates, it is appropriate for agencies to deploy rigorous research methods not only to assess the severity of impacts that the agency has already determined to be significant, but also to assess whether an impact is significant in the first place.

Revise 40 C.F.R. § 1502.21: (a) When an agency is evaluating reasonably foreseeable **significant** adverse effects on the human environment **in an environmental impact statement** and there is incomplete or unavailable information, the agency shall make clear that such information is lacking.

(b) If the incomplete but available information relevant to reasonably foreseeable **significant** adverse impacts is essential to a reasoned choice among alternatives, and the overall costs of obtaining it are not unreasonable, the agency shall include the information in the environmental impact statement **or environmental assessment**.

(c) If the information relevant to reasonably foreseeable **significant** adverse impacts cannot be obtained because the overall costs of obtaining it are unreasonable or the means to obtain it are not known, the agency shall include within the environmental impact statement **or environmental assessment ...**

The term “significant” appears several additional times in the provision and should be removed in each instance.

5. Revise the Definition of “Affected Environment” in 40 C.F.R. § 1502.15 To Explicitly Include Climate Change Impacts

Properly identifying the environment affected by a major federal action is a fundamental prerequisite for conducting environmental review under NEPA. In a world increasingly shaped by the current and future impacts of climate change, an effective baseline assessment of the environment must incorporate forward-looking climate projections rather than relying on historical data. CEQ squarely recognized such an approach in its 2016 climate guidance, which specified that “the reasonably foreseeable affected environment” included “[t]he current and projected future state of the environment without the proposed action (i.e., the no action alternative).”⁴⁰

Despite this obligation, **surveys of environmental impact statements reveal a pattern of superficial and incomplete review in baseline assessments of the impact of climate change on the affected environment.**⁴¹ Accordingly, CEQ should amend the definition of “affected environment” in 40 C.F.R. § 1502.15 to specify that “reasonably foreseeable environmental trends” include climate change-related impacts on areas that will bear the environmental consequences of the project. Such an addition would further clarify the need to consider the future climate conditions of these affected areas specifically rather than allow for an environmental impact statement that only describes general climate change trends at the global or national level. CEQ could make this clarification directly in the definition of “affected environment.”

CEQ should further provide direction that such review includes the full scope of climate change impacts on the affected environment. Surveys reveal that when environmental reviews include consideration of climate vulnerability and resilience impacts, they have not consistently considered the full scope of impacts that could meaningfully affect an action.⁴² **CEQ can better ensure adequate analysis of climate change impacts by amending the affected environment provision**

⁴⁰ CEQ 2016 Final Climate Guidance, *supra* note 12, at 21. *See also id.* at 20–25; *id.* at 24 (“Climate change effects on the environment and on the proposed project should be considered in the analysis of a project considered vulnerable to the effects of climate change such as increasing sea level, drought, high intensity precipitation events, increased fire risk, or ecological change.”).

⁴¹ *See, e.g.,* WEBB ET AL., *supra* note 13, at 46.

⁴² *See, e.g., id.*

to specify the need to consider the full range of climate change impacts affecting the area, and efforts to mitigate these impacts, based on the best available science, including the best available downscaled data for the affected environment. This more robust consideration of the affected environment should be integrated into other components of environmental review, including consideration of environmental consequences and action alternatives, which rely on this baseline information.

Both agencies and reviewing courts have described perceived uncertainty around what data and tools to use as a barrier to the agency's more substantive consideration of how climate change will impact the environment.⁴³ **CEQ can employ a combination of regulatory amendments and further guidance to better clarify what constitutes adequate review.** In the absence of such clarification, this confusion has resulted in analyses with minimal review of climate vulnerability and resilience effects⁴⁴ that courts have deemed sufficient due to the lack of established best practices. For example, the U.S. District Court for the District of Nevada upheld a cursory summary of global and regional trends that made no effort to integrate local impacts into decisionmaking regarding the project.⁴⁵ This lack of clarification inhibits NEPA's goal to inform environmental decisionmaking.

To further clarify the appropriate methodological approaches to fulfil these requirements, CEQ should additionally complete its review of the 2016 guidance and reissue updated or new climate guidance.⁴⁶

Add additional sentences to 40 C.F.R. § 1502.15: The environmental impact statement shall succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration, including the reasonably foreseeable environmental trends and planned actions in the area(s). **The reasonably foreseeable environment includes the full range of reasonably foreseeable climate change impacts affecting the area and efforts to mitigate these impacts. Consideration of these impacts should be based on the best available science, including the best available downscaled data on local and regional impacts for the affected environment.**

⁴³ *Idaho Rivers United*, 2016 WL 498911, at *17 (“The Corps emphasizes that there is general uncertainty surrounding local impacts from climate change. . . . The court must defer to an agency’s determination as to predictions within its area of special expertise, especially when those predictions are at the frontiers of science. . . . Based on the foregoing, the court cannot conclude that the Corps’ assessment of the effects of climate change in the FEIS violated NEPA.”) (internal quotation marks omitted); BUREAU OF LAND MANAGEMENT, RICHFIELD FIELD OFFICE PLANNING AREA PROPOSED RESOURCE MANAGEMENT AND FINAL ENVIRONMENTAL IMPACT STATEMENT 4-4 (2008) (“The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts.”); *S. Utah Wilderness All. v. Burke*, 981 F. Supp. 2d 1099, 1111 (D. Utah 2013), *vacated sub nom.* *S. Utah Wilderness All. v. U.S. Dep’t of the Interior*, No. 2:12CV257 DAK, 2017 WL 11516766 (D. Utah May 17, 2017) (“BLM is limited in its ability to predict specific climate change on a regional and local scale because of a lack of scientific tools designed for such purposes.”).

⁴⁴ *See, e.g., Kunaknana v. U.S. Army Corps of Eng’rs*, No. 3:13-cv-00044-SLG, 2015 WL 3397150, at *12 (D. Alaska 2015) (acknowledging that the Corps “performed only a minimalist review” of climate change impacts in the Arctic, but concluding that without more precise instructions or the identification of more specific climate change information, the Corps’ “limited consideration of the topic was adequate”).

⁴⁵ *See, e.g., Ctr. for Biological Diversity v. U. S. Bureau of Land Mgmt.*, No. 2:14-cv-00226-APG-VCF, 2017 WL 3667700 (D. Nev. Aug. 23, 2017) (concluding that the agency’s qualitative analysis of global and regional climate change trends was sufficient, finding that nothing in NEPA or the case law indicated more was needed and pointing out that the CEQ 2016 Final Climate Guidance did not indicate that agencies must quantify climate change impacts or specifically predict precise changes).

⁴⁶ *See* Policy Integrity Comments, *supra* note 5, at 32–35.

6. Add Additional Language to 40 C.F.R. § 1502.23 To Clarify that Scientific Accuracy for Climate Change Data Requires Forward-Looking Projections and Appropriately Scaled Data

Climate science is forward-looking and relies on projections of possible future scenarios. Modeling climate impacts at a global, regional, or local level is an evolving field in which new and improved information should be considered whenever possible. CEQ should update its provision on methodology and scientific accuracy to more explicitly provide the foundational principles that will better ensure accuracy of climate science in environmental review.⁴⁷

As discussed above, agencies have characterized uncertainty around what data and tools to use as a barrier to close consideration of both a project's impacts on climate change and the impacts of climate change on a project—resulting, typically, in minimal analysis. **Further regulatory clarification can help correct agencies' use of out-of-date information that may contribute to underestimating climate risks.⁴⁸ It can also further agencies' use of data at the appropriate scale for each impact of concern.** For example, a global scale is likely necessary to fully capture the extent to which a project contributes to climate change, whereas a local scale utilizing downscaled data may be necessary to better predict the impacts of climate change on the affected environment.

These suggested regulatory amendments will provide a framework that updated or new climate guidance can build upon with greater specificity and detail on appropriate methodologies. The substance of this proposed amendment is consistent with judicially recognized agency authority under NEPA to conduct necessary analysis even in the face of some degree of uncertainty, which can include consideration of forecasted ranges. For example, the U.S. District Court for the District of Columbia found in the case where an agency had “information allowing it to forecast GHG emissions” that the agency “could have expressed the forecasts as ranges, and it could have explained the uncertainties underlying the forecasts, but it was not entitled to simply throw up its hands and ascribe any effort at quantification to ‘a crystal ball inquiry.’”⁴⁹

Add additional sentences or a new subsection to 40 C.F.R. § 1502.23: Agencies shall use forward-looking projections when evaluating the reasonably foreseeable effects of climate change. Climate projections should not be considered unreliable merely because they employ mathematical or other models that project a range of possible future outcomes. Agencies shall make use of data appropriately scaled for each environmental effect being analyzed.

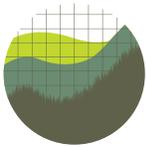
Conclusion

CEQ's upcoming Phase 2 rulemaking offers an important opportunity to promote adequate consideration of climate change under NEPA. As detailed above, a few straightforward rule changes can help ensure that agencies meaningfully and rationally factor climate change into their environmental reviews and related agency-specific regulations and guidance.

⁴⁷ See WEBB ET AL., *supra* note 13, at 52–53.

⁴⁸ *Id.* at 48–49.

⁴⁹ *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 70 (D.D.C. 2019) (quoting *Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973)).



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