

Chapter 14

CLIMATE CHANGE REGULATION UNDER FEDERAL ENVIRONMENTAL STATUTES

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I. INTRODUCTION

This chapter discusses the application of existing U.S. environmental statutes, other than the Clean Air Act, to climate change. In the absence of any comprehensive federal climate change legislation, advocates and policymakers have turned to existing U.S. laws to force mitigation and adaptation efforts. At times, their efforts have fit easily within the statutory structure of a given law. At other times, however, their attempts to force climate change concerns into an existing statute have proven more challenging on both practical and legal levels.

This chapter explores how existing environmental laws could promote climate change mitigation and adaptation and whether attempts to graft climate change onto these statutes could have overall beneficial or detrimental consequences — both for climate change law and the underlying statutes. Section II of this chapter discusses the National Environmental Policy Act (NEPA). Section III covers the Endangered Species Act (ESA). Finally, Section IV discusses the Clean Water Act.

II. THE NATIONAL ENVIRONMENTAL POLICY ACT

In the United States, the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §§ 4321–4370e, establishes a broad national commitment to protecting and promoting environmental quality by focusing an agency’s attention on the environmental consequences of a proposed project. NEPA thus ensures that agencies will not overlook or underestimate important environmental impacts only to later discover the true consequences of a decision after the fact. NEPA also aims to guarantee “that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.” *See* *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

To fulfill these goals, NEPA provides:

[A]ll agencies of the Federal Government shall . . . 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.

42 U.S.C. § 4332(2)(C).

This “detailed statement” is known as an environmental impact statement (EIS) (other countries more commonly use the term environmental impact assessment (EIA)). NEPA’s mandate to prepare an EIS has several important threshold questions: Is the action federal? Is the action major? Are the impacts of the action significant?

Assuming an action satisfies these three threshold questions, NEPA and its implementing regulations, 40 C.F.R. §§ 1500–1517, require an agency to assess the direct, indirect, and cumulative impacts of the proposed action and to propose measures to mitigate any adverse impacts. The agency must also evaluate reasonable alternatives to the proposed project, as well as each alternative’s potential direct, indirect, and cumulative impacts and possible mitigation measures.

An agency may prepare a less detailed Environmental Assessment (EA) to determine whether a proposed action requires a full EIS. 40 C.F.R. § 1501.4(b). The EA must briefly describe the proposal, examine alternatives, and assess the environmental impacts. 40 C.F.R. § 1508.9. Based on the information included in the EA, an agency may issue a “finding of no significant impact” (FONSI), which relieves the agency of its obligation to prepare a full EIS.

Although an EA need not “conform to all the requirements of an EIS,” it must include information “sufficient to establish the reasonableness of th[e] decision” not to prepare an EIS. Found. for N. Am. Wild Sheep v. U.S. Dep’t of Agric., 681 F.2d 1172, 1178 n. 29 (9th Cir. 1982). If the EA establishes that the agency’s action may have significant environmental impacts, the agency must prepare an EIS.

Importantly, the duty to prepare an EIS is procedural only and does not trigger a specific environmental outcome. *Robertson*, 490 U.S. at 350–51. Thus, even if an EIS indicates that one alternative is clearly preferable from an environmental perspective, the agency has no obligation to choose that alternative. Nevertheless, plaintiffs have challenged many agency actions under NEPA, alleging the agencies failed to incorporate the impacts of climate change in their EAs and EISs. What value does NEPA offer if an EA or EIS does not force the agency to take any particular action? Consider that question as you read the cases below.

A. Does an Action Require an EIS?

As noted above, several threshold issues determine whether a federal agency must prepare an EIS. Under NEPA and cases interpreting it, “action” includes “new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies.” 40 C.F.R. § 1508.18. An action is “federal” if it is “potentially subject to federal control or responsibility.” *Id.* To date, these threshold issues have not factored in climate change litigation. Whether impacts of a federal project are “significant,” however, has.

A number of cases have challenged the adequacy of EAs, claiming that the climate impacts of agency actions have triggered the need for full-blown EISs. In an early climate change case, a group of cities, states, and environmental groups challenged the failure of the National Highway Traffic Safety Administration (NHTSA) to prepare an EIS addressing the climate change impacts of its relaxed Corporate Average Fuel Economy (CAFE) standards for automobiles. *City of Los Angeles v. NHTSA* 912 F.2d 478 (D.C. Cir. 1990); *overruled in part by Florida Audubon v. Bentsen*, 94 F.3d 658 (D.C. Cir. 1996). The Energy Policy and Conservation Act of 1975 (EPCA) made 27.5 miles per gallon the presumptive CAFE standard for Model Year 1985 (MY 85) and thereafter. The Act also authorized NHTSA to set a different standard, not lower than 26.0 mpg, for any individual model year at the level it determines to be “the maximum feasible average fuel economy level” for that year. NHTSA exercised this authority to set the standard at 26.0 mpg for MYs 87-88 and at 26.5 mpg for MY 89. After preparing an EA for each of these findings, NHTSA issued its FONSI, stating that the lower CAFE standards would not “significantly affect[] the quality of the human environment.” The petitioners claimed that NHTSA should have prepared an EIS to consider, among things, the adverse climatic effects of the increase in fossil fuel consumption that would result from setting a CAFE standard lower than 27.5 mpg. The court held that the small percentage increase in greenhouse gas emissions from the proposed standard would not cause significant environmental impacts. Thus, NHTSA’s decision not to prepare an EIS was not “arbitrary, capricious, or otherwise contrary to law.”

In *Center for Biological Diversity v. National Highway Traffic Safety Administration*, almost two decades after *City of Los Angeles*, the courts had a chance to revisit fuel economy standards and NHTSA’s approach to determining those standards.

**CENTER FOR BIOLOGICAL DIVERSITY v. NATIONAL HIGHWAY
TRAFFIC SAFETY ADMINISTRATION**

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

BETTY B. FLETCHER, Circuit Judge:

Eleven states, the District of Columbia, the City of New York, and four public interest organizations petition for review of a rule issued by the National Highway Traffic Safety Administration (NHTSA) entitled “Average Fuel Economy Standards for Light Trucks, Model Years 2008-2011,” 71 Fed.Reg. 17,566 (Apr. 6, 2006) (“Final Rule”) (codified at 49 C.F.R. pt. 533). Pursuant to the Energy Policy and Conservation Act of 1975 (EPCA), 49 U.S.C. §§ 32901-32919 (2007), the Final Rule sets corporate average fuel economy (CAFE) standards for light trucks, defined by NHTSA to include many Sport Utility Vehicles (SUVs), minivans, and pickup trucks, for Model Years (MYs) 2008-2011. For MYs 2008-2010, the Final Rule sets new CAFE standards using its traditional method, fleet-wide average (Unreformed CAFE). For MY 2011 and beyond, the Final Rule creates a new CAFE structure that sets varying fuel economy targets depending on vehicle size and requires manufacturers to meet different fuel economy levels depending on their vehicle fleet mix (Reformed CAFE). * * *

Petitioners argue that NHTSA’s Environmental Assessment is inadequate under NEPA because it fails to take a “hard look” at the greenhouse gas implications of its rulemaking and fails to analyze a reasonable range of alternatives or examine the rule’s cumulative impact. Petitioners also argue that NEPA requires NHTSA to prepare an Environmental Impact Statement.

I. FACTUAL AND PROCEDURAL BACKGROUND

* * * NHTSA issued the Final Rule on April 6, 2006. NHTSA set the CAFE standards for MY 2008-2010 (Unreformed CAFE) at the same levels as proposed in the NPRM [notice of proposed rulemaking].³⁰ Unreformed CAFE sets a fleet-wide average fuel economy standard “with particular regard to the ‘least capable manufacturer with a significant share of the market.’” NHTSA has reformed the structure of the CAFE program for light trucks, effective MY 2011 (Reformed CAFE). Under Reformed CAFE, fuel economy standards are based on a truck’s footprint, with larger footprint trucks subject to a lower standard and smaller footprint trucks subject to higher standards. Instead of six footprint categories (a step function) as proposed in the NPRM, Reformed CAFE would be based on a continuous function, meaning a separate fuel economy target for each vehicle of a different footprint. “A particular manufacturer’s compliance obligation for a model year will be calculated as the harmonic average of the fuel economy targets for the manufacturer’s vehicles, weighted by the distribution of manufacturer’s production volumes among the footprint increments.” A manufacturer’s CAFE compliance obligation will vary with its fleet mix. A manufacturer that produces more large footprint light trucks will have a lower required CAFE standard than one that produces more small footprint light trucks.

³⁰ MY 2008: 22.5 mpg; MY 2009: 23.1 mpg; MY 2010: 23.5 mpg.

During MYs 2008-2010, manufacturers may choose to comply with Unreformed CAFE or Reformed CAFE. * * *

II. STANDARD OF REVIEW

The Administrative Procedure Act (APA), 5 U.S.C. §§ 701-706 (2007), provides that agency action must be set aside by the reviewing court if it is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” * * *

NHTSA’s compliance with NEPA is reviewed under an arbitrary and capricious standard pursuant to the APA. With respect to NEPA documents, the agency must take a “hard look” at the impacts of its action by providing “a reasonably thorough discussion of the significant aspects of the probable environmental consequences.” *Thomas*, 137 F.3d at 1149. We must determine whether the EA “foster[s] both informed decision-making and informed public participation.” *Native Ecosystems Council v. U.S. Forest Serv.*, 418 F.3d 953, 960 (9th Cir. 2005).

III. DISCUSSION * * *

An agency must prepare an EIS “if ‘substantial questions are raised as to whether a project . . . may cause significant degradation of some human environmental factor.’” *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1149 (9th Cir. 1998). Petitioners “need not show that significant effects *will in fact occur*,” but only that there are “substantial questions whether a project may have a significant effect.” *Id.* at 1150 (internal quotation marks omitted). “If an agency decides not to prepare an EIS, it must supply a ‘convincing statement of reasons’ to explain why a project’s impacts are insignificant. ‘The statement of reasons is crucial to determining whether the agency took a ‘hard look’ at the potential environmental impact of a project.’” *Blue Mountains Biodiversity Project*, 161 F.3d at 1212.

“Whether there may be a significant effect on the environment requires consideration of two broad factors: ‘context and intensity.’” *Nat’l Parks & Conservation Ass’n*, 241 F.3d at 731 (quoting 40 C.F.R. § 1508.27). A number of factors should be considered in evaluating intensity, including, “[t]he degree to which the proposed action affects public health or safety,” “[t]he degree to which the effects on the quality of the human environment are likely to be highly controversial,” “[t]he degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks,” “[t]he degree to which the action may establish a pre for future actions with significant effects or represents a decision in principle about a future consideration,” “[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts,” and “[t]he degree to which the action may adversely affect an endangered or threatened species or its habitat.” 40 C.F.R. § 1508.27(b)(2), (4), (5), (6), (7), (9). An action may be “significant” if one of these factors is met. *Ocean Advocates v. U.S. Army Corps of Eng’rs*, 361 F.3d 1108, 1125 (9th Cir. 2004); *see also Nat’l Parks & Conservation Ass’n*, 241 F.3d at 731 (either degree of uncertainty or controversy “may be sufficient to require preparation of an EIS in appropriate circumstances.”).

NHTSA's finding of no significant impact (FONSI) stated that the agency determined that its Final Rule "will not have a significant effect on the human environment. This finding of no significant impact is based on the attached Final Environmental Assessment (EA). . . ." In the Final EA, NHTSA explained that compared to the "baseline" alternative of extending the MY 2007 light truck CAFE standard through MYs 2008-2011, its evaluated alternatives would have a minor beneficial impact on various environmental resources. NHTSA concluded that "the final rule would produce, compared to U.S. emissions of CO₂, a small decrease in emissions of CO₂, the primary component of greenhouse gas emissions, under the selected alternative. Accordingly, the agency determined that the action we are adopting today will not have a significant impact on the environment."

Petitioners argue that the evidence raises a substantial question as to whether the Final Rule *may have* a significant impact on the environment and that NHTSA failed to provide a convincing statement of reasons for why a small decrease (rather than a larger decrease) in the growth of CO₂ emissions would not have a significant impact on the environment. Petitioners note that NHTSA has never evaluated the impacts of carbon emissions from light trucks or other vehicles, much less the effect of any reduction or increase in those emissions on climate change. Petitioners presented evidence that continued increase in greenhouse gas emissions may change the climate in a sudden and non-linear way. Without some analysis, it would be "impossible for NHTSA to know . . . whether a change in GHG emissions of 0.2% or 1% or 5% or 10% . . . will be a significant step toward averting the 'tipping point'" and irreversible adverse climate change.

NHTSA argues that its "conclusion that a 0.2 percent decrease in carbon dioxide emissions will not have a significant impact upon the environment is self-evidently reasonable and consistent" with *City of Los Angeles v. NHTSA*, 912 F.2d 478 (D.C. Cir. 1990). . . . NHTSA also argues that the impact of the rule on global warming is too speculative to warrant NEPA analysis.

We conclude that NHTSA's FONSI is arbitrary and capricious and the agency must prepare an EIS because the evidence raises a substantial question as to whether the Final Rule may have a significant impact on the environment. *See Idaho Sporting Congress*, 137 F.3d at 1149 (holding that an EIS must be prepared "if substantial questions are raised as to whether a project . . . *may* cause significant degradation of some human environmental factor" (alteration in original; internal quotation marks omitted)). Moreover, NHTSA has failed to provide a convincing statement of reasons for its finding of insignificance.

Petitioners have raised a "substantial question" as to whether the CAFE standards for light trucks MYs 2008-2011 "*may* cause significant degradation of some human environmental factor," particularly in light of the compelling scientific evidence concerning "positive feedback mechanisms" in the atmosphere. Among the evidence Petitioners presented to the agency was the following:

[concerns relating to increases in temperature, rising sea levels, impacts on biodiversity, breakdown in marine ecosystems, and many of the other issues discussed in Chapter 1 of this book].

Finally, Petitioners have satisfied several of the “intensity” factors listed in 40 C.F.R. § 1508.27(b) for determining “significant effect.” For example, the Final Rule clearly may have an “individually insignificant but cumulatively significant” impact with respect to global warming. Evidence that Petitioners submitted in the record also shows that global warming will have an effect on public health and safety. Petitioners do not claim (nor do they have to show) that NHTSA’s Final Rule would be the *sole* cause of global warming, and that is NHTSA’s only response on this point.

Petitioners have also satisfied the “controversy” factor. *See* 40 C.F.R. § 1508.27(b)(4); *see Blue Mountains Biodiversity Project*, 161 F.3d at 1212 (“‘controversial’ is ‘a substantial dispute [about] the size, nature, or effect of the major Federal action rather than the existence of opposition to a use.’” (alteration in original)). NHTSA received over 45,000 individual submissions on its proposal. We reject NHTSA’s argument that “petitioners’ controversy does not concern the ‘size, nature, or effect’ of the new CAFE standards, but rather the desire of some commenters for different regulations that they have not described in any detail.” The entire dispute between Petitioners and NHTSA centers on the *stringency* of the MY 2008-2011 light truck CAFE standards — their “size” or “effect.”

In light of the evidence in the record, it is hardly “self-evident” that a 0.2 percent decrease in carbon emissions (as opposed to a greater decrease) is not significant. NHTSA’s conclusion that a small reduction (0.2% compared to baseline) in the growth of carbon emissions would not have a significant impact on the environment was unaccompanied by any analysis or supporting data, either in the Final Rule or the EA.

Nowhere does the EA provide a “statement of reasons” for a finding of no significant impact, much less a “convincing statement of reasons.” For example, the EA discusses the amount of CO₂ emissions expected from the Rule, but does not discuss the potential impact of such emissions on climate change. In the “Affected Environment” section of the EA, NHTSA states that “[i]ncreasing concentrations of greenhouse gases are likely to accelerate the rate of climate change.” The agency notes that “[t]he transportation sector is a significant source of greenhouse gas (GHG) emissions, accounting for approximately 28 percent of all greenhouse gas emissions in the United States.” From this, NHTSA jumps to the conclusion that “[c]oupled with the effects resulting from the 2003 light truck rule, the effects resulting from the agency’s current action are expected to lessen the GHG impacts discussed above.”

Table 3-2 of the EA, which shows the potential health effects of criteria air pollutants, is similarly devoid of meaningful analysis or a statement of reasons why the effects would be insignificant. The potential health effect for CO₂ is described: “Increase in greenhouse gases can lead to climate change. Hot temperatures can lead to cardiovascular problems, heat exhaustion, and some respiratory problems. There may be an increased risk of infectious diseases due to increased temperatures. Heat can also increase the concentration of ground-level ozone.”

Nor is there any analysis or statement of reasons in the section of the EA that discusses environmental impacts. The EA states that reduction in fuel production and consumption would reduce “contamination of water resources,” acid rain, risk of oil spills and contamination, and “lead to minor reductions in impacts to biological resources . . . includ[ing] habitat encroachment

and destruction, air and water pollution, greenhouse gases, and oil contamination from petroleum refining and distribution.” [Final EA] at 32-33; *see also id.* at 39 (Table 4-7 compares the impacts under the baseline CAFE standard of 22.2 mpg and the analyzed alternatives. It cursorily summarizes the impacts as “slower rate of growth in fuel consumption for light trucks,” “reduction of GHG emissions,” and “minor benefit [to water and biological resources] from reductions in energy consumption, GHG emissions and extremely small changes in criteria pollutant emissions.”); *id.* at 32-33 (citing no supporting data for its conclusions regarding impacts on water and biological resources).

NHTSA’s EA “shunted aside [significant questions] with merely conclusory statements,” failed to “directly address[]” “substantial questions,” and most importantly, “provide[d] no foundation” for the important inference NHTSA draws between a decrease in the rate of carbon emissions growth and its finding of no significant impact. NHTSA makes “vague and conclusory statements” unaccompanied by “supporting data,” and the EA “do[es] not constitute a ‘hard look’ at the environmental consequences of the action as required by NEPA.” *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 973 (9th Cir. 2006). Thus, the FONSI is arbitrary and capricious. *See Klamath-Siskiyou Wildlands Center*, 387 F.3d at 994 (“[T]he problem with the entire table is that it does not provide any objective quantification of the impacts. Instead, the reader is informed only that a particular environmental factor will be ‘unchanged,’ ‘improved,’ or ‘degraded’ and whether that change will be ‘minor’ or ‘major.’ The reader is not told what data the conclusion was based on, or why objective data cannot be provided.”).

The only reason NHTSA provided for why the environmental impact of the Final Rule would be insignificant is that it results in a decreased rate of growth of GHG emissions compared to the light truck CAFE standard for MY 2007. But simply because the Final Rule may be an improvement over the MY 2007 CAFE standard does not necessarily mean that it will not have a “significant effect” on the environment. NHTSA has not explained *why* its rule will not have a significant effect.

Petitioners have raised a substantial question of whether the Final Rule *may* significantly affect the environment. NHTSA acknowledges that carbon emissions contribute to global warming, and it does not dispute the scientific evidence that Petitioners presented concerning the significant effect of incremental increases in greenhouses gases. NHTSA has not provided a “statement of reasons *why* potential effects are insignificant,” much less a “convincing statement of reasons.” *See Blue Mountains Biodiversity Project*, 161 F.3d at 1211 (emphasis added) (internal quotation marks omitted). It asserts simply that the insignificance of the effects is “self-evident[].”

Finally, we must decide the appropriate remedy given NHTSA’s inadequate EA. We have previously recognized that preparation of an EIS is not mandated in all cases simply because an agency has prepared a deficient EA or otherwise failed to comply with NEPA. If, for example, an EA is so procedurally flawed that we cannot determine whether the proposed rule or project may have a significant effect, the court should remand for the preparation of a new EA. If an agency completely fails to prepare an EA before deciding that a proposed project or rule will have no significant environmental impact, remand for preparation of an EA is likewise the proper remedy. And where an agency determines that consideration of certain factors are legally

irrelevant to the agency's action, rendering it impossible for the reviewing court to determine the accuracy of the FONSI, we also remand for preparation of an EA on a complete record.

By contrast, if the court determines that the agency's proffered reasons for its FONSI are arbitrary and capricious and the evidence in a complete administrative record demonstrates that the project or regulation may have a significant impact, then it is appropriate to remand with instructions to prepare an EIS.

The distinction — between cases where it is appropriate to order immediate preparation of an EIS and those where it is not — is implicit in this circuit's NEPA jurisprudence, and has been explicitly recognized elsewhere. So, if there is uncertainty over whether the proposed project may have a significant impact, including uncertainty caused by an incomplete administrative record or an inadequate EA, the court should ordinarily remand for the agency to either prepare a revised EA or reconsider whether an EIS is required.

Whether to require an EIS now is a very close question. Petitioners' evidence demonstrates, overwhelmingly, the environmental significance of CO₂ emissions and the effect of those emissions on global warming. How NHTSA can, on remand, prepare an EA that takes proper account of this evidence and still conclude that the 2006 Final Rule has *no* significant environmental impact is questionable. *See* 40 C.F.R. § 1508.13 (FONSI is a document “presenting the reasons why an action . . . *will not* have a significant effect on the human environment and for which an [EIS] therefore will not be prepared” (emphasis added)). We nonetheless give the benefit of the doubt to NHTSA and decline to order the immediate preparation of an EIS for two reasons.

First, the EA's primary deficiency lies with its conclusory assertion that a modest 0.2 percent decrease in carbon emissions renders the 2006 Final Rule environmentally insignificant. The EA provides no reasons or analysis in support of this conclusion, much less “convincing” reasons. Although Petitioners' evidence is daunting we cannot, in the abstract, categorically decide that NHTSA's reasons for this conclusion in a revised EA would be unconvincing.

Second, we have a significant reason to defer to the agency as to whether an EA will suffice or whether an EIS is necessary. During the pendency of this appeal, Congress enacted the Energy Independence and Security Act of 2007 (“EISA”). Pub.L. No. 110–140, 121 Stat. 1492. EISA requires NHTSA to increase fuel economy standards for passenger and non-passenger automobiles to reach a combined average of at least 35 mpg by model year 2020. *See* 49 U.S.C. § 32902(b)(2)(A). In connection with EISA, NHTSA has already begun preparation of a complete EIS to inform the “NEPA analysis relating to the CAFE standards for MY 2011–2015 automobiles,” including light trucks. With the exception of MY 2011, the EIS prepared as a result of the passage of EISA will not encompass the CAFE standards implemented by the 2006 Final Rule. However, information developed in preparation of the EISA-based EIS would undoubtedly inform NHTSA's decision as to the necessity of an EIS in this case.

Taken together, these reasons lead us to conclude that the record is insufficiently complete for us to order the immediate preparation of an EIS. We therefore remand to NHTSA to prepare a revised EA or, as necessary, a complete EIS.

QUESTIONS AND DISCUSSION

1. In *City of Los Angeles v. NHTSA*, the majority upheld NHTSA's decision not to prepare an EIS covering its CAFE standards for MYs 1987-1988 and 1989. 912 F.2d at 482. Then-Judge Ruth Bader Ginsburg joined in Judge D. Ginsburg's opinion on NRDC's NEPA challenge, and she provided two reasons for her concurrence: "(1) NRDC's apparent acceptance of NHTSA's finding that the 1.0 mpg CAFE rollback at issue would yield a 'maximum theoretical increase of less than one percent in greenhouse gases,' . . . and (2) NRDC's failure even to allege that such an increase 'would produce any *marginal* effect on the probability, the severity, or the imminence' of the global warming disaster petitioners project." *Id.* at 504 (citation omitted). The court in *Center for Biological Diversity* rejected this analytic approach. 508 F.3d at 557, n. 76. What has changed since 1990?

2. Other cases have concluded that an EIS was not required to assess the impacts of climate change. In *North Slope Borough v. Minerals Management Service*, No. 07-CV-0045 (D. Alaska Jan. 8, 2008) (Unpublished, Doc No. 59), the plaintiffs challenged the failure of the Minerals Management Service to prepare a new EIS for oil and gas lease sales in the Beaufort Sea that assessed the climate change impacts of those sales on subsistence and polar bears. The court upheld the decision not to prepare an EIS, concluding that the rate and impact of climate change are largely independent of whether the new lease sale is permitted. *Id.* at 11. In denying injunctive relief to plaintiffs, the court concluded, "the public interest in energy development favors upholding the scheduled sales. To conclude otherwise would require the Court to engage in multiple levels of speculation regarding climate change, animal migration, and economics, and to conclude that existing federal regulations would not effectively address Plaintiffs' environmental concerns. This the Court cannot do." *Id.* at 13. In several other cases, courts (including the Ninth Circuit, which issued the *Center for Biological Diversity* decision) have upheld agency conclusions that find the localized impacts of climate change insignificant. For example, the Ninth Circuit upheld a Forest Service decision to omit a quantitative discussion of climate change impacts of a project involving a "relatively small amount of land" that would "thin rather than clear cut trees." *Hapner v. Tidwell*, 631 F.3d 1239, 1245 (9th Cir. 2010). The Ninth Circuit also rejected arguments that the Federal Aviation Agency (FAA) failed to adequately consider climate change when it approved a regional airport's proposed expansion. *Barnes v. U.S. Dept. of Transp.*, 655 F.3d 1124 (9th Cir. 2011). The court noted,

Because [the airport] represents less than 1 percent of U.S. aviation activity, greenhouse emissions associated with existing and future aviation activity at [the airport] are expected to represent less than 0.03 percent of U.S.-based greenhouse gases. Because this percentage does not translate into locally-quantifiable environmental impacts given the global nature of climate change, the EA's discussion of the project's in terms of percentages is adequate.

Id. at 1140. What do these later cases indicate about the role of NEPA in climate change mitigation? Most agency actions will result in only incremental increases, or decreases, in greenhouse gases. At what level do they become adequately significant to trigger an EIS?

3. Article III Standing and NEPA. Courts have dismissed several climate change NEPA cases on Article III standing grounds. Some courts have found the plaintiffs failed to demonstrate they suffered an “actual or imminent” injury in fact because they could not scientifically show that climate change would affect the areas they use. Other courts have found that plaintiffs could not show that greenhouse gas emissions from the challenged activities had a sufficient causal link to the plaintiffs’ localized harms. *See* Chapter 17 for more detail.

B. The Scope of the “Effects” Analysis

In preparing an EA or EIS, a federal agency must consider the appropriate range of effects its actions will create. Under NEPA and regulations promulgated by the Council for Environmental Quality (CEQ), agencies must describe the direct, indirect, and cumulative effects of a proposed project. These environmental effects may include impacts that are ecological, aesthetic, historical, cultural, economic, social, or health related. 40 C.F.R. § 1508.8. Because a great many actions contribute to climate change, agencies will face challenges as they identify which impacts are reasonably related to the project and which impacts are reasonably foreseeable.

1. Direct and Indirect Effects

CEQ regulations implementing NEPA require agencies to analyze the direct and indirect effects of a proposed agency action. Direct effects are “caused by the action and occur at the same time and place.” 40 C.F.R. § 1508.8(a). Indirect effects “are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes . . .” 40 C.F.R. § 1508.8(b). Considering the potential expansive scope of indirect effects, how should courts analyze the adequacy of agencies’ NEPA analyses?

MID STATES COALITION FOR PROGRESS v. SURFACE TRANSPORTATION BOARD

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

ARNOLD, J.

Petitioners challenge the decision of the Surface Transportation Board issued January 30, 2002, giving final approval to the Dakota, Minnesota & Eastern Railroad Corporation’s (DM&E) proposal to construct approximately 280 miles of new rail line to reach the coal mines of Wyoming’s Powder River Basin (PRB) and to upgrade nearly 600 miles of existing rail line in Minnesota and South Dakota. They maintain that in giving its approval the Board violated . . . the National Environmental Policy Act (NEPA) * * *

The Sierra Club argues that SEA [Surface Transportation Board’s Section of Environmental Analysis (SEA)] wholly failed to consider the effects on air quality that an increase in the supply of low-sulfur coal to power plants would produce. Comments submitted to SEA explain that the

projected availability of 100 million tons of low-sulfur coal per year at reduced rates will increase the consumption of low-sulfur coal vis-à-vis other fuels (for instance, natural gas). While it is unlikely that this increase in coal consumption would affect total emissions of sulfur dioxide (which are capped nationally at maximum levels by the Clean Air Act Amendments of 1990), the Sierra Club argues that it would significantly increase the emissions of other noxious air pollutants such as nitrous oxide, carbon dioxide, particulates, and mercury, none of which is currently capped as sulfur dioxide is.

Before this court, the Board admits that because of the need to comply with the restrictions in the Clean Air Act Amendments on sulfur dioxide emissions, many utilities will likely shift to the low-sulfur variety of coal that the proposed project would make available. It argues, however, that this shift will occur regardless of whether DM&E's new line is constructed, since the proposed project will simply provide a shorter and straighter route for low-sulfur coal to be transported to plants already served by other railroad carriers. But the proposition that the demand for coal will be unaffected by an increase in availability and a decrease in price, which is the stated goal of the project, is illogical at best. The increased availability of inexpensive coal will at the very least make coal a more attractive option to future entrants into the utilities market when compared with other potential fuel sources, such as nuclear power, solar power, or natural gas. Even if this project will not affect the short-term demand for coal, which is possible since most existing utilities are single-source dependent, it will most assuredly affect the nation's long-term demand for coal as the comments to the DEIS [Draft EIS] explained. Tellingly, DM&E does not adopt the Board's argument that the proposed project will leave demand for coal unaffected: Instead, it adopts the more plausible position that SEA was not required to address the effects of increased coal generation because these effects are too speculative.

NEPA requires that federal agencies consider "any adverse environmental effects" of their "major . . . actions," 42 U.S.C. § 4332(C), and the CEQ regulations, which are binding on the agencies, explain that "effects" include both "direct effects" and "indirect effects," 40 C.F.R. § 1508.8. Indirect effects are defined as those that "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." *Id.* "Indirect effects may include . . . effects on air and water and other natural systems, including ecosystems." *Id.* The above language leaves little doubt that the type of effect at issue here, degradation in air quality, is indeed something that must be addressed in an EIS if it is "reasonably foreseeable," see *id.* As in other legal contexts, an environmental effect is "reasonably foreseeable" if it is "sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision." *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992).

DM&E argues in its brief that "if the increased availability of coal will 'drive' the construction of additional power plants . . . the [Board] would need to know where those plants will be built, and how much coal these new unnamed power plants would use. Because DM&E has yet to finalize coal-hauling contracts with any utilities, the answers to these questions are pure speculation — hardly the reasonably foreseeable significant impacts that must be analyzed under NEPA." Even if this statement is accurate (the Sierra Club has asserted that it is not), it shows only that the *extent* of the effect is speculative. The *nature* of the effect, however, is far from speculative. As discussed above, it is reasonably foreseeable — indeed, it is almost

certainly true — that the proposed project will increase the long-term demand for coal and any adverse effects that result from burning coal.

Contrary to DM&E’s assertion, when the *nature* of the effect is reasonably foreseeable but its *extent* is not, we think that the agency may not simply ignore the effect. The CEQ has devised a specific procedure for “evaluating reasonably foreseeable significant adverse effects on the human environment” when “there is incomplete or unavailable information.” 40 C.F.R. § 1502.22. First, “the agency shall always make clear that such information is lacking.” *Id.* Then, “if the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known,” the agency must include in the environmental impact statement:

- (1) A statement that such information is incomplete or unavailable;
- (2) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment;
- (3) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and
- (4) the agency’s evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.

Id. at § 1502.22(b).

We find it significant that when the Board was defining the contours of the EIS, it stated that SEA would “evaluate the potential air quality impacts associated with the increased availability and utilization of Powder River Basin Coal.” Yet, the DEIS failed to deliver on this promise. Interested parties then submitted comments on the DEIS explaining, for the reasons that we have summarized, why this issue should be addressed in the FEIS [Final EIS]. These parties even identified computer models that are widely used in the electric power industry to simulate the dispatch of generating resources to meet customer loads over a particular study period. According to the commenting parties, these programs could be used to forecast the effects of this project on the consumption of coal. These efforts did not convince SEA, which asserted that “because the 1990 Clean Air Act Amendments mandate reductions in pollutant emissions . . . an assumption of SEA’s analysis was that emissions will definitely fall to the mandated level, producing whatever effect the emissions will have on global warming.” SEA’s “assumption” may be true for those pollutants that the amendments have capped (including, as we have said, sulfur dioxide) but it tells the decision-maker nothing about how this project will affect pollutants not subject to the statutory cap. For the most part, SEA has completely ignored the effects of increased coal consumption, and it has made no attempt to fulfill the requirements laid out in the CEQ regulations.

The Board has stated that this project “is the largest and most challenging rail construction proposal ever to come before [us],” and that the total cost of the project is estimated to be \$1.4 billion, not counting the cost of environmental mitigation. We believe that it would be irresponsible for the Board to approve a project of this scope without first examining the effects that may occur as a result of the reasonably foreseeable increase in coal consumption.

QUESTIONS AND DISCUSSION

1. The court in *Mid States Coalition for Progress* makes a distinction between the extent of an impact and the nature of the impact. What is this distinction? With climate change, will agencies ever be able to evaluate the extent of climate change impacts? How does the nature of a climate change impact differ from other types of impacts? How should the Surface Transportation Board evaluate the nature of climate change impacts of the decision to construct hundreds of miles of new rail line to the coal mines of the Powder River Basin?

2. On remand, SEA's supplemental EIS (SEIS) declared that coal consumption would barely increase as a result of the new rail line and that air emissions of various pollutants, including carbon dioxide, would increase less than 1 percent nationally and regionally as a result of the minimal increase in coal use. To support this finding, the SEA noted that demand for coal would increase even without the new rail line and that the new rail line was just one way of transporting the coal to market. Surface Trans. Board, Decision, Dakota, Minnesota & Eastern RR Corp. Const. into the Powder River Basin, STB Fin. Docket No. 33407, at 11, 16 (Feb. 13, 2006). The plaintiffs filed suit again, this time claiming that the SEIS did not adequately address CO₂ emissions from increased coal use and ignored climate impacts if national coal use expanded by up to 10 percent.

To study the impacts of the project, the Board used the Energy Information Administration's (EIA) National Energy Modeling System (NEMS), which forecasts coal supply and demand as well as quantifies environmental impacts.

The Board explained that NEMS is "essentially a national and regional modeling tool" that could not be used to obtain the same level of predictive information for the local level. The Board stated that such predictive information was relevant since "there could be an increase in certain air emissions because more PRB coal would be consumed as a result of this project." With respect to existing credible scientific evidence and its potential impacts, the Board explained further that in order "to reasonably foresee the likely impacts of this project on a local level, [it] would need to know not only what existing or new power plants would actually use DM & E's service, but also whether they would otherwise not burn PRB coal, not burn as much coal, or burn a different mix of coal." The Board concluded that this could not "be determined in advance here with any degree of confidence."

After noting that "the impacts of this project on coal consumption and resulting air emissions would be small" on a national and regional basis and that any potential local air quality impacts were "speculative" and "ultimately unforeseeable," the Board concluded that it was not necessary to impose additional mitigating conditions on the project.

Mayo Found. v. Surface Transp. Bd., 472 F.3d 545, 555–56 (8th Cir. 2006). After reviewing this information, the court concluded that the Board adequately analyzed the impacts. What, if anything, changed between the time of the first lawsuit and the second one to lead to a different outcome?

3. In *City of Los Angeles, Mayo Foundation*, and other cases, courts have found one percent contributions to climate change too insignificant to trigger NEPA’s requirement to conduct an EIS. In light of the information released by the IPCC regarding the impacts of climate change — as well as the Supreme Court’s decision in *Massachusetts v. EPA* that a small impact on motor vehicle emissions was substantial enough to support Article III standing — do you think the courts have been correct to dismiss these impacts as insignificant? What threshold level of emissions should an agency’s action reach before it is deemed significant? If each agency action must reach a certain threshold, how many agency actions will go through full NEPA review?

In the next case, *Border Power Plant Working Group v. Dept. of Energy*, plaintiffs challenged an EA for approval of two Presidential Permits required for the siting of a transmission line across a border of the United States. See Exec. Order No. 12038; 10 C.F.R. Part 205. The transmission lines would connect new power plants in Mexico to the southern California power grid. Must the EA consider only the impacts of the power lines or must it also evaluate emissions from the new power plants in Mexico? As the notes following the case indicate, the scope of analysis regarding indirect effects remains a contentious issue for energy projects.

BORDER POWER PLANT WORKING GROUP v. DEPT. OF ENERGY

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

GONZALEZ, J.

As a threshold matter, the Court must first determine the scope of the environmental review required by NEPA to determine whether the construction of the power plants is within that scope. Plaintiff assumes in its arguments that the actions whose impacts must be analyzed include not only the construction and operation of the actual transmission lines, but also the operation of the power plants in Mexico to which the lines will be connected. In fact, all, or at least the vast majority, of the complaints of impacts to air quality, water quality, and human health set forth by plaintiff are actually caused by the power plants. Because of this, amicus BCP [Baja California Power] argues that if the “action” at issue here is narrowly limited to the construction and operation of the transmission lines, without regard to the generation of the power, and the emissions of the power plants are not “effects” of that action, then plaintiff’s complaints are immaterial to the permits at issue.

... The Council for Environmental Quality (CEQ), which is charged with implementing NEPA, has defined a “major federal action” as including “actions with effects that may be major and which are potentially subject to Federal control and responsibility.” 40 C.F.R. § 1508.18. Similarly, defendant Department of Energy has defined “action” for NEPA purposes as “a project, plan, or policy ... that is subject to DOE’s control and responsibility.” 10 C.F.R. §

1021.104(b). BCP argues that the latter definition necessarily excludes the Mexican power plants from the scope of the action because these plants are outside the regulatory jurisdiction of the United States.

The first key question under the regulatory definitions is whether the plants will be “projects” that are “subject to [Federal] control and responsibility.” 10 C.F.R § 1021.104(b). Clearly, they are not because they are outside the jurisdiction of the United States. Accordingly, defendants correctly did not include the power plants themselves when defining the scope of the proposed action.

Nonetheless, the environmental analysis of the actions might still require consideration of the operation of the power plants if such operation constitutes an “adverse environmental effect” of the granting of the permit to construct and operate the transmission lines. 42 U.S.C. § 4332(C)(ii). NEPA’s implementing regulations define “effects” and categorize them as “direct” or “indirect.” 40 C.F.R. § 1508.8(a). “Direct effects” are those “which are caused by the action and occur at the same time and place.” *Id.* “Indirect effects” are those “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” *Id.* Thus, as BCP notes, the question is one of causation.

The question of whether the power plants are effects of the proposed action is central to assessing both the legality of the FONSI and to assessing the adequacy of the environmental assessment (EA). First, in deciding whether to prepare an EIS, an agency must consider “significant indirect effects.” *Sylvester v. U.S. Army Corps of Engineers*, 884 F.2d 394, 400, 871 F.2d 817 (9th Cir. 1989). Second, the question of the adequacy of the EA’s analysis of the air impacts, water impacts, and alternatives of the proposed actions, depend[s] on whether the plants’ adverse environmental impacts are effects of the proposed transmission lines.

* * *

[T]he *Sylvester* court held that in order for an agency to be required to consider secondary (indirect) and cumulative impacts (or effects) of an action other than the proposed action under NEPA, the proposed action and the second action must be “two links of a single chain.” In so holding, the *Sylvester* court collected and analyzed the prior cases discussing the question in the Ninth Circuit. *Id.* (citing *Port of Astoria. Oregon v. Hodel*, 595 F.2d 467, 480 (9th Cir. 1979) (agency’s EIS had to consider the supply of federal power and the construction of a private magnesium plant that used the power); *Thomas v. Peterson*, 753 F.2d 754, 761 (9th Cir. 1985) (agency’s EIS had to consider both a federal road and the federal timber sales that the road would facilitate); and *Colorado River Indian Tribes v. Marsh*, 605 F. Supp. 1425, 1433 (C.D.Cal.1985) (agency had to prepare an EIS that considered both the federal action of stabilizing a river bank and the private housing built as a result)). * * *

Importantly, the basis for the *Sylvester* court’s determination of whether two related actions constituted links of a single chain involved determining whether “each [action] could exist without the other.” It was not enough that the actions might be related or that each “might benefit from the other’s presence.” Accordingly, the question in the present case narrows to whether the transmission lines and the power plants at issue would exist in the absence of the other.

* * * It is helpful to differentiate . . . between the scope of the proposed action and scope of the NEPA review. Thus, in the present case, the proposed action does not include the operation of the Mexican power plants. The question remains, however, whether the operation and emissions of those plants must be included within the scope of the NEPA review because they are effects of the proposed federal action. . . . [T]he two additional cases cited by *Sylvester* dealing exclusively with the effects of federal action are central to the present analysis.

First, in *Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810, 816-817 (9th Cir. 1987), rev'd on other grounds, *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989), the court first emphasized that NEPA does not recognize any distinction between primary and secondary effects when requiring environmental review of the effects. *Id.* at 816. In discussing how proximate any effects must be to the proposed action to require their inclusion in the NEPA analysis, the Court held:

. . . [I]t must be remembered that the basic thrust of an agency's responsibilities under NEPA is to predict the environmental effects of proposed action before the action is taken and those effects fully known. Reasonable forecasting and speculation is thus implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as "crystal ball inquiry". Thus we find it imperative that the [agency] evaluate the reasonably foreseeable significant effects which would be proximately caused by implementation of the proposed action.

Id. at 816–17. Similarly, though perhaps more narrowly, the court in *City of Davis v. Coleman*, found that effects must be included in the environmental review when the action is an "indispensable prerequisite" or an "essential catalyst" to the effects. 521 F.2d 661, 674 (9th Cir. 1975). * * *

In sum, Ninth Circuit precedent makes clear that effects must be causally linked to the proposed federal action in order for NEPA to require consideration of those effects in an EA or EIS. In the present case, only BCP puts much weight on the argument that the power plant emissions are not effects of the transmission line project. BCP's principle argument is that the power transmission lines are not a but-for cause of the LRPC [La Rosita Power Complex] emissions because the LRPC would generate some of its power for the Mexican market without regard to whether the transmission lines are completed, and it could send its export power through the Mexican power grid to the United States via an alternative transmission line. Amicus T-US [Termoelectrica-US] does not make the same argument, presumably because the TDM plant will only be producing power for export to the United States, and the only planned transmission line connecting that plant is the one requiring the permit under consideration. The federal defendants appear to concede, both in the EA itself and their briefs, that they were required to analyze to some extent the impacts of the power plants, although they argue, correctly, that the power plants are not within the scope of the proposed action.

* * *

The LRPC plant is divided into three EAX turbines and one EBC turbine. Two of the EAX turbines are designed to produce power exclusively for sale to a Mexican utility, and it is reasonably foreseeable that very little of this power will flow through the BCP transmission line into the United States. The EA does acknowledge the possibility that under limited circumstances, the domestic generation turbines may provide power to the BCP line. The record shows that the third EAX turbine is anticipated to produce power exclusively for export to the United States. However, the power produced by the EAX export turbine could be transmitted to the United States through an alternative interconnection site. Finally, the EBC turbine is configured and licensed only to sell electricity over the BCP line. * * *

Considering only the information that the federal defendants had before them at the time they made their final decisions, the Court finds that it was reasonably foreseeable that the two export turbines in the LRPC would use the BCP transmission line to export the entirety of their power. Furthermore, given that the BCP line is the only current means evidenced by the record through which the EBC turbine could transmit its power, the Court finds that the BCP line was a but-for cause of the generation of power at the EBC turbine. Because the EBC turbine and the BCP transmission line are two links in the same chain, the emissions resulting from the operation of the EBC turbine are “effects” of the BCP transmission line that must be analyzed under NEPA. For the same reasons, the Court finds that the operation of the TDM plant is an effect of the T-US transmission line.

Conversely, the Court finds that the two turbines in the LRPC dedicated almost exclusively to the generation of power for the Mexican market are not causally linked to the BCP line in a way that makes the BCP line a necessary prerequisite or essential catalyst to their operation. Because the line of causation is too attenuated between these turbines and the federal action permitting the BCP line, Ninth Circuit authority makes clear that the emissions of the non-export turbines were not effects of the BCP line and that the federal defendants were therefore under no NEPA obligation to analyze their emissions as effects of the action. Additionally, because the record makes clear that the EAX export turbine has an alternative to the BCP line to export its power, the BCP line cannot be considered the but-for cause of the EAX export turbine’s operation. Indeed, the EA concludes that the EAX export turbine would be built regardless of whether the BCP line is permitted. For this reason, the EAX turbine is also not an effect of the action.

[The court then found the EA inadequate because it failed to disclose and analyze the potential environmental impacts from carbon dioxide emissions].

QUESTIONS AND DISCUSSION

1. In *Border Power*, the court emphasized that the EIS need not consider the Mexican power plants themselves as within the scope of the proposed action. Yet, it declared that the effects of the Mexican power plants must be considered. What is the significance of this distinction? On remand, the Department of Energy (DOE) prepared an EIS that evaluated different technologies used to cool the plants and their environmental impacts. Although the plaintiffs again challenged

the DOE's analysis, the court upheld it as an appropriate exercise of agency discretion. 467 F. Supp.2d 1040 (S.D. Cal. 2006).

2. What Are the Indirect Effects of Cross-border Projects? The scope of the NEPA analysis for cross-border energy projects remains an issue of significant dispute. For example, in *South Coast Air Quality Mgmt. Dist. v. FERC*, 621 F.3d 1085 (9th Cir. 2010), the parties disagreed regarding the scope of impacts FERC had to consider when it approved a natural gas pipeline expansion project that would allow increased natural gas imports from Mexico to California. California's air quality agency argued that NEPA required FERC to consider the environmental impacts of burning gas in California as a result of the pipeline expansion, but FERC disagreed. *Id.* at 1093. FERC had nonetheless analyzed the impacts, so the court did not decide whether FERC had an obligation to assess the impacts from the end use emissions. Under the CEQ regulations, "indirect effects" include reasonably foreseeable effects "caused by the action" that are "later in time or farther removed in distance," and "may include growth inducing effects and other effects related to induced changes. . . ." 40 C.F.R. § 1508.8(b). For any energy project designed to bring new or increased fuels into an area, shouldn't induced changes include increased emissions?

Should the scope of the NEPA analysis differ for projects designed to export fuels from the United States? For example, several rail and coal companies have sought to export coal to Asia through new coal export terminals they would like to build at various Pacific ports. Should the NEPA analysis evaluate the impacts of the greenhouse gas emissions from Asian power plants? How does *Border Power* influence your answer?

The scope of NEPA review will likely arise in any challenge to the Keystone XL pipeline. The Keystone XL pipeline, if built, would transport crude oil (more precisely, bitumen) produced from the tar sands in Alberta, Canada, to the Gulf of Mexico for refining and/or export. Opponents of the pipeline argue the pipeline would enable an expansion of oil production from the tar sands and thereby enable the release of massive amounts of greenhouse gases. Supporters of the pipeline assert the emissions will occur anyway because Canadian companies will build some other pipeline if they cannot build the Keystone XL. How should these arguments affect the scope of the NEPA analysis for the Keystone XL pipeline?

3. Connected Actions. Indirect effects are sometimes confused with "connected actions." The CEQ regulations define "connected actions" as actions that are "closely related and therefore should be discussed in the same impact statement." 40 C.F.R. § 1508.25(a). Actions are "connected" if they:

- (i) Automatically trigger other actions which may require environmental impact statements.
- (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.
- (iii) Are interdependent parts of a larger action and depend on the larger actions for their justification.

Id. For example, courts have considered logging operations and the construction of a road to be “connected actions.” *Save the Yaak Committee v. Block*, 840 F.2d 714, 719 (9th Cir. 1988); *Thomas v. Peterson*, 753 F.2d 754, 758 (9th Cir. 1985). Can you explain how “indirect effects” differ from “connected actions”? Why are the power plants in *Border Power Working Group* evaluated as indirect effects of the construction of transmission lines into the United States but logging roads and logging operations are connected actions?

4. The construction of new power plants in Mexico to provide electricity in the United States can present interesting international issues as well. Consider that, under the cap-and-trade structure of the Kyoto Protocol discussed in Chapter 5, a country is responsible for those emissions that take place within its territory. Imagine that that United States signed onto some sort of post-Kyoto agreement that caps U.S. emissions but not Mexico’s emissions. Could the United States expand its energy consumption by importing coal-generated power from Mexico without violating the U.S. cap? How should the international community address these cross-border emissions, if at all?

2. *Cumulative Impacts*

NEPA regulations define “cumulative” impacts as the “incremental impact of the action when added to other past, present, and reasonably foreseeable future action regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7. Courts have made clear the importance of assessing cumulative impacts:

Cumulative impacts of multiple projects can be significant in different ways. The most obvious way is that the greater total magnitude of the environmental effects . . . may demonstrate by itself that the environmental impact will be significant. Sometimes the total impact from a set of actions may be greater than the sum of the parts.

Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt., 387 F.3d 989, 994 (9th Cir. 2004).

Despite the importance of understanding cumulative impacts, knowing where to draw the line, particularly concerning climate change, is difficult. Consider the following discussion of cumulative impacts from *Center for Biological Diversity*, where plaintiffs challenged the adequacy of the NHTSA’s discussion of cumulative impacts when setting fuel economy standards.

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The EA catalogues the total tonnage of CO₂ emissions for light trucks for MYs 2005-2011.

Table 4-5 of the Final EA lists the amount of fuel consumption and emissions of criteria pollutants and CO₂ emissions. For example, it shows that under Unreformed CAFE, the lifetime CO₂ emissions for light trucks MY 2005-2011 would be 4,979 million metric tons (mmt). Under Reformed CAFE, including MDPVs in MY 2011, CO₂ emissions would be 4,966 million metric tons. NHTSA estimated that:

together with the previous action raising MY 2005-07 light truck CAFE standards, the various alternatives for the current action will reduce lifetime carbon dioxide (CO₂) emissions from MY 2005-11 light trucks by 122 to 196 million metric tons, or by 2.4 to 3.8 percent *from their level if neither action had been taken*. . . . MY 2008-11 light truck CAFE standards are projected to result in cumulative reductions from the previous and current actions ranging from 0.2 to 0.3 percent of U.S. greenhouse gas emissions over the lifetimes of MY 2005-11 light trucks.

We conclude that the EA's cumulative impacts analysis is inadequate. While the EA quantifies the expected amount of CO₂ emitted from light trucks MYs 2005-2011, it does not evaluate the "incremental impact" that these emissions will have on climate change or on the environment more generally in light of other past, present, and reasonably foreseeable actions such as other light truck and passenger automobile CAFE standards. The EA does not discuss the *actual* environmental effects resulting from those emissions or place those emissions in context of other CAFE rulemakings. This is a similar deficiency as that found in the Bureau of Land Management's EA in *Klamath-Siskiyou Wildlands Center*, where this court held that the BLM's cumulative impacts analysis was inadequate because "[a] calculation of the total number of acres to be harvested in the watershed is a necessary component of a cumulative effects analysis, but it is not a sufficient description of the actual environmental effects that can be expected from logging those acres" and "stating the total miles of roads to be constructed is similar to merely stating the sum of the acres to be harvested — it is not a description of the *actual* environmental effects." 387 F.3d at 995.

* * *

We agree with Petitioners that "[b]y allowing particular fuel economy levels, which NHTSA argues translate directly into particular tailpipe emissions, NHTSA's regulations are the proximate cause of those emissions just as EPA Clean Air Act rules permitting particular smokestack emissions are the proximate cause of those air pollutants and are unquestionably subject to NEPA's cumulative impacts requirements." Thus, the fact that "climate change is largely a global phenomenon that includes actions that are outside of [the agency's] control ... does not release the agency from the duty of assessing the effects of *its* actions on global warming within the context of other actions that also affect global warming." The cumulative impacts regulation specifically provides that the agency must assess the "impact of the action when added to other past, present, and reasonably foreseeable future actions *regardless of what agency (Federal or non-Federal) or person undertakes such other actions.*" 40 C.F.R. § 1508.7; *see also Res. Ltd., Inc. v. Robertson*, 35 F.3d 1300, 1306 (9th Cir. 1994) ("The Forest Service says that cumulative impacts from non-Federal actions need not be analyzed because the Federal government cannot control them. That interpretation is inconsistent with 40 C.F.R. § 1508.7,

which specifically requires such analysis.”).

The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct. Any given rule setting a CAFE standard might have an “individually minor” effect on the environment, but these rules are “collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7; *see also Native Ecosystems Council*, 304 F.3d at 897 (holding that the Forest Service’s road density standard amendments must be subject to cumulative impacts analysis because otherwise, “the Forest Service will be free to amend road density standards throughout the forest piecemeal, without ever having to evaluate the amendments’ cumulative environmental impacts.”); *City of Los Angeles v. NHTSA*, 912 F.2d 478, 501 (D.C. Cir. 1990) (Wald, C.J., dissenting) (“[W]e cannot afford to ignore even modest contributions to global warming. If global warming is the result of the cumulative contributions of myriad sources, any one modest in itself, is there not a danger of losing the forest by closing our eyes to the felling of the individual trees?”), *overruled on other grounds by Fla. Audubon Soc. v. Bentsen*, 94 F.3d 658 (D.C. Cir. 1996). Thus, NHTSA must provide the necessary contextual information about the cumulative and incremental environmental impacts of the Final Rule in light of other CAFE rulemakings and other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions.

QUESTIONS AND DISCUSSION

1. The potential scope of a cumulative impacts analysis is very broad. Agencies must evaluate the incremental impact of the action when added to present and reasonably foreseeable actions. In the climate change context, what are present and reasonably foreseeable actions?

2. Place yourself in an agency’s shoes for a moment to consider the potential scope of NEPA review. Imagine, for example, that you perform NEPA analysis for a federal agency that has received a permit application seeking authorization to rebuild a bridge to meet seismic standards. Once built, the bridge will accommodate heavier vehicles than it could have before its reconstruction. The bridge will also include new bike and pedestrian lanes. Finally, the bridge width will expand from two to four lanes. Congestion will decrease as a result of the reconstruction, but overall use of the bridge may increase. Vehicle traffic in nearby areas will also likely grow. What are the cumulative impacts associated with building the bridge? Where would you start and stop your analysis? How would you know where to draw the line?

C. Alternatives

The CEQ regulations describe an EIS’s discussion of alternatives to the proposed project as the heart of the EIS. 40 C.F.R. § 1502.14. Agencies must “rigorously explore and objectively evaluate all reasonable alternatives,” including a “no action” alternative and alternatives within the jurisdiction of other agencies. *Id.* The EIS should “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public.” *Id.* “The rule of

reason guides both the choice of alternatives as well as the extent to which the [NEPA analysis] must discuss each alternative.” *Public Citizen v. Dept. of Transp.*, 316 F.3d 1002, 1028 (9th Cir. 2003). Agencies must also consider alternatives in an EA.

In climate change litigation, many disputes center on the adequacy of the agencies’ proposed alternatives. Is 35 mpg a reasonable alternative to CAFE standards of 27.5 mpg? Are a nuclear power plant and a range of conservation measures reasonable alternatives to a coal-fired power plant? Consider the range of alternatives presented by NHTSA when considering fuel economy standards.

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In the EA, NHTSA considered a very narrow range of alternatives. All the alternatives evaluated were derived from NHTSA’s cost-benefit analysis. * * *

These alternatives are hardly different from the option that NHTSA ultimately adopted. . . . The entire range of alternatives considered in the EA ranged from “22.2 to 22.7 mpg for MY 2008, 22.2 to 23.3 mpg for MY 2009, and 22.2 to 23.6 mpg for MY 2010.” The estimated lifetime fuel and energy use by MY 2008-2011 light trucks under the alternatives ranged from a 1.8 to 2.6 percent decrease from “baseline,” and the estimated lifetime emissions of CO₂ ranged from 2,767 to 2,840 mmt, which is extremely small compared to the overall volume of emissions.

NHTSA acknowledged that “the range of impacts from the considered alternatives is very narrow and minimal.” However, the agency justified its choice of range and refusal to consider other alternatives on the ground that “standards more stringent than those represented by the alternatives would not satisfy the statutory requirement to establish standards . . . that are both technologically feasible and economically practicable. . . . NEPA’s requirements must be applied in light of the constraints placed on the agency by EPCA.” Once again, NHTSA falls back on its contention that it had no discretion to consider setting higher CAFE standards. As before, we conclude that this argument is flawed.

NHTSA also erroneously contends that Petitioners have not identified any specific alternative the agency should have considered. To the contrary, Environmental Defense submitted a detailed appendix to its comment titled, “Revised Benefit-Cost Analysis for Calculating Optimal CAFE Targets.” In this document, Environmental Defense performed a marginal cost-benefit analysis, using a variety of different assumptions and inputs. Table A-1 set forth 28 different possible CAFE standards for MY 2011 (including NHTSA’s figure). On the basis of its calculations, it recommended a final rule that would increase CAFE standards at a rate of 4% per year and achieve a standard of 26 mpg by MY 2011.

QUESTIONS AND DISCUSSION

1. The court in *Center for Biological Diversity* called NHTSA's range of alternatives inadequate because they barely differed from each other. Although the court rejected NHTSA's argument that the CAFE program limited the range of alternatives the agency could consider, many other courts have allowed agencies to propose a limited number of options where substantive mandates constrain the agencies' discretion. Here, how many alternatives do you think NHTSA could reasonably have proposed?

2. Recall that in *Border Power Plant Working Group*, the court required the Department of Energy to assess the environmental impacts relating to the construction of transmission lines, as well as the effects of the new power plants. What are reasonable alternatives to this project? The Department of Energy analyzed three alternatives to the proposed project: a "no action" alternative and two alternative locations for the transmission lines. Is that sufficient? Should the Department of Energy have considered reasonable alternatives related to the construction and operation of the power plants themselves, even if they are not within the jurisdiction of any U.S. agency? Plaintiffs argued that the Department of Energy could have granted the transmission permits on the condition that the project proponents implement state-of-the-art emissions control systems, mitigate emissions through offsets from existing sources, and use different cooling technologies. The court agreed:

[T]he agencies were obligated to set forth in the EA "the range of alternatives . . . sufficient to permit a reasoned choice." *Methow Valley Citizens Council*, 833 F.2d at 815. Although defendants argue that "international sensitivities" preclude conditioning the permits from being a reasonable and feasible alternative, such a discussion belongs in the EA's alternative analysis rather than a litigation brief. Furthermore, the Court is unconvinced that the federal government's conditioning of a permit to construct transmission lines within the government's jurisdiction to ameliorate negative environmental effects within the United States necessarily offends international principles of law. The condition would not be a direct regulation of the Mexican power plants; those plants could still choose to sell their power to the Mexican market or transmit their power via an alternate route rather than meet the condition.

Plaintiff bears the burden of showing that the agency was alerted to the specific alternative at issue before it prepared the EA in question. This requirement helps ensure that the alternative was not so remote and speculative as to have precluded the agencies from ascertaining the possibility. In the present case, commenters, including plaintiff, clearly proposed withholding the permits until the federal defendants could be certain that the power generation met certain environmental standards. Accordingly, the Court is hard-pressed to find that the proposed alternative could not be reasonably ascertained by the agencies during their deliberations. Because the Court finds that the conditioning of the permits is a reasonable and feasible alternative within the nature of the proposed actions, the Court finds that the analysis of alternatives in the EA was inadequate in this regard.

Border Power Plant Working Group, 260 F. Supp.2d at 1030–31. Do you agree that those alternatives are reasonable?

3. Mitigation Measures. An EIS must also include a discussion of mitigation measures. 40 C.F.R. § 1502.16. Mitigation includes avoiding the impact altogether, minimizing impacts by limiting the degree and magnitude of the action, rectifying the impact through rehabilitation or restoration, reducing or eliminating the impact over time by preservation and maintenance operations during the life of the project, and compensating for the impact by replacing or providing substitute resources or environments. *Id.* at § 1508.20. When making its final decision concerning a proposed project, an agency must “[s]tate whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not.” 40 C.F.R. § 1505.2(c). While courts have invalidated agencies’ discussions of mitigation as inadequate, *see* *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1381 (9th Cir. 1998), the Supreme Court has also stated that NEPA does not include “a substantive requirement that a complete mitigation plan be actually formulated and adopted[.]” *Robertson*, 490 U.S. at 352. What kind of mitigation measures could NHTSA have proposed when it adopted CAFE standards? In *Border Power Working Group*, what kind of measures could the Department of Energy have developed to mitigate the impacts of the transmission lines?

4. In your view, what are the benefits of discussing the climate change impacts of a proposed action in an EIS?

5. On February 28, 2008, the International Center for Technology Assessment (ICTA), Natural Resources Defense Council, and Sierra Club petitioned the CEQ to clarify that climate change analyses must be included in all federal environmental review documents. The groups specifically requested that CEQ (1) amend its NEPA regulations to include language clarifying that NEPA implementing regulations require discussion of climate change effects in NEPA compliance documents, including environmental assessments and environmental impact statements; and (2) issue a CEQ Guidance Memorandum that includes instructions to all federal agencies on how, where, and when to best integrate climate change analyses into their respective NEPA processes. *Petition Requesting that the Council on Environmental Quality Amend Its Regulations to Clarify that Climate Change Analyses Be Included in Environmental Review Documents* (Feb. 28, 2008).

In 2010, the CEQ issued a draft guidance document advising agencies “to consider . . . whether analysis of the direct and indirect GHG emissions from their proposed actions may provide meaningful information to decision makers and the public.” CEQ, *Memorandum for Heads of Federal Departments and Agencies, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions 1* (Feb. 10, 2010). The draft guidance also identifies categories of actions that would generally require discussion in NEPA analysis:

Specifically, if a proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO₂-equivalent GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision makers and the public.

For long-term actions that have annual direct emissions of less than 25,000 metric tons of CO₂-equivalent, CEQ encourages Federal agencies to consider whether the action's long-term emissions should receive similar analysis. CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs.

Id. at 1–2. It further stated that CEQ did not plan to apply the guidance to federal land and resource management actions. If you were one of the petitioners seeking CEQ guidance, would you be satisfied by the draft guidance?

6. Foreign Cases. Courts in other countries have also addressed the climate change impacts of development projects. In Australia, when a planning panel considered an amendment to a plan to extend the operation of a major coal-fired power station by 20 years, the Victorian Civil and Administrative Tribunal declared that the Victoria Planning and Environment Act 1987 (Vic) required the panel to consider submissions about the greenhouse gas implications of using brown coal. *Australian Conservation Foundation v Minister for Planning* [2004] VCAT 2029 (29 October 2004). *See also* *Gray v The Minister for Planning and Ors* [2006] NSWLEC 720 (the greenhouse gas impacts of burning coal must be taken into account in the environmental impact assessment of new coal mines). *But see* *Wildlife Preservation Society of Queensland Proserpine/Whitsunday Branch Inc v Minister for the Environment & Heritage & Ors* [2006] FCA 736 (15 June 2006) (finding that the discussion of the indirect effects of GHG emissions on Australian World Heritage properties resulting from two coal mines was adequate under the Australian Environmental Protection and Biodiversity Conservation Act of 1999).

In New Zealand, a Court of Appeal ruled that the Resource Management Act (RMA) did not require Genesis Energy, a State-owned enterprise wanting to build a gas-fired power plant, to consider the impact of greenhouse gases on climate change when the greenhouse gases come from non-renewable energy sources. *Genesis Power Limited v Greenpeace New Zealand Incorporated*, Court of Appeal [2007] NZCA 569 (*Genesis Power*), available at: <http://jdo.justice.govt.nz/jdo/Search.jsp>. The decision overruled a 2007 decision in *Greenpeace New Zealand v Northland Regional Council*, [2007] NZRMA 87 (the *Mighty River* case). *Genesis Power* involved an application for consent to build a gas-fired electricity generating plant. Under Section 104E of the RMA, the consent authority, when considering an application to discharge greenhouse gases, must *not* have regard to the effects of such a discharge on climate change, except to the extent that the use and development of renewable energy enables a reduction in the discharge into air of GHGs. The Environment Court in the *Mighty River* case concluded that Section 104E allowed the consent authority to consider the effects of climate change only in the context of applications to use or develop renewable energy that would enable a lowering of GHGs. The High Court overturned that decision, declaring:

If the application for a discharge permit . . . includes no proposal which . . . would enable a “reduction into air of greenhouse gases” by the “use and development of renewable energy” then that . . . is a factor the consent authority is

entitled to take into account in deciding whether to exercise its discretion and grant the resource consent.

* * *

[Section 104E] enables the consent authority to balance [the] proposed activity alongside any proposal by the applicant which would effect “reduction in the discharge into air of greenhouse gases” by an activity which involves the “use and development of renewable energy . . . relative to the use and development of non-renewable energy” and to that extent to have regard to climate change.

The court in *Genesis Power*, however, found that the *Mighty River* approach would impose substantial burdens on consenting authorities to identify alternatives using renewable energy and the significance of the project’s GHG emissions on climate change. The Court of Appeal thus concluded that Section 104E only requires a consenting authority to consider the effects of climate change in applications involving the use of renewable sources of energy production. *Genesis Power*, at para. 40. Moreover, it concluded that in applications involving non-renewable energy production, a consent authority is *not* required to:

- a. Compare the proposal advanced by the applicant with a hypothetical proposal using renewable sources.
- b. Treat the non-use of renewable sources of energy as a negative factor counting against the grant of consent.
- c. Assess the extent to which GHG emissions associated with the proposal would have an effect on climate change.

Id. at para. 41. Does this make sense?

7. Greenhouse Gas Emissions Reporting under Securities Laws. In 2010, the Securities and Exchange Commission (SEC) issued a guidance document regarding public companies’ duty to disclose issues related to climate change in their SEC findings. SEC, Commission Guidance Regarding Disclosure Related to Climate Change (Feb. 8, 2010). In essence, the guidance simply made it clear that a company has a duty to disclose information regarding how climate change may affect the business where that information is “material.” *See id.* at 12. Existing disclosure requirements, for example, require companies to disclose information pertaining to environmental laws where environmental compliance may affect a company’s capital expenditures (such as when a facility requires new pollution control equipment), earnings, and competitive position. *Id.* at 13. A company must also disclose its involvement as a party in actual or pending environmental litigation that is not “ordinary routine litigation incidental to the business.” *Id.* at 14. Finally, companies must disclose significant factors that make an investment speculative or risky. *Id.* at 15. Ultimately, a company’s duty to disclose climate change-related issues will depend on their materiality to the company’s financial operations and risk. The SEC has made it clear that companies have no bright-line obligation to disclose climate change risks as a matter of course. Should they?