ORAL ARGUMENT NOT YET SCHEDULED

No. 16-1186

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

SIERRA CLUB,

Petitioner,

v.

UNITED STATES DEPARTMENT OF ENERGY,

Respondent,

and,

AMERICAN PETROLEUM INSTITUTE, LLC, ET AL.,

Intervenors for Respondent.

On Petition for Review of Orders of the Department of Energy 3331-A (May 7, 2015) and 3331-B (April 18, 2016)

PROOF REPLY BRIEF OF PETITIONER SIERRA CLUB

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TABLE OF CONTENTS

TABLE OF AUTHORITIES

Cases

Statutes

Regulations

*Authorities chiefly relied upon are marked with an asterisk.

GLOSSARY OF ABBREVIATIONS

Pursuant to Circuit Rule 28(a)(3), the following is a glossary of acronyms and abbreviations used in this brief, and in the cited portions of the Joint Appendix:

2012 Export Study	U.S. Energy Information Administration, Effect of Increased Natural Gas Exports on Domestic Energy Markets (January 2012)
2014 Export Study	U.S. Energy Information Administration, Effect of Increased Levels of Liquefied Natural Gas Exports on U.S. Energy Markets (Oct. 29, 2014)
Addendum	U.S. Department of Energy, Final Addendum to Environmental Review Documents Concerning Exports of Natural Gas from the United States (Aug. 15, 2014)
Application	Dominion Cove Point LNG, LP, Application for Long-Term Authority to Export LNG to Non-Free Trade Agreement Countries, DOE/FE Dkt. 11-128-LNG (Oct. 3, 2011)
Authorization Order	U.S. Department of Energy, Order 3331-A, DOE/FE Dkt. 11-128-LNG, *Final Opinion and Order Granting Long-Term, Multi-Contractual Authorization to Export Liquefied Natural Gas by Vessel from the Cove Point Point LNG Terminal in Calvert County, Maryland, to Non-Free Trade Agreement Nations* (May 7, 2015)
bcf/d	billion cubic feet per day
bcf/y	billion cubic feet per year

Btu	British thermal units
CAMx	Comprehensive Air-quality Model with extensions
CEQ Greenhouse Gas Guidance	Council on Environmental Quality, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions (Aug. 1, 2016)
Climate Action Plan	Executive Office of the President, The President's Climate Action Plan (June 2013)
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
DOE	Department of Energy
DOE/FE	Department of Energy/Office of Fossil Energy
Domestic Life Cycle Report	National Energy Technology Laboratory, Life Cycle Analysis of Natural Gas Extraction and Power Generation (May 29, 2014)
EA	Environmental Assessment

EarthReports EA Comment	Chesapeake Climate Action Network , EarthReports, Inc. (dba Patuxent Riverkeeper); Potomac Riverkeeper, Inc.; Shenandoah Riverkeeper; Sierra Club; and Stewards of the Lower Susquehanna, Inc., Comments on Environmental Assessment for Dominion Cove Point LNG, LP, FERC Dkt. CP13-113-000 (June 16, 2014)
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FTA	free trade agreement
FERC	Federal Energy Regulatory Commission
Global Life Cycle Report	National Energy Tech. Lab., Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States (May 29, 2014)
GHG	greenhouse gas
GWP	global warming potential
JA	Joint Appendix
LCA GHG Report	National Energy Tech. Lab., Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States (May 29, 2014) (cited in this brief as "Global Life Cycle Report")

LNG	liquefied natural gas
MJ	megajoule
MMBtu	million British thermal units
MWh	megawatt hour
NEMS	National Energy Modeling System
NEPA	National Environmental Policy Act
NERA Study	National Economic Research Associates, Macroeconomic Impacts of LNG Exports from the United States (Dec. 3, 2012)
NETL	National Energy Technology Laboratory
NO_x	nitrogen oxides
P or PP	The internal paragraph number or numbers within a FERC order.
Rehearing Request	Sierra Club, Request for Rehearing, Dk. 11-128-LNG (June 8, 2015)
Rehearing Order	U.S. Department of Energy, Order 3331-B, DOE/FE Dkt. 11-128-LNG, *Opinion and Order Denying Request for Rehearing of Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Cove Point, LNG Terminal in Calvert County, Maryland to Non-Free Trade Agreement Nations* (Apr. 18, 2016)
Scf	standard cubic foot

Unconventional Production Report	National Energy Tech. Lab., *Environmental Impacts of Unconventional Natural Gas Development and Production* (May 29, 2014)
VOC	volatile organic chemicals

SUMMARY OF ARGUMENT

The Department of Energy found that its decision to allow the exports requested by Dominion would have "no significant" environmental effects. DOE, Finding of No Significant Impact for Cove Point Liquefaction Project (Finding) 3, JA___.[1] That finding has no support in the administrative record; indeed, DOE's analyses in the record reach precisely the opposite conclusion (Section I). The rationales offered by DOE for denying the significant impacts of its action are not sufficient. First, the agency contends that because the effects of its action are uncertain in their particulars, they are beyond NEPA's ambit. Answering Brief for Respondent ("Response") 36-37. But NEPA requires an agency confronted with significant yet uncertain effects to prepare an environmental impact statement investigating those effects—not dismiss them as non-existent (Section II.A); and the effects at issue here are entirely amenable to meaningful analysis (Section II.B). Second, the agency contends that its various environmental documents substitute for the statutorily required EIS. *E.g.,* Response

[1] This brief also employs the short forms introduced in the Opening Brief.

46. But those analyses do not meet the requirements established by NEPA, and neither NEPA's text nor fidelity to its purposes permits DOE to substitute its preferred documents for an EIS (Section III).

Finally, DOE has not satisfactorily explained how exports that will harm most Americans (by raising their electricity and heating bills), and benefit only a few gas-related interests, will be in the *public* interest under the Natural Gas Act. DOE's conclusory treatment of those distributional concerns, unsupported by any explanation or reasoning, provides no insight into why DOE made its decision (Section IV.A). And DOE's public interest finding rests on a comparison of two values—economic benefits and environmental harms—the latter of which DOE admits it has not identified. It is therefore arbitrary and capricious (Section IV.B).

ARGUMENT

I. THE DEPARTMENT'S "NO SIGNIFICANT IMPACT" FINDING LACKS A REASONABLE BASIS

The agency determined that its decision to authorize the exports requested by Dominion—even in combination with additional similar authorizations before the agency—would "not have a significant effect on the human environment," so that it was under no obligation to

prepare a full-fledged Environmental Impact Statement under NEPA. Finding 3, JA___. That conclusion has no reasonable foundation.

The record states, unequivocally and without contradiction, that the exports authorized here, along with other export proposals pending before or recently approved by DOE, would cause extensive changes in the production and use of natural gas in the United States. The export studies conducted by DOE's Environmental Information Administration concluded that "increased natural gas exports" lead to "increased natural gas production." 2012 Export Study 6, 10-11, JA___, ___-___, 2014 Export Study 12, JA___. Dominion's Application likewise states that "increased domestic production of natural gas" will be the "most basic benefit" of DOE's decision. Application 35, JA___ (authorization of exports will "spur the development of new natural gas resources that might not otherwise be developed"). The EIA's Export Studies also concluded that increased exports will cause a domestic shift from gas to coal, as some of the gas currently being used domestically is diverted to international consumers, and coal fills much of the resulting gap in the U.S. energy market. 2012 Export Study 11-12, JA___-___; 2014 Export Study 12, JA___.

The record further indicates that those changes in the production and use of natural gas will have significant impacts. The Department's Environmental Addendum confirms that export-driven increases in gas production will have substantial environmental effects: from increased greenhouse gas emissions, to contributions to ozone formation, to water pollution and habitat fragmentation. Addendum 10-18, 21-23, 28, 33-42 & 56-65, JA___-___, ___-___, ___, ___-___ & ___-___. Its Global Lifecycle Analysis concurs that allowing exports of liquefied natural gas will increase the United States' emissions of greenhouse gases (while also suggesting some beneficial climate-related effects abroad). Global Life Cycle Analysis 8-10, JA___-___. *Cf.* 40 C.F.R. § 1508.27(b)(1) (actions with "both beneficial and adverse" effects may "significantly" affect environment, "even if the [f]ederal agency believes that on balance the effect will be beneficial").

None of those analyses—nor any other analysis in the record—indicates that the Department's authorization of increased exports will have *no* significant impacts. Even in its brief, the Department acknowledges that its authorization of exports could "accelerate growth in domestic natural-gas production," and that the environmental effects

of such production "*could be significant*." Response 18, 30-31 (emphasis added). *See also id.* at 40 ("DOE did not deny the possibility and foreseeability of LNG exports in the amounts authorized or projected"). DOE could not plausibly suggest otherwise. The natural gas that will be exported has to come from somewhere—either additional extraction, or the gas currently being consumed in preference to other, often dirtier, fuels. An increase in demand cannot leave supply unaffected—especially an increase that, taken together with the other export proposals before DOE, is equal to nearly half of all natural gas currently produced in the United States. *See* Opening Brief of Petitioner Sierra Club ("Opening") 16.[2]

DOE found that its authorization of exports "will not have a significant effect on the human environment," Finding 3, JA___, even as it, and the export-applicant, repeatedly confirmed that the

[2] DOE's regulations confirm that its export authorizations generally pose significant effects. 10 C.F.R. Pt. 1021 Subpt. D App. D, D8-D9. Respondents argue that this encompasses only effects relating to activities at the terminal-site. Response 54. But the regulation does not speak in such narrow terms; it specifically refers to "a major increase in the quantity of liquefied natural gas imported or exported" itself as an "operational change" that requires an EIS, separately from "significant expansions and modifications of existing … facilities." 10 C.F.R. Pt. 1021 Subpt. D App. D, D8-D9.

authorization *will* result in significant effects. That finding is fundamentally arbitrary and capricious. "Agency action based on a factual premise that is flatly contradicted by the agency's own record does not constitute reasoned administrative decisionmaking, and cannot survive review under the arbitrary and capricious standard." *City of Kansas City v. Dep't of Hous. & Urban Dev.,* 923 F.2d 188, 194 (D.C. Cir. 1991).

NEPA does not require that agencies just "look" at environmental issues. *E.g.,* Response 46 ("DOE took a hard look at ozone impacts"). Where the agency's assessment reveals impacts that are significant, *see, e.g., id.* ("[E]missions from increased natural gas development might 'create new or expanded ozone non-attainment areas'"), it *must* prepare an environmental impact statement. 42 U.S.C. § 4332(C); *Sierra Club v. Peterson,* 717 F.2d 1409, 1412-13 (D.C. Cir. 1983). *See also Sierra Club v. Marsh,* 769 F.2d 868, 875-76 (1st Cir 1985) (then-Judge Breyer, refusing to accept "EAs as a *substitute* for an EIS"). It may not issue a "finding of no significant impact" that denies any connection between the agency's decision and significant environmental consequences, nor may it bypass NEPA's mandatory EIS-related requirements. By issuing

such a denial, and foregoing an EIS, DOE abrogated the clear statutory text. And it violated one of NEPA's core purposes: providing the public with a clear, honest understanding of the agency's decisions, to ensure that interested members may play a meaningful "role in … the decisionmaking process." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). *See* Section III.A, *below*.

Respondents offer two justifications for DOE's refusal to admit, in its decision-document, that its authorization may have significant impacts. First, they contend that the significant effects resulting from the Department's decision are uncertain, and thus cannot trigger NEPA's requirements. Response 34-37 & 52. *See also* Brief for Intervenor Dominion Cove Point LNG, LP ("Dominion Resp.") 14-24. As set forth in Section II, below, that contention is doubly incorrect; uncertain yet significant effects are not beyond NEPA's scope (indeed, they are a central concern of the statute's EIS-related provisions), and the record indicates that DOE overstates the degree of uncertainty present here as well as its inability to accommodate that uncertainty.

Second—in sharp contrast to their assertion that exports' environmental impacts are unknowable—respondents argue that

various extra-statutory documents prepared by the Department (its Addendum and Lifecycle Analyses) did in fact assess and disclose exports' environmental impacts, and that DOE has therefore satisfied NEPA. *E.g.,* Response 53. But as detailed in Section III, below, DOE's no-impact finding did not invoke those other analyses as its basis; further, those analyses do not meet NEPA's statutory criteria, and NEPA (like any other statute) does not allow an agency to substitute its own preferred methods for those specified in its text.

II. NEPA DOES NOT PERMIT AN AGENCY TO IGNORE SIGNIFICANT, UNCERTAIN IMPACTS

Respondents claim that under a "rule of reason," the otherwise significant effects of DOE's export-authorization are "not reasonably foreseeable," because they are "uncertain." *E.g.,* Response 36-37. According to the respondents such significant yet uncertain impacts cannot trigger DOE's NEPA obligations—here, to prepare an EIS. *Id. at* 34 (such effects cannot be "meaningfully forecast" and therefore need not be "evaluated under NEPA"). That claim contradicts both the law and the record.

A. Uncertain Events Are Not Categorically Insignificant

Respondents rely primarily on *Department of Public Transportation v. Public Citizen,* 541 U.S. 752 (2004), to justify DOE's dismissal of the effects of its decision on the production and use of natural gas. Response 34. *Public Citizen,* however, only permits an agency to exclude effects which it "has no ability to prevent" due to its "limited statutory authority over the relevant action." *Sierra Club v. FERC,* 827 F.3d 36, 47 (D.C. Cir. 2016) (citation omitted). That rule permitted FERC to avoid "the indirect effects of the anticipated *export* of natural gas," when permitting the construction and operation of the Cove Point liquefaction facilities. *EarthReports v. FERC,* 828 F.3d 949, 955 (D.C. Cir. 2016) (citation omitted). But this Court reached that result because the Department of Energy "alone *has the legal authority*" over exports. *Id.* at 956 (emphasis added, citation omitted). That clearly established "legal authority," *id.,* satisfies *Public Citizen*'s requirements.

The buck, in other words, stops with DOE. In an effort to avoid accepting that buck, the agency reads *Public Citizen* to permit an agency to exclude not only those effects over which it lacks legal authority, but also those which are "uncertain," Response at 37, or

where an agency believes that the statutorily specified analysis is too "burdensome and difficult" in relation to its benefits, *id.* at 35.[3]

Uncertainty is not, however, sufficient reason for an agency to ignore environmental impacts. On the contrary, NEPA's implementing regulations clearly establish that where the "possible effects on the human environment are highly uncertain or involve unique or unknown risks," such uncertainty cuts toward—not against—the preparation of an environmental impact statement. 40 C.F.R. § 1508.27(b)(5) (such uncertainty suggests that action "significantly" affects environment). *Cf.* Authorization Order 99, JA____ ("[A]pplications to export significant quantities of domestically produced LNG are a new phenomena with uncertain impacts.")

And NEPA's regulations provide specific instructions as to how an agency should address "incomplete or unavailable information" regarding "reasonably foreseeable significant adverse effects": by obtaining it, so long as the cost of doing so is not "exorbitant," or by carefully explaining "the relevance of the incomplete or unavailable

[3] DOE's interpretation of NEPA's text receives no deference. *Citizens Against Rails to Trails v. Surface Transp. Bd.*, 267 F.3d 1144, 1150 (D.C. Cir. 2001).

information," and using available "theoretical approaches or research methods." 40 C.F.R. § 1502.22. NEPA's point is, as those instructions confirm, to illuminate uncertain consequences—not to sweep them under the rug. *Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm'n,* 481 F.2d 1079, 1098 (D.C. Cir. 1973).

The respondents note that NEPA requires "a reasonably close causal relationship" between the environmental effects in question and the agency's action. Response 35 (citing *Public Citizen,* 541 U.S. at 767). But not *all* uncertainty is *causal* uncertainty—and here, the unknowns cited by the agency have nothing to do with causation. The agency cites only purported uncertainty as to the specifics of the environmental impacts that NEPA requires it to further examine: "where and to what extent ozone issues might arise," *e.g.,* or "where new domestic production wells will be located." *Id.* at 41, 46. *See also* Section III.B, *below*.

Those questions do not go to whether DOE's decision will lead to changes in the production and use of natural gas, or whether those changes will have significant environmental impacts. Indeed, DOE's brief admits: that "DOE did not deny the … foreseeability of LNG

exports in the amounts authorized or projected," *id.* at 40; that "the Cove Point authorization, cumulatively with other LNG export authorizations, might induce additional natural gas production," *id.* at 36; and, that such production would have significant environmental impacts, *e.g., id.* at 46 (noting possible "new or expanded ozone non-attainment areas").

The agency's brief characterizes those effects as "attenuated," Response 35; but, as it also admits, *id.,* NEPA's scope includes indirect effects that are similarly "later in time or farther removed in distance," such as "induced changes in the pattern of land use," and other "growth inducing" and "economic" effects, so long as those effects are "reasonably foreseeable." 40 C.F.R. § 1508.8(b). Here, the indirect effects of the Department's decision are not only foreseeable—they were foreseen by the analyses within the agency's administrative record. *See, e.g.,* 2012 Export Study 10-11, JA___-___.

The agency claims that the statutorily required environmental evaluation would be "burdensome and difficult," and that the results of such an evaluation would (in its opinion) not be "useful." Response at 35-36. But that is a quarrel with the statute itself. NEPA requires

preparation of a detailed impact statement for any "major Federal action[] significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). It provides no exception where an agency believes that preparing the statutory statement will be too burdensome to be worthwhile. *Calvert Cliffs Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n,* 449 F.2d 1109, 1121-22 (D.C. Cir. 1971) (agency's "pragmatic" concerns do not trump NEPA's mandate). Rather, the statute enacts Congress' judgment that detailed, decision-specific analysis is indispensable to reasoned agency decision-making, and worth the time and effort. *See Robertson v. Methow Valley Citizens Council,* 490 U.S. 332, 350 (1989) ("[B]y focusing the agency's attention on the environmental consequences of a proposed project, NEPA ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast.").

The agency's aversion to 'burdensome' analyses has the perverse effect of eliminating NEPA compliance for its most transformative decisions, and where it is least aware of those decisions' environmental ramifications. Response 35-36. The largest impacts of DOE's export-

authorizations are their indirect effects; expanding demand for United States' natural gas supplies by billions of cubic feet per year has vastly greater consequences than those associated with the construction and operation of coastal LNG terminals. Those effects are "essential" to the agency's decision whether to approve exports under the Natural Gas Act, 40 C.F.R. §1502.22(a). *See* 15 U.S.C. § 717b(a) (requiring DOE to decide whether export will be "consistent with the public interest"). *See also* Section III.B, below. The agency's decision to dismiss them as "insignificant" under NEPA, merely because it believes their specifics to be uncertain, was unlawful.

B. The Record Demonstrates That the Indirect Effects of Export Authorizations Can Be Meaningfully Analyzed

The record demonstrates that the indirect effects of DOE's decision—increased production of natural gas, a shift to other fuels by current U.S. consumers of natural gas, and increased greenhouse gas emissions—can be meaningfully assessed, without any excessive burden. *See* Opening 36-59.

1. The Agency Has Demonstrated Its Ability to Forecast the Effects of Increased Natural Gas Production

Respondents assert three broad areas of uncertainty which, they claim, prevent any practicable examination of the relationship between DOE's export-authorization and the production of natural gas: (a) uncertainty as to the quantity of LNG that will be exported following DOE's authorizations, Response 41; (b) uncertainty as to the location of natural gas production resulting from the authorizations, Response 43-45; and (c) uncertainty as to the actions of other state and federal agencies who have the ability to regulate some of the likely effects of natural gas production, Response 47. But the record demonstrates that the agency can (and has) made meaningful predictions as to each of those areas, with sufficient specificity to usefully assess its decision's foreseeable environmental consequences.

(a) DOE can foresee potential export quantities with at least enough accuracy to enable meaningful analysis under NEPA. DOE must consider *both* the exports authorized at Cove Point, and those resulting from "additional applications for similar export authority from other export terminals," Response 39-40, and it has the tools to do so. At a minimum, the agency knows the quantity of exports that DOE has actually approved. An evaluation of the effects of that approved

quantity would hardly be so "speculative" as to be meaningless, Response 42; on the contrary, it would be a straightforward disclosure of the effects of the actions that the agency is allowing to occur. *See City of Davis v. Coleman,* 521 F.2d 661, 677 (9th Cir. 1975).

And even if the Department believes that some lesser quantity of exports might occur than those it has authorized—that provides no excuse for DOE's assertion that its decision will result in no production-related effects *at all*, Finding 3, JA___. DOE has already determined that cumulative export volumes ranging from 6 to 20 billion cubic feet per day (2,190 to 7,300 bcf/y) are sufficiently possible to warrant detailed economic analysis. 2012 Export Study App A, JA___; 2014 Export Study App. A, JA___. Moreover, DOE has the ability to forecast likely exports under a variety of market conditions, Annual Energy Outlook 2015 ES-4, JA___ (predicting volumes of exports likely to occur in four different economic cases), and DOE has specifically endorsed EIA's prediction that exports are *likely* to reach 3,500 bcf/y, Addendum 43, JA___. Dominion's Application demonstrates, furthermore, the feasibility of estimating the incremental effect of this specific authorization. *Cf.* Application App. B at 5, JA___ (modeling domestic

energy market response to, *inter alia*, "aggregate" export cases with and without Cove Point). The record thus demonstrates that DOE is capable of estimating the quantity of exports that are "reasonably foreseeable," both cumulatively and from this decision, sufficiently to enable NEPA review. *EarthReports*, 828 F.3d at 955.

(b) Respondents claim that the non-climate-related effects of DOE's decision require local information that is beyond the agency's ability to predict (respondents do not suggest that this prevents analysis of climate-related impacts). Response 43-44.[4] The agency does not dispute

[4] Sierra Club's Opening Brief was not meant to suggest that DOE failed to address impacts in the vicinity of the terminal, *cf.* Response 47-48 (discussing effects "local" to the facility), but rather that DOE had ignored as insignificant any effects whose precise "location … cannot be foreseen." Opening 54.

that its EA, Dominion's customer contracts,[5] and geography all indicate that the exports authorized "will come from the Marcellus Shale"—a single natural gas formation. Response 43. DOE contends that what matters is how the broader energy market will respond to Dominion's exports, rather than where the actual gas exported from Cove Point will come from, Response 39-40, and DOE has tools designed precisely to predict this response: namely, EIA's National Energy Modeling System. EIA already uses that System to predict how gas production in the Marcellus Shale, in particular, will change in response to various potential scenarios. *See* Annual Energy Outlook 2014 MT-21, MT-25, JA___, ___.

[5] Dominion asserts that Sierra Club's rehearing petition "did not argue that the location of Cove Point Terminal gas was known." Dominion Resp. 17. Sierra Club's rehearing request did, however, argue that DOE was obligated to identify, and capable of identifying, the likely gas sources for the authorized exports. Rehearing Request 9-11, JA___-___. Sierra Club's comments on the EA noted Dominion's contracts as one means of such identification. EarthReports EA Comment 30-40, JA___-___. Under those circumstances, DOE could not—and does not—argue that it lacked notice of Sierra Club's claim at the rehearing stage. To point out that DOE's response to that claim is unsupported by the record, Sierra Club need not have also recited to the agency the contents of its own record. *See Louisiana Intrastate Gas Corp. v. FERC,* 962 F.2d 37, 41-2 (D.C. Cir. 1992) (Act requires only "notice of the ground on which rehearing was being sought" (citation omitted)).

To provide a meaningful NEPA analysis, the agency need only make such regional, "play-level" forecasts—to conclude, for example (and as the record indicates), that authorizing Dominion's requested exports, together with the other approved exports, will likely lead to increased production from the Marcellus Shale. The agency contends that the Marcellus Shale is "vast," and that it cannot know "where in the region" production might occur. Response 43. But it offers nothing, beyond its say-so, to suggest that this precludes meaningful environmental analysis. DOE simply asserts infeasibility, while disregarding the various models and predictive tools within its own administrative record. *See, e.g.,* Addendum 28-29, JA___-___ (discussing independent and agency studies of environmental impacts of increased natural gas production).[6]

For example, DOE concedes the existence of "a common model to assess [ozone] impacts" at a region-wide level. Response 46. The only reason it offers for refusing to utilize that model is the asserted absence of a "presumed increase in natural-gas production in a particular

[6] DOE's assertions of infeasibility or unreasonable costs are supported by no estimate or other record evidence.

geographic region." *Id.* But DOE never explains—in its decision document, or even its brief—why those *regional* increases are unknowable; it asserts only that it cannot attribute production "at the wellhead or local level." *Id.* at 44. Similarly, DOE acknowledges in its brief that regional, "play-level data" is sufficient to address "impacts on water usage." Response 45.[7]

(c) Finally, respondents point to "local, state, and federal authorities" with some regulatory authority over the environmental impacts of natural gas production, and argue that this authority renders "projections about export-induced natural gas production highly uncertain." Response 47. But such overlapping regulatory authority is the rule, not the exception. For virtually any agency action, there is some other entity with some ability to affect the magnitude of environmental impacts that could result from the action. That does not render analysis meaningless, nor can it be adequate reason to ignore otherwise significant and foreseeable impacts. Indeed, NEPA expressly

[7] DOE's Addendum notes that gas production in the Marcellus Shale has different water-related effects than gas production in the Eagle Ford Shale, Addendum at 11, JA___. But it fails to disclose where production will increase in response to DOE's decision. This is one reason why, while the Addendum reveals significant effects, it does not of itself satisfy NEPA. *See* Section III.B, *below*.

includes within its scope actions over which, for example, a "State agency," rather than the federal action-agency, has "jurisdiction and … responsibility." 42 U.S.C. § 4332(D). That inclusion belies any suggestion that effects over which other bodies have some regulatory authority are too uncertain for NEPA analysis.

Materials in the record document DOE's ability to project the likely ramifications of other agencies' regulations. DOE's Addendum, for example, accommodates the implementation of various state and federal air- and water-pollution laws, including those that may occur in the future. Addendum 13, 15-16, 21-22, 37, 42-44, JA___, ___-___, ___-___, ___, ___-___.[8] Its price-related forecasts, similarly, "capture" the impact of possible state or other authorities' actions affecting the price or amount of natural gas extraction in the "high" and "low" recovery

[8] Dominion claims that the Addendum establishes that, because of these regulations, "water impacts would be minimal." Dominion Resp. 31. That claim is in some tension with DOE's assertion that the effect of such regulations is unknowable. DOE, at any rate, never asserted that state and local regulation would reduce water impacts to insignificance; on the contrary, the Addendum notes a variety of significant impacts. *See, e.g.,* Addendum 19, JA___ (noting that "water demand … will increase," and that "[t]his balance may become more critical during seasonal or prolonged drought conditions.").

scenarios. DOE Order 3331 at 111, JA___ (discussing scenarios based on quantity of gas recovered per well).

In short, respondents have provided no evidence to support their various claims of predictive incapacity. On the contrary, DOE has, in the record, demonstrated an ability to reasonably forecast the quantities of natural gas that will result from its export authorizations, the likely regional distribution of increased gas production, and the regulatory regime governing such production. The agency has therefore not carried its burden of "mak[ing] a convincing case for its finding" of no significant impact. *Grand Canyon Trust v. FAA,* 290 F.3d 339, 340-41 (D.C. Cir. 2002) (citation omitted).

2. The Agency Has the Ability to Forecast the Extent and Effects of Increased Coal Use

The agency's 2012 and 2014 Export Studies each concluded that the increased demand resulting from DOE's export-authorizations will increase gas prices, and thereby cause an increase in the use of coal as a substitute. 2014 Export Study 18, JA___; 2012 Export Study 6, JA___. And the agency's analyses describe at least some significant impacts

that follow from such increased coal use. 2012 Export Study 18, JA___.[9] The record contains no analysis that contradicts those conclusions.

DOE contends that the effects of its decision on coal—a potential substitute for natural gas—is "attenuated," and therefore too uncertain to warrant recognition under NEPA.[10] Response 48-49. *See also* Dominion Resp. 24-25 (arguing that analysis of effects on "*substitutes*" for natural gas is beyond "rule of reason"). But NEPA's implementing regulations expressly require inclusion of such second-order effects; "indirect effects" include "induced changes in the pattern of land use, population density, or growth rate," despite the fact that such effects (like the effects of increased demand for one fuel on consumption of that fuel's primary alternative) are "later in time or farther removed in distance"—in other words, attenuated. 40 C.F.R. § 1508.8(b).

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[9] DOE's analysis noted, for example, the increased greenhouse gas emissions that will result from gas-to-coal switching. 2012 Export Study 18-19, JA___-___. The agency refused to address other environmental effects, such non-greenhouse-gas pollution.

[10] Although DOE's Rehearing Order suggested that EPA's greenhouse-gas regulations called the EIA Study's conclusions into question, Rehearing Order 26, JA___, DOE's brief confirms that the "EIA studies model and disclose CO2 emissions" that will result from coal-switching, and denies any "deficiency in the [Study's] modeling of CO2 emissions from coal." Response 49-50.

And the agency's assertion that substitution-related effects are too uncertain to be projected is belied by its own Orders, whose conclusions regarding price effects specifically rely upon EIA's forecasts as to the extent to which exports will affect coal use in the United States. *See* Authorization Order 97, JA___, DOE Order 3331 138-40, JA___-___. Dominion claims that DOE may adopt one analysis from the EIA Study without adopting another. Dominion Resp. 26. But that is not what occurred here. The EIA Study's price-related conclusions and its conclusions regarding coal-switching result from the *same* analysis—EIA's price forecasts depend upon its prediction of the extent that consumers will substitute coal for natural gas, and thereby moderate the effect of increased demand on gas prices. *See* 2014 Export Study 14-15, JA___-___ (generally predicting higher gas price increases when gas-to-coal shifting is limited). *See also* 2012 Export Study 12, JA___ (noting relationship between "use of coal" and price analyses). DOE cannot rely on that judgment to support its decision, while insisting that it is unreliable insofar as it might call its decision into question. *Scientists' Inst. for Pub. Info.,* 481 F.2d at 1097.

3. *DOE Can Forecast Climate-Related Effects of Increasing Natural Gas Exports*

Increased exports will have significant adverse climate-related effects. The natural gas production and transport necessitated by such exports will increase methane emissions—a major contributor to climate change. Domestic Life Cycle Report 34, JA___. Domestic consumers who switch from natural gas to coal in response to increased natural gas prices will also emit additional carbon dioxide—the most ubiquitous greenhouse gas pollutant. *Id.* at 47, JA___. And the tanker-transport, regasification, and combustion of LNG by importing countries will produce further greenhouse gas emissions. *See* Opening Brief 59.

The agency does not suggest that those climate-related effects, alone or cumulatively with DOE's other similar authorizations, are beyond the agency's ability to meaningfully forecast. *See,* Response 51-52. *See also, e.g.,* Domestic Life Cycle Report 5, 47, JA___, ___ (modeling greenhouse gas emissions). DOE says only that the agency's Environmental Assessment "disclose[d] substantial information." Response 50. None of that information addressed indirect impacts on gas production and coal use. And whatever 'information' the

Assessment included as to exports' significant climate-related effects, mere disclosure does not justify DOE's characterization of those effects as *in*significant, or its refusal to prepare an EIS. Where an agency's assessment reveals significant effects, NEPA requires an EIS. 42 U.S.C. § 4332(A). The only rationale offered by DOE for its failure to follow that rule is its claim that its non-NEPA documents—the Life Cycle Analyses—provided a "hard look" at climate impacts. Response 50-51. *But see* Section III, *below*.

III. THE AGENCY'S NON-NEPA ANALYSIS CANNOT SUBSTITUTE FOR COMPLIANCE WITH THE STATUTE

The respondent agency devotes much of its brief to arguing that its Environmental Addendum, Life Cycle Analyses and EIA studies took a "hard look" at the significant impacts of its decision, and that this suffices to satisfy NEPA. *E.g.,* Response 46 ("[T]he studies and other analysis in the Addendum show that DOE took a hard look at ozone impacts"), 48-49 ("DOE took a hard look at potential impacts from induced coal consumption"), 50 (Addendum "details the nature" of methane emissions"), 51 (Life Cycle Analyses accounted for "greenhouse-gas emissions from LNG production"). Although DOE's brief argues that those non-NEPA documents provide a basis for DOE's

no-impact Finding, the Finding itself squarely refutes this claim: it states that "[a]ll discussions and analyses" of relevant impacts "are contained within the EA." Finding 3, JA___. The agency cannot now make those external documents the rationale for its decision. *N. Air Cargo v. U.S. Postal Serv.*, 674 F.3d 852, 860 (D.C. Cir. 2012). But even if it could, NEPA does not allow the agency to forego an EIS.

A. DOE's Analyses Satisfy Neither NEPA's Text Nor Its Central Purposes

DOE's extra-statutory analyses cannot substitute for the environmental impact statement required by NEPA. The statutory text establishes a clear, action-forcing requirement: "all agencies of the Federal Government *shall* … include in … major Federal actions significantly affecting the quality of the human environment, a detailed [environmental impact] statement." 42 U.S.C. § 4332(C) (emphasis added). Consequently, "an agency's duties to issue a statement … are not inherently flexible or discretionary." *Scientists' Inst. for Pub. Info.*, 481 F.2d at 1091 (also noting limited flexibility in content of analysis). *See* 40 C.F.R. §§ 1500.6 ("[E]ach agency … shall comply with [section 4332] unless existing law applicable to the agency's operations expressly prohibits or makes compliance impossible"), 1507.2(c)

(requiring agencies to "[p]repare adequate environmental impacts statements pursuant to section [4332(C)]"). DOE has no authority to bypass an EIS in favor of what it believes to be a sufficient 'look' at effects.

DOE's failure goes beyond neglecting to label its materials an EIS, or a technical omission of the sort that this Court has condoned as harmless.[11] *See, e.g., Nevada v. Dep't of Energy,* 457 F.3d 78, 90-91 (D.C. Cir. 2006) (finding error harmless where agency acknowledged that action would have significant impacts, prepared full EIS, but disclosed preferred alternative in separate document). Its various assessments and studies fail to meet the core substantive criteria required by NEPA. The agency's proffered analyses do not assess "alternatives to the proposed action," 42 U.S.C. § 4332(C)(iii)—the "heart" of the statutory EIS, 40 C.F.R. § 1502.14. They do not address the cumulative volume of exports that would result from the numerous applications approved or pending before the agency. *See* Authorization Order 83, JA___ (Addendum does not "attempt to identify or characterize the

[11] Nor has the agency adopted procedures to ensure compliance at a later stage of the decision-making process. *See Illinois Commerce Comm'n v. ICC*, 848 F.2d 1246, 1257 (D.C. Cir. 1988).

incremental environmental impacts that would result from LNG exports"). And they do not even mention the agency's action: authorization of Dominion's requested exports. The Addendum and Life Cycle Reports are, in short, completely untethered from the actual decision before the agency. *See* Opening 71-74.

That refusal to connect DOE's action with its environmental consequences abandons NEPA's central goal: "to assure consideration of the environmental impact of their actions in *decisionmaking*." *Kleppe v. Sierra Club*, 427 U.S. 390, 409 (1976) (quoting Conference Report on NEPA, 115 Cong. Rec. 40416 (1969)) (emphasis added). The agency's discussion of environmental impacts is, by its terms, wholly divorced from its decision—most evidently by the finding that DOE's decision will have "no significant" environmental effects whatsoever. Finding 3, JA___.

By thus disconnecting its discussion of environmental effects from its decision, DOE precluded any possibility that it might include "the needs of environmental quality" within the decision-making process. *Robertson v. Methow Valley Citizens Council,* 490 U.S. at 349 (citation omitted). Furthermore, DOE's environmental documents diverge from

an EIS at precisely those points by which an EIS connects environmental concerns to the decision-making process. *See, e.g.,* 40 C.F.R. § 1502.14 (requiring "alternatives in comparative form" to "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decisionmaker and the public").

DOE's obfuscation of the connection between its decision and its environmental effects also betrayed NEPA's "larger informational role." *Robertson,* 490 U.S. at 349-50. By claiming that its action would have no significant consequences, the agency denied members of the public who might be concerned about those consequences an opportunity to bring such concerns to bear within this decision-making process. *See id.* (NEPA "provides a springboard for public comment"). Knowledge of environmental consequences is minimally useful, absent some knowledge of *which* government decisions produce those consequences. By foregoing the decision-specific elements of an EIS—especially the discussion of alternatives—DOE further deprived the public of any understanding of how those consequences may be reduced or avoided.

Dominion directs Sierra Club's attention to the "substantive policymaking" process, Dominion Resp. 2.[12] But that process cannot function where the agency refuses to candidly acknowledge what its decision might mean—which is why NEPA demands not just "excellent paperwork," but "decisions that are based on understanding of [their] environmental consequences." 40 C.F.R. § 1500.1. *See also Calvert Cliffs' Coordinating Comm., Inc. v. U. S. Atomic Energy Comm'n*, 449 F.2d 1109, 1117 (D.C. Cir. 1971) ("NEPA was meant to do more than regulate the flow of papers in the federal bureaucracy"). Such decisions require, at a minimum, that an agency admit that its action *has* significant environmental consequences, and that it follows the analytic

[12] American Petroleum Institute (API) adds various disparaging characterizations of the Sierra Club's motives. *See, e.g.,* API Brief 1-2, 11 ("Sierra Club ultimately has no interest in … meaningful or useful analysis."). *Cf.* API's Motion to File a Short, Standalone Intervenor Brief Separate From a Full Length Intervenor Brief (Nov. 21, 2016) (Doc. #1647258) 3 (seeking to exceed word limits to present unique perspective of "a large number of upstream energy producers"). True, Sierra Club opposes increased natural gas extraction, because of its severe and irreversible environmental impacts. But that is hardly inconsistent with seeking full disclosure of exports' role in increasing such extraction and its impacts, so as to allow for an informed public (and administrative) debate as to the merits of allowing such exports.

steps prescribed by Congress to clarify the precise contours of a proposed decision and its impacts.[13]

B. DOE's Non-NEPA Analyses Do Not Undertake a Sufficient Examination of Impacts

Even setting aside their failure to connect the agency's decision with its environmental consequences, DOE's non-NEPA analyses did not provide an accurate assessment of the environmental impacts of LNG exports. As to climate impacts, DOE's Global Life Cycle Analysis compares exported LNG's greenhouse gas emissions with those of foreign coal and natural gas. But the countries to which LNG will be exported do not rely solely upon coal and natural gas; they also use renewables, such as solar and wind-power, and deploy conservation measures to moderate their demand for electricity. *See* Opening 60-61. DOE asserts, in its brief, that "[i]t is not … 'valid to assume that natural gas would compete directly with renewables'" in LNG-importing nations. Response 51 (citation omitted). But its Authorization Order

[13] API vividly demonstrates the manner in which DOE's analysis obscures the agency's responsibilities. API suggests that LNG "exports from Cove Point" are straightforwardly caused by "increased natural gas production"—as if DOE played no role whatsoever even in permitting exports, let alone their effects. API Brief 5 (claiming "arrow of causation" connects gas production to exports).

concedes that the opposite assumption is equally untenable: "regional coal and imported natural gas are not the *only* fuels with which U.S.-exported LNG would compete." Authorization Order 92-93, JA___-___. Yet the Global Life Cycle Analysis assesses only the effects of displacing those fuels; for that reason, it fails to provide a sufficient assessment of the likely effects of LNG exports.[14]

And as to non-climate impacts, the generalities offered by the Addendum fail to provide information sufficient to understand the environmental effects of DOE's decision. DOE's Addendum, for example, notes that some significant ozone and water-related impacts may occur, but fails to explain where those impacts will occur or what their regional impacts might be—analysis that is well within the agency's capacity. *See* Opening 46-55. *See also, e.g.,* n.8, *above*. The agency has made no showing of infeasibility, or that that the cost of regional analysis would be "exorbitant." 40 C.F.R. § 1502.22(a). Absent

[14] DOE need not precisely model "electricity generation … in every LNG-importing nation." Dominion Resp. 3. But here, it refused to even prepare a side-by-side comparison of effects between exported LNG and foreign renewables. Even that minimal disclosure would highlight distinctions meaningful to DOE's decision, *e.g.,* that the decision to export LNG results in greater greenhouse gas emissions overall if the exported gas displaces even a small quantity of renewables.

that information, its analysis fails to provide meaningful insight into the air- and water-quality impacts of its decision.

IV. THE AGENCY'S "PUBLIC INTEREST" DETERMINATION WAS UNREASONABLE

A. The Agency's Conclusory Treatment of Distributional Effects Is Not Sufficient

The agency's record demonstrates that DOE's decision to authorize exports will, in purely economic terms, harm most members of the American public by raising their gas and electricity prices, as well as causing a net job loss. 2012 Export Study 6, JA___. *See* Opening 75-76. *See also* Rehearing Request 22-23, JA___-___ (clearly raising issue). *Cf.* Response 55-56 ("Sierra Club never … raised the question of inequality"). The benefits, on the other hand, will primarily accrue only to natural gas companies and their shareholders. DOE does not dispute that these distributional consequences are relevant to its public interest determination. Response 56. It argues that by stating that it did not "see sufficiently compelling evidence" of distributional concerns, it sufficiently addressed the issue. *Id.* at 56-57 (citation omitted).

But that conclusory statement could only suffice if premised upon some analysis and explanation. "[A]n agency must explain 'why it chose

to do what it did"; merely "conclusory statements will not do." *Amerijet Int'l, Inc. v. Pistole*, 753 F.3d 1343, 1350 (D.C. Cir. 2014) (citations omitted). Rather, "an 'agency's statement must be one of *reasoning*.'" *Id.* (citation omitted). Here, the agency offered "not a statement of reasoning, but of conclusion." *Id.* at 1350-51 (citation omitted). DOE undertook no discussion of the evidence in the record, nor any explanation as to why enriching a small subset of companies and investors would justify inflicting harm upon the majority of the public. The words 'sufficiently' and 'compelling', by themselves, provide no insight into how the agency weighed the evidence, or understood and applied its statutory obligation to protect the public interest. *See Tourus Records v. Drug Enf't Admin.,* 259 F.3d 731, 737 (D.C. Cir. 2001) (agency may not say that request "is not adequately supported" without "explain[ing] 'why' the [agency] regard[s] [claim] as unsupported" (citations omitted)). As this Court has held, an agency "must say more" to survive arbitrary and capricious review. *Amerijet Int'l,* 753 F.3d at 1350-52 (agency statement that certain requested exclusions are "not in the best interest of safety and the public interest … and do not provide

the level of security required" is "arbitrary because it says nothing about 'why' [the agency] made the determination" (citation omitted)).

B. The Agency's Comparative Analysis is Arbitrary and Capricious

DOE explained its conclusion that the environmental harms of its decision were outweighed by the authorization's economic benefits as follows: a denial of Dominion's application would forego the "entire[ty]" of the "economic and international benefits," while preventing only an "increment[]" of the environmental harms. Authorization Order 87, JA___. But whether an "incremental" portion of the harms is less than the "entire[ty]" of the benefits depends entirely on the magnitude of the harms. If the harms are large enough, a small portion of them may well outweigh the whole of any given benefit. DOE's rationale, consequently, can only be upheld if the agency has made some estimate of the magnitude of its action's environmental harms—something it refused to do here. *See* Authorization Order 83, JA___ (refusing to "identify or characterize the incremental environmental impacts" of exports). That estimate need not precisely quantify or monetize the harms, or take the form of a formal cost-benefit analysis. *See* Response 57-59. But having rested its decision on a comparative rationale, DOE was obligated to

offer some measurement sufficient to understand the agency's comparison—and it did not.

CONCLUSION

Sierra Club respectfully requests that DOE's decision be vacated and remanded.

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CERTIFICATE OF COMPLIANCE WITH WORD LIMITATION

Counsel hereby certifies that, in accordance with Federal Rule of Appellate Procedure 32(a)(7)(C), the foregoing Proof Reply Brief of Petitioner Sierra Club contains 6,971 words, as counted by counsel's Microsoft Word processing program.

Dated: January 31, 2017.

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CERTIFICATE OF SERVICE

I hereby certify that on this 31st day of January, 2017, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system, which will send notice of such filing to all registered CM/ECF users.

/s/ Nathan Matthews
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