

ORAL ARGUMENT NOT YET SCHEDULED

No. 16-1252

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

SIERRA CLUB,

Petitioner,

v.

UNITED STATES DEPARTMENT OF ENERGY,

Respondent,

AMERICAN PETROLEUM INSTITUTE, LLC, ET AL.,

Intervenors for Respondent.

On Petition for Review of Orders of the Department of Energy 3669
(June 26, 2015) and 3669-A (May 26, 2016)

PROOF REPLY BRIEF OF PETITIONER SIERRA CLUB

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*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. For the convenience of the Court, this glossary also includes acronyms and abbreviations used in the cited portions of the Joint Appendix but not appearing in this brief:

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)
Authorization Order	U.S. Department of Energy, Order 3669, DOE/FE Dkt. 13-30-LNG, 13-42-LNG, 13-121-LNG (consolidated), <i>Final Opinion and Order Granting Long-Term, Multi-Contractual Authorization to Export Liquefied Natural Gas by Vessel from the Sabine Pass LNG Terminal in Cameron Parish, Louisiana, to Non-Free Trade Agreement Nations</i> (June 26, 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
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, DOE/FE Dkt. 13-30-LNG, 13-42-LNG, 13-121-LNG (consolidated) (May 5, 2015)
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Scf	standard cubic foot
Unconventional Production Report	National Energy Tech. Lab., <i>Environmental Impacts of Unconventional Natural Gas Development and Production</i> (May 29, 2014)
VOC	volatile organic chemicals

STATUTES AND REGULATIONS

Except for those in the Addendum, applicable statutes and regulations are contained in the Briefs for the Petitioner, the Respondent and Respondent-Intervenors Sabine Pass Liquefaction, LLC and American Petroleum Institute.

SUMMARY

The Department of Energy found that its decision to allow the exports requested by Cheniere would have “no significant” environmental effects. DOE, Finding of No Significant Impact for Sabine Pass 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 entirely beyond NEPA’s ambit. Answering Brief for Respondent (“Response”) 36-37, 53. 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 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 54. But those analyses do not meet NEPA’s core requirements, and neither NEPA’s

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

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 Cheniere—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 indicates, without meaningful 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 Energy 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____. Cheniere's Application likewise stated that DOE's decision would "encourage additional domestic natural gas development," and spur "investments in natural gas production and infrastructure." Supplement to Applications of Sabine Pass Liquefaction at 10, 14 (Feb. 28, 2014), JA____, _____. 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: increased greenhouse gas emissions, additional ozone formation, 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 Report 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 "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 39 (“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 authorization *will* result in significant effects. That finding—“based on a factual premise that is flatly contradicted by the agency’s own

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. While DOE argues that these regulations encompass only effects from activities at the terminal-site, Response 55, they do not speak in such narrow terms. 10 C.F.R. Pt. 1021 Subpt. D App. D, D8-D9 (specifically including “major increase in the quantity of liquefied natural gas imported or exported” as an “operational change” requiring EIS, separately from “significant expansions and modifications” of facilities.

record”— is fundamentally arbitrary and capricious. *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 45 (“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 “EA[]s as a *substitute* for an EIS”). DOE instead issued a “finding of no significant impact” that denies any connection between the agency’s decision and significant environmental consequences, and bypassed NEPA’s mandatory EIS-related requirements. DOE thereby abrogated the clear statutory text, and violated NEPA’s central purpose of providing the public with a clear, honest understanding of the agency’s decisions. *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). *See also* 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 are entirely outside NEPA's ambit. Response 34-37 *See also* Brief for Intervenor-Respondent Sabine Pass Liquefaction, LLP ("Cheniere 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 54. 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 35-36.

According to the respondents such significant yet uncertain impacts cannot trigger DOE’s NEPA obligations—here, to prepare an EIS. *Id.* at 33 (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 33-34. *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 36, or where an agency believes that the statutorily specified analysis is too “difficult” in relation to its “useful[ness].” *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

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).

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 212, 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 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 agency acknowledges, in fact, that “uncertainty does not excuse an agency’s NEPA obligations,” asserting that it invoked uncertainty only to justify a “qualitative” environmental analysis. Response 41. But

the Agency here has not just limited itself to a purportedly qualitative analysis. *Id.* It has made a substantive determination that its decision has no significant environmental impact, Finding 3, JA____, and on that basis refused to prepare an environmental impact statement. Uncertainty does not excuse that decision.

The respondents note that NEPA requires “a reasonably close causal relationship” between the environmental effects in question and the agency’s action. Response 34-35 (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, 45. *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 39; that “the Sabine Pass authorization, cumulatively with other LNG export authorizations, might induce additional domestic natural gas production,” *id.* at 36; and, that such production would have significant environmental impacts, *e.g.*, *id.* at 45 (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.* at 34., 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 “difficult,” and claims the authority to limit the “type and extent” of its NEPA analysis according to its opinion of what will be “useful” to its decision. Response 34-35. But whatever authority

the Department may possess over the type and extent of its analysis, the statute does not allow an agency to forego an EIS for an action with significant environmental effects. 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 the statutory statement will not be sufficiently useful. *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, NEPA enacts Congress’ judgment that detailed, decision-specific analysis is not just useful, but indispensable to reasoned agency decision-making. *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (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 ‘difficult’ 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 34-35. 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 37, 40; (b) uncertainty as to the location of natural gas production resulting from the authorizations, Response 37, 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 46. 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 Sabine Pass, and those resulting from "additional applications for similar export authority from

other export terminals,” Response 39, and it has the tools to do so.⁴ 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 uncertain as to be meaningless, Response 40; 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

⁴ Cheniere argues that DOE, like FERC, need only assess effects occurring within “Cameron Parish,” and the area of “the Expansion Project.” Cheniere Resp. 33-34. But NEPA demands assessment of all related “actions that will have cumulative or synergistic environmental impact upon a region.” *Sierra Club v. FERC*, 827 F.3d 36, 50 (D.C. Cir. 2016) (citation omitted). Because this Court held that DOE, rather than FERC, bore responsibility for the “environmental impact” of LNG exports, it held that FERC’s cumulative effects analysis could be limited to the “region” affected by the terminal’s construction. *Id.* DOE’s responsibility for exports, however, does not permit the same regional limitation on its analysis (as the Agency recognizes, Response 35-6).

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____.⁵

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. Whether a “qualitative” or “quantitative” analysis of those exports’ impacts might suffice is, Response 41, for purposes of this appeal, irrelevant: the Agency determined that there would be “no” significant environmental impacts—qualitative or quantitative—and declined to prepare an EIS

⁵ DOE's Response states that DOE “use[d] ... the EIA's projections” in its no-impact Finding. Response 39. The Finding did not, however, describe the effects of the production increases projected by EIA; it refused to analyze the environmental consequences of those (or any other) increases in natural gas production, on the grounds that such increases were “not ‘reasonably foreseeable.’” Finding 2-3, JA____ - ____.

on those grounds. Finding 3, JA_____ (emphasis added). The record offers no support for that determination.

(b) Respondents claim that the non-climate-related effects of DOE's decision require local and regional information that is beyond the agency's ability to predict (respondents do not suggest that this prevents analysis of climate-related impacts). Response 42-46. DOE contends that what matters is how the broader energy market will respond to Cheniere's exports, rather than where the actual gas exported from Sabine Pass will come from, Response 42-43. DOE has tools designed to predict this response: namely, EIA's National Energy Modeling System. EIA already uses that System to predict how gas production in various "plays"—regional natural gas formations— will change in response to various potential scenarios. *See Annual Energy Outlook 2015* at 19-22, JA_____, _____. (predicting specific export-related production increases in particular plays).

To provide a meaningful NEPA analysis, the agency need only make such regional, "play-level" forecasts. DOE never disputes—in its decision document, or even its brief—that EIA's tools can provide play-level forecasts. A consultant's report illustrates the feasibility of such

predictions. See Deloitte Marketpoint, Analysis of the Economic Impact of LNG Exports from the United States, at 14, JA____ (quantitatively estimating how a single export facility near Sabine Pass would increase production in the Haynesville Shale and four other gas plays, as well as other aggregated gas sources). These models are specifically designed to accommodate “price elasticity,” “marginal production,” the “interconnected” pipeline network, and other factors DOE notes. Compare Response 42-43 with EIA, Documentation of the Oil and Gas Supply Module at 2-3, JA____; See also Sierra Club’s Motion to Intervene, Protest, and Comments (Sept. 23, 2013) at 27-28, JA____ - _____, Opening 48-49.

DOE argues that play-level modeling cannot “meaningfully inform environmental review.” Response 43. But the agency concedes the existence of “a common model to assess [ozone] impacts” at a region-wide level, based on such play-level modeling (and, indeed, notes that it has used such models to predict air-quality impacts on a regional level). Response 45. The only reason it offers for refusing to utilize that model is that it “depends upon a wide variety of factors that are subject to change.” *Id.* The Department provides that rationale only in its brief.

N. Air Cargo v. U.S. Postal Serv., 674 F.3d 852, 860 (D.C. Cir. 2012) (agency cannot rely on post hoc rationale). And in any event, such dependence is true of any model—and, indeed, of any prediction. Here, the Department has the ability to predict the regions that are likely to experience an increase in natural gas production as a result of the exports it is authorizing; and it has models that will allow it to describe the regional ozone-related consequences of that production. Similarly, DOE acknowledges in its brief that regional, “play-level data” is sufficient to address “impacts on water usage.” Response 44.⁶ DOE is, consequently, capable of meaningfully evaluating the impacts of its decision. *See, e.g.*, Addendum 28-29, JA____-____ (discussing studies of environmental impacts of increased natural gas production).⁷

(c) Finally, respondents point to “local, state, and other federal agency regulations” governing some aspects of natural gas production,

⁶ 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 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*.

⁷ DOE’s assertions of infeasibility and unreasonable costs are supported by no estimate or other record evidence.

and argue that these regulations render “long-term projections about export-induced natural gas production highly uncertain.” Response 46. 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 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____, ____-____, ____-____, ____, ____-____. 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 scenarios. Authorization Order at 124-25, 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. 2012 Export Study 6, JA____; 2014 Export Study 18, JA____. And the agency’s analyses describe at least some significant impacts

that follow from such increased coal use. 2012 Export Study 18-19 (discussing climate effects of gas-to-coal switching, but refusing to address other non-climate impacts), JA____-____.⁸ 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. Response 48-49. *See also* Cheniere Resp. 24-25 (arguing that analysis of effects on “*substitute[s]*” 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

⁸ Though the studies were released “before the Clean Power Plan,” Response 50, they include a scenario designed to serve as “a proxy for possible future” greenhouse gas regulations such as the Plan. Annual Energy Outlook 2014 at IF-35, JA____ (describing “Accelerated Coal and Nuclear Retirements” scenario described in 2014 Export Study at 5, JA____). DOE’s brief confirms, consequently, 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.

fuel's primary alternative) are "later in time or farther removed in distance"—in other words, attenuated. 40 C.F.R. § 1508.8(b).

The record flatly contradicts the agency's assertion that substitution-related effects cannot be predicted: EIA has already predicted how, in each case EIA analyzed, exports will increase coal use in the nation's twenty-two "electricity market module" regions. Opening at 20-21.⁹ *See also* EIA, *The National Energy Modeling System: An Overview*, at 45 (2009), JA____. DOE's suggestion that EIA's forecasts are too uncertain to be relied upon 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 193-94, JA____-_____.

Cheniere acknowledges that DOE, in making those price forecasts, expressly found the EIA export studies to be "fundamentally sound." Cheniere Resp. 26 (citation omitted). Cheniere argues that, nevertheless, they were not sound enough to meet NEPA's standard of "reasonable foreseeability," because they could not "predict with any

⁹ <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=63-FE2014&cases=fe2014~ref20&sid=~&sourcekey=0>; *see also* http://www.eia.gov/outlooks/aeo/pdf/nerc_map.pdf (map).

certainty how much, and where, coal-switching will occur over the next 25 years.” *Id.* But that conflates reasonable foreseeability with certainty; the EIA studies, according to DOE, reliably foresee an increase in coal use resulting from DOE’s export authorization. As Cheniere notes, those studies further indicate that such fuel-switching will produce at least some significant environmental impacts. *Id.* (noting “potential aggregate CO₂ impacts”). The studies cannot, consequently, be reconciled with DOE’s determination that its decision would have no significant environmental impacts. *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 emissions of methane and other greenhouse gases. Domestic Life Cycle Report 34-36, 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 57.

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 50-51. *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.¹⁰ 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 *insignificant*, or its refusal to prepare an EIS. Where an agency's assessment reveals significant effects, NEPA requires an EIS. 42 U.S.C. § 4332(C). The only rationale offered by DOE for its failure to follow

¹⁰ DOE's Response notes that "EIA projected" that exports would increase domestic energy-related CO₂ emissions by "0.2 to 0.6 percent." Response 24 n.7. That increase represents only emissions from liquefaction facilities and gas-to-coal shifting. 2012 Export Study 18-19, JA____-____. It excludes emissions from increased natural gas production—in particular methane emissions. *See* Domestic Life Cycle Report 34-36, JA____-____.

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 45, 48-49 & 51. 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* 674 F.3d at 860. 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 impact 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.

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).

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 even mention the agency's action: authorization of Cheniere's requested exports. They do not address the environmental impacts that will flow from this volume of exports, or the cumulative volume of exports that would result from the numerous applications approved or pending before the agency. *See* Authorization Order 198, JA____ (Addendum does not "attempt to identify or characterize the incremental environmental impacts that would result from LNG exports"). And they 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. The Addendum and Life Cycle Reports are, in short, completely untethered from the actual decision before the agency. *See* Opening 71-73.

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.

The Department notes that “NEPA regulations clearly allow environmental documents to incorporate analyses found in other materials.” Response 54.¹² But the sum total of the Agency’s analysis here still fails to meet NEPA’s central requirements. *See Union Neighbors United, Inc. v. Jewell*, 831 F.3d 564, 576 (D.C. Cir. 2016)

¹² While the Finding acknowledged the Addendum (it did not mention the Lifecycle Analyses or Export Studies), it did not formally incorporate it. Rather, the Finding expressly limited the “discussion and analyses” related to DOE’s decision to the 2014 EA prepared by FERC, and the Authorization Order. Finding 3, JA____. *See also* 40 C.F.R. § 1502.21 (describing requirements for incorporation by reference). *See also* Finding 3 (stating that DOE “considered” Addendum, but not as a document “required by NEPA”).

(NEPA requires inclusion of reasonable alternatives). NEPA's core requirements are meant not just to provide "paperwork," but to ensure "decisions that are based on understanding of [their] environmental consequences." 40 C.F.R. § 1500.1(c). *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 steps prescribed by Congress to clarify the precise contours of a proposed decision and its impacts. DOE failed to do so here, and thereby violated the law.¹³

¹³ American Petroleum Institute (API) adds various disparaging characterizations of the Sierra Club's motives. *See, e.g.*, API Brief 1-2, 11 ("Sierra Club is not ultimately concerned with the fine points of ... NEPA obligations."). *Cf.* API's Motion for Leave to File a Short Stand-Alone Intervenor Brief (Dkt.#1646240) 3-4 (seeking to exceed word limits to present perspective 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 debate as to the merits of allowing such exports.

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 58-60. 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 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 207 (noting competition with renewables and efficiency), 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.

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.6, 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 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 Insufficient.

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____; Opening 74-75. The benefits, on the other hand, will primarily accrue only to natural gas companies and their shareholders. *Id.* DOE argues that by stating that it did not “see sufficiently compelling evidence” of distributional concerns, it sufficiently addressed the issue. *Id.* at 75-76 (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, Inc. 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 explaining why). An agency “must say more” to survive arbitrary and capricious review. *Amerijet Int’l*, 753 F.3d at 1350-52.

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 Cheniere’s application would forego the “entire[ty]” of the “economic and international benefits,” while preventing only an “increment[.]” of the environmental harms. Authorization Order 202, JA____. But whether an “incremental” portion of the harms is less than the “entire[ty]” of the benefits necessarily depends 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 198, JA____ (refusing to “identify or characterize the incremental environmental impacts” of exports). That estimate need not precisely quantify the harms, or take the form of a formal cost-benefit analysis. *See* Response 57-58. 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 6,992 words, as counted by counsel's Microsoft Word processing program.

Dated: March 17, 2017.

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CERTIFICATE OF SERVICE

I hereby certify that on this 17th day of March, 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

Nathan Matthews