[NOT YET SCHEDULED FOR ORAL ARGUMENT]

No. 16-1253

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

SIERRA CLUB,

Petitioner,

v.

UNITED STATES DEPARTMENT OF ENERGY,

Respondent;

and

CHENIERE MARKETING, LLC; CORPUS CHRISTI LIQUEFACTION, LLC; and AMERICAN PETROLEUM INSTITUTE

Intervenors-Respondents.

On Petition for Review of the Department of Energy, Office of Fossil Energy
Orders 3638 (May 12, 2015) and 3638-A (May 26, 2016)
DOE/FE Docket No. 12-97-LNG

[PROOF] ANSWERING BRIEF FOR RESPONDENT

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CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to D.C. Circuit Rule 28(a)(1), the undersigned counsel certifies as follows:

A. Parties and Amici

The parties and amici appearing on this petition for review are:

(1) Sierra Club, *Petitioner*

(2) United States Department of Energy, *Respondent*

(3) Cheniere Liquefaction, LLC, *Intervenor for Respondent*

(4) Corpus Christi Liquefaction, LLC, *Intervenor for Respondent*

(5) American Petroleum Institute, *Intervenor for Respondent*

B. Rulings Under Review

Petitioner seeks review of two orders of the Department of Energy (DOE):

(1) Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel From the Proposed Corpus Christi Liquefaction Project to be Located in Corpus Christi, Texas, to Non-Free Trade Agreement Nations; DOE/FE Order No. 3638 (May 12, 2015); and

(2) Opinion and Order Denying Request for Rehearing of Order Granting Long-term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Proposed Corpus Christi Liquefaction Project to be Located in Corpus Christi, Texas, to Non-Free Trade Agreement Nations; DOE/FE Order No. 3638-A (May 26, 2016).

C. Related Cases

Petitioner Sierra Club has filed three additional petitions in this Court for review of orders by DOE that, like the orders at issue in the present case, grant long-term, multi-contract authorization for the export of liquefied natural gas to non-free trade agreement nations. In all four cases, Sierra Club alleges that DOE violated the National Environmental Policy Act by failing to adequately evaluate environmental impacts, including cumulative impacts from the multiple export authorizations and indirect impacts relating to export-induced natural-gas production. The other petitions for review are:

(1) *Sierra Club v. Department of Energy*, D.C. Cir. No. 15-1489, which involves LNG exports from the Freeport LNG Terminal on Quintana Island, Texas; briefing has been completed and oral argument is scheduled for February 2, 2017;

(2) *Sierra Club v. Department of Energy,* D.C. Cir. No. 16-1186, which involves LNG exports from the Cove Point LNG Terminal in Calvert County, Maryland; briefing is scheduled for completion on February 14, 2017;

(3) *Sierra Club v. Department of Energy,* D.C. Cir. No. 16-1252, which involves LNG exports from the Sabine Pass LNG Terminal in Louisiana; briefing is scheduled for completion on March 31, 2017, and

(4) *Sierra Club v. Department of Energy*, D.C. Cir. No. 16-1426, which also involves LNG exports from the Sabine Pass LNG Terminal in Louisiana; briefing is not yet scheduled.

The Court has also ruled on several cases involving challenges to orders from the Federal Energy Regulatory Commission (FERC) that authorized the construction of the various projects at issue in the aforementioned cases. These cases include:

(1) *EarthReports, Inc. v. Fed. Energy Reg. Comm'n*, 828 F.3d 949 (D.C. Cir. 2016), in which amici in D.C. Cir. No. 16-1186 challenged FERC's conditional authorization of the conversion of the Cove Point LNG Terminal from an import to an export facility. The Court denied the petition.

(2) *Sierra Club v. Fed. Energy Reg. Comm'n*, 827 F.3d 36 (D.C. Cir. 2016), in which Sierra Club and others challenged FERC's decision authorizing the redesign of the Freeport LNG Terminal on Quintana Island, Texas. The Court denied the petition.

(3) *Sierra Club v. Fed. Energy Reg. Comm'n*, 827 F.3d 59 (D.C. Cir. 2016), in which Sierra Club challenged FERC's authorization of the improvements at the Sabine Pass LNG Terminal in Louisiana. This Court denied the petition.

(4) *Sierra Club v. Fed. Energy Reg. Comm'n*, No. 15-1133, 2016 WL 6915537 (D.C. Cir. Nov. 4, 2016), in which Sierra Club challenged FERC's

authorization of the construction of an LNG import/export facility and pipeline near Corpus Christi, Texas—the Terminal at issue in this case. The Court denied the petition in an unpublished opinion that relied on the rationale set out in *Sierra Club v. FERC*, 827 F.3d 36 (D.C. Cir. 2016), and *EarthReports, Inc. v. FERC*, 828 F.3d 949 (D.C. Cir. 2016).

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GLOSSARY OF ACRONYMS & ABBREVIATIONS

Bcf/d	Billion cubic feet per day
Bcf/yr	Billion cubic feet per year
CEQ	Council on Environmental Quality
CO_2	Carbon dioxide
DOE	U.S. Department of Energy
EA	Environmental Assessment
EIA	U.S. Energy Information Administration
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
FONSI	Finding of no significant impact
FTA	Free trade agreement
JA	Joint Appendix
LNG	Liquefied natural gas
MWh	Megawatt hour
NEPA	National Environmental Policy Act
NEMS	National Energy Modeling System
NETL	National Energy Technology Laboratory
NGA	Natural Gas Act

INTRODUCTION

Due to new production techniques, the United States has recently become the world's leading producer of natural gas. [AR112]. This abundance of domestic natural gas has prompted companies to pursue projects to liquefy natural gas for export to foreign markets by vessel. *See* 79 Fed. Reg. 32,260 (June 4, 2014). Under Sections 3(a) and 3(c) of the Natural Gas Act, the U.S. Department of Energy (DOE) must authorize natural gas exports to nations with which the United States has a free trade agreement (FTA) requiring national treatment for trade in natural gas, and must authorize natural gas exports to all other nations unless DOE determines that the export is not "consistent with the public interest." 15 U.S.C. §§ 717b(a), (c).

In this petition for review, Sierra Club challenges DOE orders authorizing Cheniere Marketing, LLC, and Corpus Christi Liquefaction, LLC (collectively "Cheniere"), to export liquefied natural gas (LNG) to non-FTA nations from a proposed liquefaction facility to be located near Corpus Christi, Texas, in San Patricio and Nueces Counties (Corpus Christi Terminal). DOE granted Cheniere's applications to export LNG in an amount equivalent to 2.1 Bcf/d (billion cubic feet per day), after conducting an extensive public-interest and environmental review and finding insufficient record evidence to rebut the statutory presumption that the proposed exports are in the public interest.

Sierra Club contends that DOE failed to take a hard look under NEPA at greenhouse-gas emissions and other impacts that might result from increased

domestic natural-gas production and from foreign consumption of U.S.-exported LNG. Given the many uncertainties affecting the domestic and international energy markets, DOE reasonably determined that potential environmental effects specifically attributable to export-induced natural-gas production are too speculative to be reasonably forecast and meaningfully quantified for NEPA purposes. Nonetheless, as part of its public-interest review under Section 3(a) of the Natural Gas Act, DOE participated in the preparation of an Environmental Impact Statement (EIS) to evaluate and disclose air, water, seismicity, and other impacts associated with natural-gas production, and a Life Cycle Analysis to evaluate and disclose the impact of LNG exports on global climate change. DOE's review constituted the "hard look" required by NEPA and provided a reasonable basis for DOE's determination under Section 3(a) that the potential adverse environmental impacts do not render the proposed exports contrary to the public interest. The Court should therefore deny the petition for review.

STATEMENT OF JURISDICTION

Petitioner Sierra Club seeks review of two DOE orders under Section 3(a) of the Natural Gas Act: (1) DOE/FE Order 3638 (May 12, 2015), authorizing Cheniere to export 2.10 Bcf/d of LNG to non-FTA nations, and (2) DOE/FE Order 3638-A (May 26, 2016) denying rehearing of the May 12, 2015, authorization order. Sierra Club timely filed a petition for review in this Court on July 25, 2016. This Court has jurisdiction under 15 U.S.C. § 717r(b).

STATEMENT OF ISSUES

This case concerns DOE's compliance with NEPA in analyzing and authorizing LNG exports. Sierra Club's claims are reviewed under the arbitrary and capricious standard of review. *See* 5 U.S.C. § 706(2)(A). Under that deferential standard, the questions presented on appeal are as follows:

1. Did DOE, in accordance with NEPA, take a hard look at the potential environmental effects of authorizing the export of domestic LNG from the Corpus Christi Terminal to non-FTA countries?
2. Did DOE reasonably conclude, under Natural Gas Act § 3(a), that authorizing exports from the Corpus Christi Terminal was not inconsistent with the public interest?

PERTINENT STATUTES AND REGULATIONS

Pertinent statutes and regulations not appearing in Petitioner's brief are reproduced in the addendum to this brief.

STATEMENT OF THE CASE

I. STATUTORY BACKGROUND

A. National Environmental Policy Act (NEPA)

Under NEPA, whenever a federal agency proposes to take a "major Federal action[] significantly affecting the quality of the human environment," the agency must prepare a detailed environmental impact statement (EIS) describing the likely environmental effects of the proposal, "any adverse environmental effects which

cannot be avoided should the proposal be implemented," and potential alternatives. 42 U.S.C. § 4332(2)(C). NEPA does not "dictate…decisional outcomes," but instead establishes a decisional process. *Sierra Club v. U.S. Army Corps of Eng'rs*, 803 F.3d 31, 36–37 (D.C. Cir. 2015). NEPA's "twin purposes" are to ensure that agency decisions are informed by "careful consideration of environmental impact[s]" and by public participation in the evaluation of environmental impacts and policy tradeoffs. *Id.* NEPA "requires informed decisionmaking but not necessarily the best decision." *WildEarth Guardians v. Jewell*, 738 F.3d 298, 303 (D.C. Cir. 2013) (citation and internal quotation marks omitted).

The Council on Environmental Quality (CEQ) has issued regulations on when environmental impact statements must be prepared and on their form and content. CEQ's regulations bind federal agencies by executive order and are owed "substantial deference" by the courts. *Taxpayers of Mich. Against Casinos v. Norton*, 433 F.3d 852, 861 (D.C. Cir. 2006) (citing *Andrus v. Sierra Club*, 442 U.S. 347, 358 (1979)). When preparing an EIS, the agency must consider the potential direct, indirect, and cumulative effects of the proposed action. 40 C.F.R. § 1508.25(c). "Indirect effects" can include reasonably foreseeable "growth inducing effects," other "induced changes," and "related effects on air and water and other natural systems" that are caused by an agency action but removed in time or distance. *Id.* § 1508.8(b). "Cumulative" effects are impacts resulting "from the incremental impact of the action

when added to other past, present, and reasonably foreseeable future actions." *Id.* § 1508.7.

B. Natural Gas Act (NGA)

Enacted by Congress in 1938, the Natural Gas Act authorized the then-existing Federal Power Commission to regulate the interstate sale and transportation of natural gas, and natural-gas imports and exports, for the primary purpose of protecting consumers from anticompetitive practices. *NAACP v. Fed. Power Comm'n*, 520 F.2d 432, 438 (D.C. Cir. 1975); *see also Fed. Power Comm'n v. Hope Nat. Gas Co.*, 320 U.S. 591, 610 (1944); *W.Va. Pub. Servs. Comm'n v. U.S. Dept. of Energy*, 681 F.2d 847, 855 (D.C. Cir. 1982). In 1977, Congress transferred the Federal Power Commission's authorities to two newly created agencies: DOE and the Federal Regulatory Energy Commission (FERC). *La. Ass'n of Indep. Producers v. FERC*, 958 F.2d 1101, 1120 (D.C. Cir. 1992). DOE's Office of Fossil Energy now administers NGA § 3(a), which governs import/export authorizations. *EarthReports, Inc. v. FERC*, 828 F.3d 949, 952 (D.C. Cir. 2016). DOE delegated to FERC the authority to administer NGA § 3(e), which governs the siting, construction, expansion, and operation of LNG terminals. *Id.* at 953.

Section 3(a) requires DOE approval for the import or export of natural gas, but provides that DOE "shall" grant such authority, "unless, after opportunity for hearing, [DOE] finds that the proposed exportation or importation will not be consistent with the public interest." 15 U.S.C. § 717b(a). Section 3(c) requires

approval of natural gas import/export applications "without modification or delay" as to nations "with which there is in effect a free trade agreement requiring national treatment for trade in natural gas."[1] *Id.* § 717b(c). While export authorizations for non-FTA nations, like the order at issue in this case, are not mandatory, there is a "general presumption favoring…authorization." *W.Va. Pub. Servs. Comm'n*, 681 F.2d at 856.

In 1984, DOE published guidelines for the authorization of natural-gas imports. 49 Fed. Reg. 6684 (Feb. 22, 1984); *see also La. Ass'n of Indep. Producers*, 958 F.2d at 1120. Reflecting the terms of the Natural Gas Act, the guidelines presume that open markets will further the public interest. 49 Fed. Reg. at 6685; *see also New England Fuel Inst. v. Econ. Regulatory Admin.*, 875 F.2d 882, 883–84 (D.C. Cir. 1989). DOE has adopted a substantially similar approach for natural-gas exports. [AR95 at 13]. When considering applications for export authorization, DOE focuses on: (1) the domestic need for the natural gas proposed for export; (2) the security of domestic natural-gas supplies; (3) whether the export arrangement is consistent with promoting market competition; and (4) any other factors, including environmental impacts, bearing on the public interest. [*Id.* at 14].

[1] A list of FTA nations is available at https://ustr.gov/trade-agreements/free-trade-agreements (last visited Jan. 23, 2017).

II. FACTUAL AND PROCEDURAL BACKGROUND

A. Cheniere's Applications

In 2005, Cheniere obtained authorization from FERC, the U.S. Army Corp of Engineers, and other federal agencies to construct an LNG import facility near Corpus Christi, Texas. [AR18 at 2 n.6; AR81 at 1-1, 4-20, 4-28, 4-93]. Since 2005, however, domestic natural-gas production has rapidly expanded due to new drilling technologies, decreasing the demand for LNG imports. [AR18 at 16]. In June 2012, FERC vacated its prior authorization for the Corpus Christi LNG import terminal because Cheniere did not construct the facilities within the authorized timeframe. [AR81 at 1-1].

In August 2012, Cheniere applied for authorization to construct and operate facilities capable of importing, exporting, storing, vaporizing, and liquefying natural gas. [AR81 at ES-1]. These facilities will be located on the 991-acre site of the previously-authorized import facility. [AR81 at ES-1]. After construction, Terminal operations will continue to occupy only 349 acres. [*Id.* at 2-10]. The new Terminal would include three LNG liquefaction trains[2]; two trains of ambient air vaporizers, used for regasifying LNG; three full-containment storage tanks capable of storing approximately 160,000 cubic meters of LNG; and marine facilities with two LNG carrier berths. [*Id.* at 2-1–2-3]. Cheniere estimates that construction of the Terminal

[2] A liquefaction train is a fully contained independent unit that converts natural gas into a liquid form (*i.e.*, LNG) at a liquefied natural gas facility.

will take approximately 72 months, with substantial completion of the first liquefaction train scheduled for 2019. [*Id.* at 2-18]. Once completed, the Terminal will employ approximately 250 full-time staff. [*Id.* at 2-26].

In addition to the construction and operation of the Terminal, Cheniere applied for a Certificate of Public Convenience and Necessity to authorize the construction and operation of a new bi-directional natural-gas pipeline. [AR81 at 1-1]. The new pipeline will be 48 inches in diameter and will run for 23 miles through San Patricio County, Texas, before connecting with existing pipelines operated by the Tennessee Gas Pipeline Company, LLC. [*Id.* at 2-9]. Pipeline construction is scheduled to begin in 2017 and last for one year. [*Id.* at 2-18]. Once constructed, the Corpus Christi Pipeline will connect the Corpus Christi LNG Terminal to interstate and intrastate natural-gas supplies and markets. [AR95 at 2].

At the time it sought authorization to construct the Corpus Christi Terminal and pipeline, Cheniere also applied to DOE for authorization under § 3(a) of the Natural Gas Act to export domestic LNG to non-FTA countries from the future Corpus Christi LNG Terminal. [AR18]. Cheniere sought authorization to export up to 767 Bcf/yr (2.1 Bcf/d) of natural gas on its own behalf and as an agent for other entities holding title to the LNG. [AR20].

B. DOE's Export Studies on Macroeconomic Impacts

By August 2011, DOE had received several similar applications for LNG export authorization from other entities. [AR95 at 68]; *see also* 77 Fed. Reg. 73,627

(Dec. 11, 2012). To effectively evaluate all pending and expected applications, DOE commissioned two studies assessing the impact of LNG exports on domestic energy markets and related macroeconomic effects (collectively, the "2012 LNG Export Study"). 77 Fed. Reg. at 73,627. DOE published the findings of both studies comprising the 2012 LNG Export Study, and made them available for public review and comment. *Id.*

1. 2012 EIA Study on LNG Exports

DOE first asked the U.S. Energy Information Administration (EIA) to estimate the effects of LNG exports on domestic energy markets over a 25-year period utilizing the National Energy Modeling System (NEMS). *See* [AR95 at 4]. EIA is an independent agency within DOE tasked with collecting and evaluating data on the adequacy of the nation's resources for meeting short and long-term energy needs. 42 U.S.C. § 7135(a)(2). EIA uses the NEMS model to prepare long-term projections, or "Annual Energy Outlooks," of market conditions for natural gas and other resources.[3] [AR23 at 2].

In 2011, total marketed natural-gas production was about 66 Bcf/d. [AR23 at 1]. For the 2012 LNG export study that DOE requested, EIA applied various market scenarios examined in the 2011 Annual Energy Outlook to each of four hypothetical

[3] Current and prior outlooks are available at http://www.eia.gov/forecasts/aeo/ (last visited Jan. 25, 2017).

LNG export demand levels.[4] These values were "exogenously specified," meaning they were not projected by the model. [*Id.* at 2]. NEMS is "not a world energy model" and does not "account for all interactions between energy prices and supply/demand" in globally-competitive industries. [*Id.* at 3]. EIA did not project whether export volumes would actually reach 12 Bcf/d if DOE were to authorize exports up to or beyond such amount. *See* [*id.* at 2–3]. EIA also observed that energy markets are highly dynamic and subject to "many events that cannot be foreseen, such as supply disruptions, policy changes, and technological breakthroughs." [*Id.* at 3] For these and other reasons, EIA cautioned that the results of its 2012 report were "highly uncertain." *Id.*

Subject to these disclaimers, EIA projected that (1) the assumed increases in natural-gas demand would spur greater natural-gas production sufficient to satisfy 60–70% of the export volume; (2) approximately 72% of the increased production would come from shale; (3) the remaining export volume would come from natural gas that otherwise would be consumed domestically; and (4) higher domestic prices would cause reduced natural-gas consumption in the domestic electric-power sector on the

[4] These scenarios included: (1) a low/slow scenario where export demand increased by 6 Bcf/d of natural gas (representing approximately 9% of then-current domestic natural-gas production) phased in at a rate of 1 Bcf/d per year; (2) a low/rapid scenario with the 6 Bcf/d increased demand phased in at a rate of 3 Bcf/d per year; (3) a high/slow scenario where export demand increased by 12 Bcf/d (approximately 18% of amount of domestic natural gas produced in 2011) phased in at a rate of 1 Bcf/d per year; and (4) a high/rapid scenario where the 12 Bcf/d increase is phased in at a rate of 3 Bcf/d per year. [AR23 at 1–2].

order of 0.5–1.5%, which would be compensated for primarily by an increase in coal consumption and secondarily by increases in renewable energy generation and conservation. [*Id.* at 6, 12, 18].

2. NERA Study

Because EIA's study did not project full macroeconomic impacts on the U.S. economy, DOE commissioned a private consultant, NERA Economic Consulting, to conduct such a study. *See* [AR95 at 4; AR24]. Published in 2012, the NERA study analyzed impacts of LNG exports across a range of macroeconomic indicators, including gross domestic product, price, wages, household incomes, and welfare. [AR95 at 78]. To gauge such impacts, NERA modeled the scenarios addressed in the aforementioned EIA study, as well as additional scenarios based on different assumptions about natural-gas development and international economic conditions, including a scenario with no U.S. export controls. [*Id.*; AR24 at 3–5]. Unlike the EIA study, NERA's modeling considered global supply-and-demand and international market responses. [AR95 at 78; AR24 at 3–5].

NERA produced two sets of findings. First, unlike EIA, NERA addressed the conditions under which export levels prescribed in the EIA study would be "achievable." [AR95 at 91; AR24 at 3, 6, 9–10]. NERA determined that "in many cases"—including EIA's reference case—"the world natural gas market would not accept the full amount of exports assumed in the EIA scenarios at export prices high enough to cover the U.S. wellhead domestic prices calculated by the EIA." [AR24 at

3]. Stated differently, considering global supply and demand, NERA "estimated lower export volumes" than the 6 Bcf/d and 12 Bcf/d scenarios "specified…for the EIA study," suggesting U.S. markets would experience a lesser degree of impacts.[5] [*Id.* at 10].

Second, NERA projected net economic benefits to the United States in all scenarios studied. [*Id.* at 6–7; AR95 at 93–94, 122, 190, 204]. NERA projected that exports would cause natural gas prices to rise in a "relatively narrow range," adversely affecting some sectors and lowering real wages. [AR95 at 79]. But NERA found that "serious competitive impacts are likely to be confined to narrow segments of industry," [*id.* at 80, 93, 111], and would be offset, in all scenarios, by increases in household income and welfare, [*id.* at 114]. NERA projected that such net economic benefits would occur even with unlimited exports (*i.e.*, where export volumes are determined solely by market forces). [*Id.* at 4, 78–79, 88, 93].

C. Environmental Review Proceedings

1. FERC's Environmental Impact Statement

When multiple federal agencies have jurisdiction over aspects of a proposal, the designated "lead agency" must supervise the preparation of a NEPA document, with the other agencies acting as "cooperating agencies." 40 C.F.R. §§ 1501.5, 1501.6,

[5] NERA identified only three scenarios where export volume (without controls) would balance at levels greater than 12 Bcf/d. *See* [AR95 at 88 & n.141]. All three involved international demand or supply shock. *Id.*

1508.5, 1508.16. Congress has designated FERC the lead agency for NEPA review of all NGA § 3 authorizations. 15 U.S.C. § 717n(b)(1). Consistent with this directive, and FERC's authority over the construction and operation of LNG terminals (*id.* § 717b(e)), FERC acted as the lead agency in preparing an EIS for the Corpus Christi Liquefaction Project. [AR81 at 1-7]. Given its jurisdiction over LNG exports, DOE acted as a cooperating agency. [*Id.* at 1-7, 1-9–1-10]. The U.S. Army Corps of Engineers, U.S. Coast Guard, U.S. Environmental Protection Agency, and U.S. Department of Transportation also acted as cooperating agencies, based on their regulatory authorities over other aspects of the Project. [*Id.* at 1-7–1-10].

Before filing its application with FERC, Cheniere reached out to landowners, agencies, and other interested parties in an open-house information session in Portland, Texas. [*Id.* at ES-2, 1-10]. These sessions provided the public with an opportunity to learn about the project and ask questions in an informal setting. [*Id.*]. FERC also participated in the open house, providing information about the environmental review process to interested parties. [*Id.*]. FERC also provided landowners with a hotline number to contact if they were unable to obtain information from Cheniere. [*Id.* at 4-69]. FERC initiated NEPA proceedings in June 2012 by soliciting public comments and holding public meetings to identify relevant issues and the scope of environmental review. [*Id.* at 1-10]. FERC published its draft EIS on June 13, 2014, [AR65; AR95 at 40], and after responding to public comments on that draft, published the final EIS on October 8, 2014, [AR81].

The EIS, a 630-page document, thoroughly analyzed the potential environmental impacts that may occur from constructing and operating the Corpus Christi import/export terminal and associated pipeline (collectively "Corpus Christi LNG Project").[6] [AR81 at1-1]. FERC examined the potential direct, indirect, and cumulative impacts of the proposed Project on geology, soils, water resources, vegetation, wetlands, fisheries and wildlife resources, land use, socioeconomics, cultural resources, air and noise pollution, and safety and reliability. [*Id.* at 4-1–4-233]. For example, the EIS acknowledged that Project construction will have short-term air quality impacts and operation of the Terminal will have permanent impacts. [*Id.* at 4-94–4-129, 5-7]. FERC therefore examined modeling data to ascertain the effect of greenhouse-gas and other pollutant emissions. [*Id.*]. FERC found that "operation of the Terminal would not result in an exceedance of the [National Ambient Air Quality Standards]" for five of six pollutants. [*Id.* at 4-95, 4-97, 5-7]. And expanded modeling determined that Terminal operations "would not contribute significantly" to exceedances of these Clean Air Act standards for the sixth pollutant (nitrogen dioxide). [*Id.* at 4-123, 5-7]. Additionally, ozone modeling "demonstrate[d] that the Terminal is not expected to cause or contribute to an exceedance of an ozone NAAQS violation." [*Id.* at 4-124].

[6] The EIS did not address the potential effects of exporting domestic LNG to foreign countries because DOE, rather than FERC, has the authority to authorize such exports. [AR85 at 19 & n.27].

The EIS includes a lengthy examination of the cumulative effects of the Project. [AR81 at 4-211–4-233]. This analysis accounted for other projects, including LNG facilities, potentially contributing to the cumulative impacts from the Corpus Christi LNG Project. [*Id.* at 4-213–4-220]. Responding to comments from Sierra Club, however, FERC explained that "an environmental analysis of increased natural gas production would be too speculative for inclusion in the final EIS, because the impact cannot be described with sufficient specificity to make its consideration useful to reasoned decisionmakers." [*Id.* at 4-212]. FERC further stated that examination of the environmental effects caused by the end user of exported LNG is both too speculative and outside the scope of the proposed Project. [*Id.* at 4-212–4-213]. With respect to the impacts of increased LNG exports, FERC explained that LNG exports are self-limiting. [*Id.* at 4-213].

In addition to the proposed Project, FERC explored numerous alternatives to the construction and operation of the terminal and pipeline, including a no-action alternative and an alternative that would use alternative energy sources. [AR81 at 3-1–3-33, 5-9]. FERC concluded that although a no-action alternative would avoid the potential environmental impacts identified in the EIS, the need for natural gas imports and exports would simply compel projects with similar or greater environmental impacts in other locations. [*Id.* at 3-2–3-3, 5-9]. And FERC found that available forms of renewable energy were too costly, infeasible, or incapable of delivering constant and reliable energy production. [*Id.* at 3-3–3-4].

After reviewing the EIS, on December 30, 2014, FERC issued an order authorizing construction of the Corpus Christi LNG Project. [AR85]. Not only did FERC's order impose the 104 environmental mitigation measures recommended in the EIS, *see* [*id.* at 45–60], but it added 10 more requirements for the Project, [*id.* at 43–45]. With these conditions, FERC concluded that the Project's potential environmental impacts "described in the final EIS will be reduced to less-than-significant levels," [*id.* at 2].

2. DOE's Environmental Addendum

While it was participating as a cooperating agency on the Cheniere EIS, DOE was simultaneously conducting a generalized, comprehensive review of the potential environmental impacts of increasing LNG exports. Specifically, in response to comments from Sierra Club and others on the 2012 LNG Export Study and on individual LNG export applications, DOE prepared a lengthy Addendum to Environmental Review Documents Concerning the Exports of Natural Gas from the United States ("Environmental Addendum" or "Addendum"). [AR77]. While FERC's EIS was specific to the Corpus Christi Project, DOE's Addendum provided a broader analysis of "the potential environmental impacts of unconventional natural gas production activities." [*Id.* at 3]. The Addendum was made available for public comment in May 2014, and the final version with responses to comments was released in August 2014. [*Id.* at App'x B]; *see also* 79 Fed. Reg. 48,132 (Aug. 15, 2014).

The Environmental Addendum disclosed the difficulties in predicting not only market demands, but also the potential indirect impacts of such forces on the environment. Referencing EIA's 2014 Annual Energy Outlook report, the Addendum contains projections of total natural-gas production levels through 2040. [AR77 at 43]. These projections included, but were not specific to, LNG exports. [*Id.* at 5]. DOE acknowledged that unconventional sources of natural gas—shale gas, coalbed methane, and "tight gas" from sandstone and other rock—are likely to account for nearly all future production growth, but concluded that the "current rapid development" of such sources is likely to continue with or without exports. [*Id.* at 2].

DOE also cautioned that there are "fundamental uncertainties" about the size of the market for LNG exports and "where, when, or by what method" additional domestic natural gas would be produced to serve the export market that develops. [*Id.* at 1–2]. For these reasons, DOE could not "meaningfully" predict "specific environmental impacts" from export-induced production, within the localities or regions where such impacts would occur. *Id.* Accordingly, DOE determined that such impacts were not reasonably foreseeable for purposes of NEPA review of individual export applications. [*Id.* at 3; *see also* AR95 at 193].

Nonetheless, because cumulative exports could "accelerate…the development of unconventional [natural-gas] resources," DOE determined that it was important to analyze the generic impacts of unconventional natural-gas production for purposes of the Department's Section 3(a) public-interest review. [AR77 at 1–4; AR95 at 195].

To this end, DOE identified known shale plays, tight-gas plays, and coalbed-methane fields in the lower-forty-eight states. [AR77 at 4–9]. DOE reviewed existing literature that studied the environmental impacts associated with natural-gas production from such sources, including potential adverse effects on water quantity and quality, air quality, and seismicity. [*Id.* at 10–32, 45–68; AR95 at 196].

DOE's Environmental Addendum also addressed the "upstream" greenhouse-gas emissions that result from natural-gas production. [AR77 at 33–44]. Natural gas is mostly methane (CH_4), a greenhouse gas that has an atmospheric heat-retention effect substantially greater than CO_2 (the principal greenhouse gas), but dissipates to near zero after 100 years. [*Id.* at 36]. Methane's "global warming potential" is thus higher when averaged over a 20-year timeframe than over a 100-year timeframe. *Id.* In addition to "downstream" emissions from the combustion of natural gas as fuel, the various stages of natural-gas production (extraction, transportation, processing, and storage) create "upstream" emissions of methane and CO_2, due to the incidental venting, leaking, and flaring of natural gas, and the combustion of natural gas to power equipment. [*Id.* at 36–39].

In 2014, EPA released estimates showing that methane emissions from natural-gas production accounted for approximately 1.6% of all U.S. greenhouse-gas emissions in 2012, while methane and CO_2 emissions from natural-gas production together accounted for approximately 2.9% of all U.S. greenhouse-gas emissions. [*Id.* at 33, 40]. Using an existing study, DOE predicted that, regardless of LNG exports,

future upstream greenhouse-gas emissions from natural-gas production would rise to 3.8% of U.S. greenhouse-gas emissions for the period from 2015 to 2035. [*Id.* at 42–43].

DOE concluded that "[i]ncreased unconventional natural-gas production," including any incremental increases from exports, "will increase [greenhouse-gas] emissions from upstream [natural-gas] activities," which "may contribute to climate change." [*Id.* at 44]. But DOE further observed that the net effect of LNG exports on *global* greenhouse-gas emissions depends on the fuels displaced by exported LNG at the point of consumption (power generation). *Id.* In fact, LNG exports could have a net beneficial impact on climate change. *Id.*

3. Life Cycle Analysis of Greenhouse-Gas Emissions

To address potential impacts on global greenhouse-gas emissions, DOE commissioned one of its research laboratories, the National Energy Technology Laboratory (NETL), to prepare a Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States ("GHG Life Cycle Analysis"). [AR62]. NETL published the Life Cycle Analysis in May 2014, and DOE made the report available for review and comment by the public. [AR64].

In the GHG Life Cycle Analysis, NETL identified two representative markets for U.S.-exported LNG—Rotterdam, Netherlands, and Osaka, Japan. [AR62 at 1]. For each market, NETL compared the total amount of greenhouse gases emitted when generating one megawatt hour (MWh) of electricity using (1) LNG imported

from the United States, (2) LNG imported from closer regional sources, (3) natural gas exported via pipeline from Russia, and (4) regional coal. [*Id.* at 1–2]. In each scenario, NETL considered CO_2 and methane emissions from all stages of fuel production—from extraction to final combustion. *Id.* NETL found that producing and delivering LNG to European and Asian markets will emit more upstream greenhouse gases than producing and delivering regional coal because natural-gas production involves significant methane emissions. [*Id.* at 8–10]. But the majority of greenhouse-gas emissions from generating electricity with fossil fuels are downstream emissions from combustion at the power plant. *Id.* Additionally, natural gas burns much cleaner than coal. *Id.* For these reasons, NETL found that overall greenhouse-gas emissions associated with the LNG-export scenarios would be significantly lower than overall emissions from the regional-coal scenarios. *Id.*

Comparing the natural gas scenarios, NETL found that overall greenhouse-gas emissions from LNG imported from the United States would be (1) slightly higher than overall emissions from regional LNG, (2) significantly lower than emissions from Russian gas in terms of their 20-year global warming potential, and (3) comparable to emissions from Russian gas in terms of their 100-year global warming potential. [*Id.* at 9–10, 18]. These differences are principally attributable to different emission profiles during transportation. *Id.* NETL concluded that exporting U.S. LNG to produce power in Europe and Asia will *not* increase greenhouse-gas emissions compared to regional coal power. [*Id.* at 18] Additionally, potential differences in

greenhouse-gas emissions relating to the use of U.S. LNG, regional LNG, or Russian gas are largely limited to transport distance and are otherwise indeterminate due to uncertainty in the modeling data. [*Id.*; AR95 at 165].

4. Updated EIA Study and LNG Export Projections

After preparing its 2012 study, *supra* Part B.1, on how LNG exports of 6 or 12 Bcf/d might impact domestic energy markets, EIA began to include LNG export projections in its annual market reports. In the 2014 Annual Energy Outlook, EIA projected, as part of its "reference case,"[7] that U.S. LNG exports will gradually rise to 3500 Bcf/yr (approximately 9.6 Bcf/d) by 2029, and remain around that level through the end of the projection period in 2040. [AR56 at MT-24.] Comparatively, EIA projected 3100 Bcf/yr (approximately 8.5 Bcf/d) in pipeline exports of natural gas to Mexico by 2040. *Id.* DOE referenced both estimates in the Environmental Addendum to provide context for its discussion of potential environmental impacts from LNG exports. [AR77 at 43].

DOE also asked EIA to prepare a second study on the effects of LNG exports on U.S. markets that evaluated impacts from aggregate exports greater than 12 Bcf/d as compared to the baselines projected in the 2014 Annual Energy Outlook. [AR83 at 5]. EIA's 2014 study modeled LNG export scenarios of 12 Bcf/d to 20 Bcf/d,

[7] EIA's projections included five scenarios with different assumptions regarding the amount of natural-gas reserves and oil prices. [AR83 at 5]. The "reference" case falls in the middle. *Id.*

phased in at an "almost impossible" rate, to "show [the] outer envelope of domestic production and consumption responses." *Id.* Similar to EIA's 2012 study, EIA's 2014 study estimated that increased natural-gas production would satisfy about 61–84% of the theoretical demand for LNG exports, with shale-production supplying approximately 70% or more of the overall demand increase. [*Id.* at 12, 15–17]. Ten to 18 percent of the added export volume would come from decreased domestic natural-gas consumption in the electric-power sector, to be replaced by "[a] combination of demand reduction and increased coal, nuclear, and renewable [power] generation." [*Id.* at 18].

D. DOE Orders

1. Record of Decision

Signed on May 12, 2015, [AR96], and published on May 18, 2015, [AR97], DOE issued a Record of Decision identifying the Corpus Christi LNG Project as the "the environmentally preferred alternative." In making this finding, DOE expressly considered both the EIS prepared for the Project and DOE's Environmental Addendum, although DOE noted that NEPA did not require preparation of the Addendum. [AR96 at 28258]. DOE concluded that, under the Natural Gas Act § 3(a), "the opponents of the Application have failed to overcome the statutory presumption that the proposed export authorization is not inconsistent with the public interest." [*Id.*]. DOE therefore decided to issue a final order ("Authorization Order") granting the long-term, multi-contract authorization for Cheniere to export

domestically produced LNG to non-FTA countries from the Corpus Christi Terminal in an amount up to 767 Bcf/yr for 20 years. [*Id.*].

2. Final Authorization Order (DOE/FE Order 3638)

DOE's Authorization Order summarized the analyses contained in FERC's EIS, the 2012 EIA and NERA Export Studies, DOE's Environmental Addendum, and the GHG Life Cycle Analysis, and responded to objections by Sierra Club and others regarding the adequacy of and the conclusions drawn from DOE's environmental review. [AR95 at 68–191]. DOE reiterated that FERC's EIS "covered all reasonably foreseeable environmental impacts" of the Corpus Christi Project for NEPA-review purposes, and that "fundamental uncertainties" surrounding the export-induced production of natural gas prevented DOE from "foresee[ing] and analyz[ing] with any particularity" the environmental impacts associated with such production. [*Id.* at 193]. DOE also explained that the Addendum provided a detailed look at the types of environmental effects that might occur from additional production. [*Id.* at 193–94]. These effects were found to be "local in nature, affecting local water resources, local air quality, and local land use patterns, all under the auspices of state and local regulatory authority." [*Id.* at 194].

Addressing greenhouse-gas emissions, the Authorization Order referenced projections in the 2012 EIA study showing that LNG exports would lead to various incremental increases in domestic energy-related CO_2 emissions due to the combustion of natural gas for LNG liquefaction and a shift to coal in the electric-

power sector. [*Id.* at 77, 193, 198]. But the Order explained that EIA's 2012 study did not account for several newly promulgated and proposed regulations that would mitigate CO_2 emissions from coal-fired power plants.[8] [*Id.* at 199–200 & nn.292–97].

DOE also observed that upstream greenhouse-gas emissions from LNG production were accounted for in the Environmental Addendum and NETL's GHG Life Cycle Analysis. [AR95 at 154, 157]. DOE acknowledged that the Life Cycle Analysis did not include other energy sources such as nuclear energy and renewables, and did not "answer the ultimate question" as to whether LNG exports would increase or decrease global greenhouse-gas emissions. [*Id.* at 202–03]. Such an analysis, DOE noted, would require consideration of the dynamics of all energy markets in LNG-importing nations. *Id.* Given the many uncertainties in modeling such market dynamics, the analysis would be "too speculative to inform the public interest determination." [*Id.* at 203]. DOE explained that the Life Cycle Analysis was "useful," given the prevalence of coal and natural gas as electric-power sources in likely export markets, and suggested that LNG exports could even *decrease* global greenhouse-gas emissions by displacing other energy sources with higher greenhouse-gas emissions. [*Id.* at 204]. DOE found no evidence that LNG exports would

[8] EIA projected in 2012 that U.S. energy-related CO_2 emissions from 2015 to 2035 would increase from approximately 0.1 to 1.3 percent. [AR23 at 19]. EIA's 2014 report projected that increasing LNG exports from approximately 9.6 Bcf/d (reference-case) to between 12 and 20 Bcf/d would increase U.S. energy-related CO_2 emissions between 2015 and 2040 by around 0.2 to 0.6 percent. [AR83 at 21].

increase global greenhouse-gas emissions "in a material or predictable way." [*Id.* at 209].

Acknowledging the presence of "potential environmental issues" associated with natural-gas production, DOE nonetheless concluded that LNG exports should not be prohibited under NGA § 3(a). [*Id.* at 196]. DOE determined that the "public interest is better served" by addressing the environmental effects of natural-gas production through federal, state, and local regulation, rather than through the blunt instrument of export controls. [*Id.* at 196–97]. DOE explained, "Unlike DOE, environmental regulators have the legal authority to impose requirements on natural gas production that appropriately balance benefits and burdens, and to update these regulations from time to time as technological practices and scientific understanding evolve." [*Id.* at 196]. DOE also reaffirmed its findings that LNG exports would (1) provide net benefits for the U.S. economy, (2) increase energy security for key U.S. allies, and (3) lead to other benefits associated with open markets and international trade. [*Id.* at 191, 206].

On balance, DOE found insufficient evidence to rebut the presumption that Cheniere's proposed LNG exports are in the public interest. [*Id.* at 205–06, 214]. DOE authorized Cheniere to export up to a volume of 767 Bcf/yr of domestic LNG from the Corpus Christi Terminal to non-FTA nations. [*Id.* at 214]. The Authorization Order has a duration of 20 years, beginning on the date Cheniere begins commercial export of domestic LNG from the Terminal, or seven years from

the date of the order, whichever is earlier. *Id.* DOE also acknowledged that the uncertainties presented in LNG export applications counseled in favor of "proceeding cautiously" and remaining vigilant to "developments that could tend to undermine the public interest." [*Id.* at 207]. DOE therefore conditioned its authorization on Cheniere's compliance with the 104 environmental conditions adopted in FERC's order, designed to mitigate adverse environmental impacts associated with LNG exports. [*Id.* at 207, 216]. DOE also reiterated that, "[i]n the event of any unforeseen developments," the Natural Gas Act authorizes DOE to "take action as necessary to protect the public interest." [*Id.* at 205 n.307].

3. DOE's Order Denying Rehearing (DOE/FE Order 3638-A)

Sierra Club sought rehearing from DOE's Authorization Order, arguing that DOE failed, in its NEPA and NGA § 3(a) public-interest reviews, to adequately consider indirect and cumulative environmental effects, including climate change impacts, from induced natural-gas production, increased coal consumption, and the consumption of exported LNG. [AR98]. DOE denied rehearing on May 26, 2016. [AR111].

In its Order Denying Rehearing, DOE acknowledged the "economic logic" behind predictions that LNG exports would increase domestic natural-gas production "at the margin." [AR111 at 17]. But DOE explained that it could not quantify this incremental increase. DOE reiterated its determination that it would be "impossible to identify with any confidence the marginal production at the wellhead or local

level," which is necessary to ascertain specific environmental impacts. [*Id.* at 17]. DOE explained that the key parameter for modeling such incremental impacts is the "price elasticity of natural-gas production"—the extent to which marginal price increases will lead natural-gas suppliers to develop new sources. [*Id.* at 19]. Given variation in local geology, regulation, land use, and infrastructure, "estimating price elasticity of natural gas supply at the local level is much more speculative than doing so at the national level where local idiosyncrasies are averaged out." *Id.* Although modeling macroeconomic impacts on the intermediate level of shale plays might be "more reliable" than local or regional modeling, DOE determined that play-level modeling, like nationwide modeling, would remain insufficiently specific for meaningful analysis of environmental impacts on specific natural resources. [*Id.* at 19–20].

Moreover, because shale plays are distributed across the lower-48 states, [AR77 at 6]—where a vast integrated pipeline network connects natural-gas suppliers, processors, and consumers—higher natural-gas prices caused by increased export demand could accelerate production in any producing region. [AR111 at 20]. To comprehensively model play-level impacts would impose a heavy burden on DOE without meaningful return. [*Id.* at 20 & n.80]. As DOE explained, any projections of environmental impacts derived from such a study would be too "probabilistic and attenuated" to provide meaningful guidance for purposes of DOE's public-interest review of Cheniere's proposed exports. [*Id.* at 21].

As for potential impacts from projected increases in coal consumption, DOE explained that the causal relationship between LNG export authorizations and domestic coal consumption is "even more attenuated" than the relationship with natural-gas production. [*Id.* at 23–24]. DOE stated that NEPA's hard-look requirement does not extend to the impacts of producing or consuming potential energy alternatives to natural gas. [*Id.* at 24]. And DOE again asserted that EIA's 2012 projections with respect to coal are likely outdated and did not account for more recent environmental regulations that would limit CO_2 emissions from new and existing coal-fired power plants and similar facilities. [*Id.* at 24 & nn.93–94]; *see also* 80 Fed. Reg. 64,662 (Oct. 23, 2015); 80 Fed. Reg. 64,510 (Oct. 23, 2015).[9]

Finally, DOE considered and rejected Sierra Club's objections to the GHG Life Cycle Analysis. [AR111 at 36–40]. DOE explained that it had sufficiently addressed greenhouse-gas emissions in (1) the EIS, which evaluated greenhouse-gas emissions from the construction and operation of the Corpus Christi Project; (2) the Addendum, which included a detailed discussion of greenhouse-gas emissions associated with producing and transporting natural gas; and (3) the Life Cycle Analysis, which quantified upstream domestic emissions (as well as downstream

[9] As DOE noted in its order denying rehearing, the Supreme Court stayed implementation of the Clean Power Plan pending the disposition of petitions for review currently before this Court. [AR111 at 24 n.94] (citing *Chamber of Commerce v. EPA*, 136 S.Ct. 999 (2016) (mem.)). Final disposition of legal challenges concerning the Clean Power Plan should have no impact on this petition.

foreign emissions) from U.S. LNG exports, per MWh of electricity generated. [*Id.* at 37]. DOE reiterated that comparisons in the Life Cycle Analysis were "well chosen" and useful, because U.S. LNG exports would most naturally compete with other LNG exports and Russian pipeline gas (as "gas-on-gas" competition), and given the prevalence of coal in export markets "as a source of baseload power." [*Id.* at 38]. Finally, DOE highlighted that the aims of the Life Cycle Analysis were limited and that DOE was "not attempting a more precise prediction regarding global [greenhouse gas] impacts." [*Id.* at 39]. Given the "compounded uncertainties in estimating how…U.S. LNG exports would affect the market for every potential energy source in every importing country, along with the interventions of foreign governments in those markets," any effort to comprehensively forecast the foreign energy-market response to U.S. LNG exports and related changes in greenhouse-gas emissions would be "too speculative to inform [DOE's] public interest determination." *Id.*

SUMMARY OF ARGUMENT

1. Under CEQ regulations and NEPA's "rule of reason," an agency's environmental-review obligations are commensurate with the agency's ability to reasonably foresee and meaningfully evaluate environmental impacts in the context of the proposed action. DOE reasonably determined that it could not meaningfully forecast specific indirect effects from natural-gas production induced by LNG exports or from foreign consumption of U.S.-exported LNG. To inform its Section 3(a)

public-interest review, however, DOE went further and prepared an Environmental Addendum that detailed the nature of environmental impacts associated with accelerated natural-gas production, and a Life Cycle Analysis that examined the potential effects of LNG exports on global greenhouse-gas emissions. Together, the EIS, Environmental Addendum, and Life Cycle Analysis constitute a "hard look" at relevant environmental issues.

First, DOE acknowledged that export authorizations might accelerate growth in domestic natural-gas production and incrementally increase associated environmental impacts. In the Environmental Addendum, DOE detailed the nature of such impacts and disclosed that certain effects could be significant. DOE reasonably declined to speculate about specific impacts because such impacts cannot be reasonably foreseen. As DOE explained, LNG export levels depend on long-term conditions in foreign and domestic markets that are highly uncertain, and export demand could induce production in any natural-gas-producing area across the lower 48-states. Without the ability to reasonably predict the magnitude and location of induced natural-gas production, DOE reasonably concluded that it cannot meaningfully predict associated impacts to specific water bodies, air-quality control regions, and land-use planning areas. Second, DOE reasonably declined to speculate about the potential impacts of induced coal consumption because long-term impacts of coal consumption are highly uncertain and DOE cannot meaningfully forecast the extent and location of any export-induced coal consumption. Third, the GHG Life

Cycle Analysis adequately evaluated the upstream and downstream greenhouse-gas emissions from producing, transporting, and exporting LNG. Finally, DOE reasonably considered the Environmental Addendum and other analyses in its environmental review of Cheniere's proposal.

2. DOE reasonably found that authorizing Cheniere's LNG exports was not inconsistent with the public interest under the Natural Gas Act. *See W. Va. Pub. Servs. Comm'n v. U.S. Dept. of Energy*, 681 F.2d 847, 856 (D.C. Cir. 1982). DOE reasonably concluded that potential adverse environmental effects do not outweigh economic and international-trade benefits or rebut the statutory presumption favoring exports, given the uncertainty surrounding environmental impacts and society's ability to more effectively address such effects directly through federal, state, and local regulation.

STANDARD OF REVIEW

When exercising judicial review under Section 19 of the Natural Gas Act (15 U.S.C. § 717r(b)), including to determine whether DOE orders under the Act comply with NEPA, this Court applies the familiar standard set out in the Administrative Procedure Act, 5 U.S.C. § 706(2)(A). *See N. Baja Pipeline, LLC v. FERC*, 483 F.3d 819, 821 (D.C. Cir. 2007); *see also Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1313 (D.C. Cir. 2014). Under that standard, DOE's order must be upheld unless "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). An agency's decision ordinarily will be deemed arbitrary only if the

agency failed to consider the relevant factors or made a "clear error of judgment." *Del. Riverkeeper*, 753 F.3d at 1313 (quoting *Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto. Ins.*, 463 U.S. 29, 43 (1983)).

When reviewing an agency's NEPA compliance, this Court asks whether the agency has "adequately considered and disclosed the environmental impacts of its actions." *Del. Riverkeeper*, 753 F.3d at 1313; *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97–98 (1983). If this Court determines that DOE has taken a "hard look" at the relevant potential impacts of its action, the Court's review is complete. *See Myersville Citizens for a Rural Cmty., Inc. v. FERC*, 783 F.3d 1301, 1322 (D.C. Cir. 2015). This Court may not "second-guess substantive decisions committed to [DOE's] discretion," and must likewise defer to DOE's "informed discretion" as to matters within its technical expertise. *Del. Riverkeeper*, 753 F.3d at 1313 (quoting *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 377 (1989)).

ARGUMENT

I. DOE COMPLIED WITH NEPA AND TOOK A HARD LOOK AT THE FORESEEABLE POTENTIAL ENVIRONMENTAL IMPACTS OF CHENIERE'S PROPOSED LNG EXPORTS.

DOE's review and approval of the Corpus Christi Project EIS and its preparation of the Environmental Addendum and GHG Life Cycle Analysis show that DOE took a hard look at the environmental impacts—including indirect and cumulative effects—of authorizing LNG exports from the Corpus Christi Terminal. Only after examining the complete cycle of natural-gas production and various

hypothetical scenarios did DOE conclude that some environmental impacts, such as the specific volume of domestic LNG that will be exported and the market's response to increased LNG exports, were not reasonably foreseeable under NEPA. *See* 40 C.F.R. §§ 1508.7, 1508.8(b) (requiring study of only those cumulative and indirect effects that are reasonably foreseeable). As explained below, that finding was reasonable and entitled to deference.

A. DOE's NEPA review is governed by the "rule of reason."

As the Supreme Court has explained, NEPA is governed by a "rule of reason, which ensures that agencies determine whether and to what extent" to evaluate environmental impacts "based on the usefulness of any new potential information to the decisionmaking process." *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 767 (2004) (internal quotation and citation omitted); *see also Myersville Citizens*, 783 F.3d at 1322–23. This "rule of reason" informs an agency's evaluation of indirect effects. *See Pub. Citizen*, 541 U.S. at 767–68. An agency's duty to consider potential impacts that are not closely connected to a proposed action is commensurate with the agency's ability to meaningfully forecast and control such impacts. *Id.* Whether a potential effect is too remote to be meaningfully evaluated under NEPA is a question entrusted to agency discretion. *See Nat'l Wildlife Fed'n v. Appalachian Reg'l Comm'n*, 677 F.2d 883, 888 (D.C. Cir. 1981).

This Court has previously cited *Public Citizen* when holding that FERC was not required, when authorizing LNG terminal expansion, to evaluate the indirect

environmental effects of natural-gas production that might be induced by export authorization. *See EarthReports*, 828 F.3d at 956; *Sierra Club v. Fed. Energy Reg. Comm'n* ("*Freeport*"), 827 F.3d 36, 47 (D.C. Cir. 2016). The Court held that because DOE alone possesses the legal authority to authorize LNG exports, FERC need not evaluate export-induced impacts, regardless of whether such impacts are reasonably foreseeable. *EarthReports*, 828 F.3d at 956; *Freeport*, 827 F.3d at 47. The Supreme Court reached a similar conclusion in *Public Citizen*, 541 U.S. at 767–68, regarding the Department of Transportation's NEPA obligations after finding that the agency lacked legal authority to prevent certain environmental impacts.

Contrary to Sierra Club's arguments (Pet.Br. 65–66), it does not follow that NEPA's "rule of reason" is limited to environmental effects that an agency "has no ability categorically to prevent," 541 U.S. at 768. Under this Court's precedents, the rule of reason guides "every aspect" of an agency's NEPA compliance, *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 201 (D.C. Cir. 1991), including agency decisions "setting limits to the scope" of environmental review, *Nat'l Wildlife Fed'n*, 677 F.2d at 889. Moreover, NEPA's implementing regulations require an agency to evaluate indirect effects "caused by the action" but "later in time or farther removed in distance" only if such impacts are "still reasonably foreseeable." 40 C.F.R. § 1508.8(b). As the Supreme Court explained in *Public Citizen*, NEPA requires "a reasonably close causal relationship" between the relevant agency action and studied environmental effects like "the familiar doctrine of proximate cause." *Pub. Citizen*,

541 U.S. at 767 (quoting *Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)).

When a proposed action implicates environmental effects that are causally related but in an attenuated fashion, the effects farther removed in space and time not only become increasingly difficult to foresee, they also become increasingly wider in scope and thus more burdensome and difficult to evaluate. Further, the likelihood of long-term outcomes are often subject to multiple intervening forces, including federal and state regulatory actions that will be subject to their own environmental reviews. Under the "rule of reason," the nature of the causal relationship between potential impacts and agency action is relevant not only for determining whether a NEPA obligation arises, but also for determining the type and extent of analysis that would be "useful" to the agency's decisions. *See Pub. Citizen*, 541 U.S. at 767.

Here, DOE did not limit its environmental review to its participation as a cooperating agency on FERC's Project EIS. DOE also prepared the Environmental Addendum and the Life Cycle Analysis to inform its public-interest review under NGA § 3 with respect to the potential environmental effects of authorizing LNG exports. *See EarthReports*, 828 F.3d at 956; *Freeport*, 827 F.3d at 47 (noting DOE's authority over exports). DOE made the Addendum and Life Cycle Analysis available for public review and comment in the same manner as the EIS. [AR58; AR64]; *see also* 40 C.F.R. § 1506.6 (requiring public involvement in the NEPA process). The Addendum and Life Cycle Analysis informed DOE's decisions regarding the proper

scope of its NEPA analysis, *see* [AR111 at 4–6], in satisfaction of NEPA's twin goals, *see Sierra Club,* 803 F.3d at 36–37. On the record as a whole, DOE took the requisite hard look at all foreseeable potential impacts.

In particular, DOE acknowledged that the Cheniere authorization, cumulatively with other LNG export authorizations, might induce additional domestic natural-gas production, and DOE fully disclosed the nature of these indirect "upstream" impacts. But because the extent of enhanced natural-gas production is uncertain and such production might come from any number of sources across the continental United States, DOE reasonably concluded that site-specific upstream impacts (*i.e.*, quantifiable impacts on regional air quality or particular water sources from induced natural-gas production) are not reasonably foreseeable. DOE acknowledged that LNG exports will contribute both to "upstream" greenhouse-gas emissions (in production and processing) and "downstream" emissions (in transport and consumption as fuel). DOE reasonably disclosed such emissions and considered their potential impact on global climate change in the Lifecycle Analysis. Consistent with FERC's determination, DOE also reasonably found that terminal construction and operation impacts will be insignificant. Sierra Club fails to show any fundamental flaw in this analysis.

B. DOE took a hard look at the potential environmental impacts of export-induced gas production.

1. DOE reasonably limited its review to qualitative analyses.

Contrary to Sierra Club's argument (Pet.Br. 37–55), DOE sufficiently acknowledged and evaluated potential environmental impacts from natural-gas production that might be induced by authorizing LNG exports from Cheniere. As DOE explained, U.S. natural-gas production is expected to rise with or without exports. [AR77 at 2]. Because DOE cannot predict, with any reasonable certainty, the extent to which LNG export authorizations will add to increased production, or where such production and associated environmental impacts might occur, DOE did not "attempt to identify or characterize the incremental environmental impacts" of cumulative export authorizations. [AR95 at 193–94; *see also* AR77 at 2]. In other words, DOE did not attempt to quantify the marginal additional increase in natural gas development or the air emissions and other environmental impacts associated with this incremental increase in production that would not occur but for the proposed LNG exports. [AR95 at 194; AR111 at 17].

But in its Environmental Addendum, DOE acknowledged that LNG exports could "accelerate" unconventional natural-gas development, [AR77 at 2], and provided a comprehensive statement of environmental impacts that might occur as a result of increased shale-gas development and other development of unconventional sources. For example, with respect to air quality, DOE disclosed that natural-gas

wells and other components of production are significant sources of nitrogen oxides and volatile organic compounds, which are precursors to ground-level ozone, a harmful air pollutant. [AR77 at 20–32]. DOE also explained that increased natural-gas production might "create new or expanded…non-attainment areas" not meeting national ambient air quality standards for ozone under the Clean Air Act and might complicate state implementation plans for bringing air quality into compliance with national standards. [*Id.* at 27–29, 32]. DOE conducted similar analyses for water resources, [*id.* at 10–20], greenhouse-gas emissions, [*id.* at 33–45], and land-use impacts [*id.* at 56–66].

In its brief, Sierra Club does not identify a single environmental issue relating to natural-gas production that DOE did not identify and consider in the EIS or Environmental Addendum. Rather, Sierra Club argues that DOE's largely qualitative analysis was insufficient and that DOE must quantify specific upstream (production) effects and downstream (consumption) effects, even though DOE determined that specific effects cannot be reasonably forecast. Sierra Club's arguments do not withstand scrutiny.

2. DOE reasonably accounted for uncertainty in LNG export levels.

Sierra Club claims that DOE arbitrarily concluded that aggregate LNG export amounts were not sufficiently foreseeable. Pet.Br. 40–43. Sierra Club cites several different hypothetical export amounts found in DOE's studies and says that DOE, in not specifically selecting one of those projections as a reasonably foreseeable amount

has "effectively determined that *no* exports were reasonably foreseeable." Pet.Br. 43. Sierra Club misstates DOE's decision.

First, DOE cannot simply rely upon the amount authorized in its Authorization Order. As Sierra Club notes (Pet.Br. 41), DOE authorized Cheniere to export no more than 767 Bcf/yr of natural gas to non-FTA nations. [AR95 at 214]. But DOE has received additional applications for similar export authority from other export terminals. [*Id.* at 206]. DOE has approved some of these applications and others remain pending.[10]

Second, DOE did not deny the possibility and foreseeability of LNG exports in the amounts authorized or projected. In the Environmental Addendum, which studied the potential effects of all types of unconventional natural-gas production, DOE acknowledged EIA's projection in the 2014 Annual Energy Outlook that U.S. LNG exports will reach 3500 Bcf/yr (approximately 9.6 Bcf/d) by 2029. [AR77 at 43]; *see also* Pet.Br. 42. DOE noted in the Authorization Order that it had issued seven final authorizations for LNG exports totaling 8.61 Bcf/d of natural gas—a volume "within the range of scenarios analyzed in the EIA and NERA studies." [AR95 at 206].

[10] DOE has received applications for authority to export LNG to non-FTA nations in an aggregate amount equivalent to approximately 51.13 Bcf/d of natural gas. *See* https://energy.gov/sites/prod/files/2017/01/f34/Summary%20of%20LNG%20Export%20Applications.pdf (list as of January 19, 2017). DOE has granted final non-FTA authorizations in an aggregate amount equivalent to approximately 16.99 Bcf/d of natural gas. *See id.*

DOE observed, however, that authorizing LNG exports does not guarantee completed construction and full operation of export facilities, nor does it determine the ultimate amount of LNG exports that market conditions will favor. [AR95 at 194; AR111 at 18–19]. DOE cited its past experience with LNG import facilities where only 20% of proposed facilities were built. [AR95 at 194]. DOE's statement was not, as Sierra Club implies (Pet.Br. 41–43), a decision by DOE to refuse to confront the uncertainty "inherent in such predictions" (Pet.Br. 12) or to disregard upstream impacts not "guaranteed" to follow LNG export authorization. DOE discussed natural-gas-production impacts *qualitatively* in the Environmental Addendum. This analysis included projections of overall natural-gas production increases, [AR77 at 5], and other numerical measures illustrating the potential scale of impacts, [*see id.* at 11–12, 21–22, 26–30, 33–37, 39–44, 48–50, 66–67]. DOE's statement distinguishing export authorization from actual exports was merely part of DOE's explanation for declining to quantify the specific impacts associated with export-induced production. [AR95 at 194].

As DOE explained, the price competitiveness of U.S. LNG in foreign energy markets depends on numerous factors that are inherently difficult to predict, such as the pace of technological change, U.S. and international economic conditions, potential market disruptions, and U.S. and foreign energy and environmental regulations. *See* [AR95 at 71, 207]. For these reasons, long-term market projections are "highly uncertain." [AR23 at 3]. Moreover, DOE explained that uncertainty in

projecting long-term LNG export levels was not the only reason it was unable to meaningfully quantify domestic environmental impacts from LNG export authorizations. DOE also explained that environmental effects—other than potential climate-change impacts—are best examined at the regional or local level. *See* [AR95 at 194]. And DOE cited fundamental uncertainties in its ability meaningfully to predict, from any projected increase in national natural-gas production, where new domestic production wells will be located, and thus where environmental impacts will occur. [*Id.*; AR111 at 17–18]. Sierra Club's objection that "exports are foreseeable" misconstrues DOE's analysis. Pet.Br. 40–43.

Sierra Club misstates DOE's argument, citing the principle that uncertainty does not excuse an agency's NEPA obligations. Pet.Br. 40–42. Indeed, the cases Sierra Club cites make clear that an agency cannot avoid the task of reasonable forecasting. *See id.* (citing *Del. Riverkeeper*, 753 F.3d at 1310 and *Blue Ridge Envtl. Def. League v. Nuclear Reg. Comm'n*, 716 F.3d 183, 188 (D.C. Cir. 2013)). Here, however, DOE has not shirked its NEPA responsibilities—it simply determined that a *qualitative* analysis would provide sufficiently meaningful information. *See State v. U.S. Nuclear Reg. Comm'n*, 824 F.3d 1012, 1020 (D.C. Cir. 2016) (finding that a qualitative analysis was "sufficient to comply with NEPA"). Given the fundamental uncertainties regarding both the extent of foreign demand for U.S-exported LNG and where production to meet such demand might occur, DOE reasonably determined that it need not attempt to *quantify* environmental impacts at the local or regional level

where such impacts would occur because such analyses would be highly speculative. [AR95 at 194]; *see also WildEarth Guardians*, 738 F.3d at 309–10 (upholding NEPA analysis when the agency explained that global impacts of potential climate effects were too speculative); *Lee v. U.S. Air Force*, 354 F.3d 1229, 1240–41 (10th Cir. 2004) (deferring to the Air Force's conclusory NEPA finding that it was "impossible to quantify" the economic impacts of increased overflights). Indeed, even if DOE "could have provided a more rigorous quantitative evaluation,…it does not follow that [DOE's] qualitative analysis was arbitrary and capricious." *W. Watersheds Project v. Bureau of Land Mgmt.*, 721 F.3d 1264, 1277 (10th Cir. 2013). The largely qualitative analysis conducted by DOE was reasonable in context and sufficient to achieve NEPA's purpose of informed decision-making. *Id.*

The Tenth Circuit recently addressed a similar argument in *Diné Citizens Against Ruining Our Env't v. Jewell* ("*Diné CARE*"), 839 F.3d 1276 (10th Cir. 2016). The plaintiffs in *Diné CARE* argued that the Bureau of Land Management violated NEPA when it failed to quantify the difference in environmental impacts of horizontal drilling and multistage fracturing as compared to vertical drilling. *Id.* at 1284. The Tenth Circuit found that the agency's analysis of the qualitative environmental impacts satisfied NEPA. *Id.* (finding no evidence that "horizontal drilling and multi-stage fracturing may give rise to different types—rather than just different levels—of environmental harms when compared to the traditional vertical drilling and hydraulic fracturing techniques"). Like the analyses in *Diné CARE*, DOE reasonably focused

its inquiry on the qualitative impacts of authorizing LNG exports while acknowledging that various external factors can affect the degree of such impacts. As explained in the following section, DOE's analysis of these qualitative effects satisfies NEPA's "hard-look" requirement.

3. DOE reasonably declined to attempt to model regional or local impacts.

Sierra Club fails to support its argument that DOE acted arbitrarily in declining to attempt to model or otherwise quantify regional or localized impacts based on uncertain projections of national LNG export volumes. Pet.Br. 47–55. Even if Cheniere's LNG exports could reasonably be tied to a particular producing area, it does not follow that the Cheniere authorization would be a "but for" cause of increased or new production in such area. Depending on the domestic market, other export avenues, and the cost of producing natural gas in other areas, this natural gas might be produced regardless of Cheniere's non-FTA export authorization. *See* [AR81 at 4-212]. Because natural gas is fungible, *see Ctr. for Sustainable Econ. v. Jewell*, 779 F.3d 588, 607 (D.C. Cir. 2015), and because there is an interconnected national pipeline network [AR95 at 41], DOE could not reasonably assume otherwise. Rather, to determine that a proposed export authorization is a probable "but for" cause of natural-gas production in any particular locale, DOE would need to ascertain "marginal production" or "price elasticity" at the wellhead or local level, a matter DOE determined would be impossible to identify with any confidence. [AR111 at 19]. Alternatively, Sierra Club's argument "would compel the Department, before

acting on an application to export natural gas, to undertake an [EIS] or [EA] that examines separately the environmental impacts of natural gas production in every producing region in the country." [*Id.* at 20]. DOE concluded that such a requirement "would impose an unreasonable and unrealistic burden on the Department's ability to act on the LNG export applications before it," as DOE is required to do under the Natural Gas Act. *Id.*

DOE also explained why play-level modeling, even if such production among such plays was foreseeable (*cf.* Pet.Br. 47–51), would not meaningfully inform environmental review of LNG exportation. Shale plays and other unconventional sources of natural gas are spread throughout the lower-48 states. [AR77 at 6]. An interconnected pipeline system covers these states, making every natural-gas-producing region a potential source for meeting export-induced natural-gas demand. [AR111 at 20]. Additionally, shale plays "overlap and stretch for thousands of square miles below diverse subsurface environments." [*Id.* at 19]. As a result, "[a]n economic model that estimated induced production across each shale play would provide no information about where any incremental production would arise within those shale plays and would not render the environmental impacts of such production reasonably foreseeable in a manner that would facilitate meaningful analysis." [*Id.* at 20]; *see also* [AR77 at 10, 12, 14, 32, 45]. Moreover, requiring DOE to perform a NEPA analysis for every producing region in the country would "impose an unreasonable and unrealistic burden." [AR111 at 20].

Nevertheless, DOE did "mak[e] observations about regional differences where appropriate." [AR95 at 148]. For example, DOE provided play-level data in the Environmental Addendum when addressing the impact of hydraulic fracturing on surface-water supplies. The Authorization Order called attention to these findings for the Eagle Ford Shale play in Texas. [*Id.* at 150]. DOE cited such data as part of an analysis showing that shale-gas production has a very small impact on water supplies relative to other energy production or uses. [AR77 at 12]. DOE also explained that its Addendum was based on existing literature on natural-gas production. [*Id.* at 2, 12, 14]. DOE's decision to present play-level data, when available, in the course of discussing impacts on water usage does not mean that DOE acted unreasonably in declining to conduct other play-level modeling where obtaining such information would "impose an unreasonable and unrealistic burden on the Department" and/or provide no meaningful information for DOE's analysis. [AR111 at 20 & n.84].

Sierra Club contends that existing play-level forecasts would "enable DOE to reasonably foresee impacts on regional ozone levels." Pet.Br. 51. Sierra Club references a study of ozone levels in the San Antonio area in 2006. Pet.Br. 52; [AR75-31]. That study used data collected from a high ozone episode in 2006 to create a photochemical model that represented the meteorological conditions commonly associated with ozone exceedance days and emissions inventories from the area. [AR75-31 at iv]. Using this model, the study projected different emissions scenarios for oil and gas production on the Eagle Ford Shale play, including low- and high-

production scenarios. [*Id.* at iv–v]. The results showed that all scenarios met the ozone NAAQS that were in force at the time of the study (and at the time of DOE's decision).[11] [*Id.* at 6-31]. Moreover, contrary to Sierra Club's assertion (Pet.Br. 52), FERC did respond to Sierra Club's citation of the San Antonio study. *See* [AR81 at I-117, 4-212–13]. FERC explained that other factors like state permitting, market forces, and gas availability made it impossible to identify which shale-gas play, if any, would source LNG exports from the Corpus Christi Terminal. [*Id.* at 4-212].

Furthermore, the studies and other analyses in the Addendum show that DOE took a hard look at ozone impacts. DOE specifically disclosed that emissions from increased natural-gas development might "create new or expanded ozone non-attainment areas" and might complicate state implementation plans for bringing air quality into compliance with national standards. [AR77 at 2–-29, 32]. Given DOE's inability to reasonably predict where and to what extent ozone issues might arise in areas outside the vicinity of the Corpus Christi Terminal, DOE reasonably determined that additional quantitative modeling of air impacts would not be sufficiently reliable to aid DOE's public-interest review. *See* [AR111 at 20 & n.84]; *see also Pub. Citizen*, 541 U.S. at 767.

[11] At the time, the 8-hour ozone NAAQS was 75 parts per billion (ppb). *See* [AR75-31 at 6-31]. As of December 28, 2015, EPA lowered that standard to 70 ppb. *See* 80 Fed. Reg. 65,292 (Oct. 26, 2015).

In so doing, DOE observed that it lacks authority to directly regulate the environmental effects of natural-gas production. [AR111 at 21]. Sierra Club responds (Pet.Br. 65) by citing *Calvert Cliffs' Coordinating Comm. Inc. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1122–23 (D.C. Cir. 1971), for the proposition that an agency cannot rely on the regulatory authorities of other agencies to disregard its own NEPA obligations. But *Calvert Cliffs* is inapposite. The Court in that case set aside an Atomic Energy Commission rule governing NEPA review of nuclear power-plant applications. *See id.* at 1122–27. The rule classified any plant emission or other operational aspect governed by a federal, state, or regional environmental quality standard as "insignificant" and exempt from NEPA review. *Id.* at 1122. This Court held that the Atomic Energy Commission could not abdicate NEPA review *solely* on the grounds that effects are subject to direct environmental regulation by other federal and state agencies. *Id.* at 1122–23. Here, DOE did nothing of the sort. Rather, DOE merely observed that potential actions by local, state, and federal authorities in response to proposed new and existing natural-gas production are among the many unknowable and unpredictable variables that render long-term projections about export-induced natural-gas production highly uncertain.

Finally, Sierra Club contends that DOE failed to follow CEQ regulations concerning an agency's obligations under NEPA when information is incomplete or unavailable. Pet.Br. 50, 53, 69. But that provision applies only "[w]hen an agency is evaluating reasonably foreseeable significant adverse effects on the human

environment." 40 C.F.R. § 1502.22. As explained in the preceding two sections, DOE reasonably concluded that precise quantities of exported LNG and the environmental effects of incremental increases in LNG exports were not reasonably foreseeable.

4. DOE did not disregard "local" impacts.

Contrary to Sierra Club's argument (Pet.Br. 54–55), DOE did not disregard potential local effects. First, DOE participated in the preparation of the Project EIS, which thoroughly addressed potential impacts from the construction and operation of the Corpus Christi Terminal and pipeline. Second, DOE studied the general *nature* of potential localized impacts caused by increased LNG exports. For example, the GHG Life Cycle Analysis looked at local impacts of greenhouse-gas emissions "begin[ning] with extraction of natural gas or coal." [AR85 at 1]. DOE explained that it could not quantify impacts *specific* to any one locality without knowing the location in question. [AR77 at 2; AR111 at 19]. DOE explained that too many variables preclude localized predictions, including local geology, existing infrastructure, land use patterns, and local regulations. [AR111 at 19]. And even if DOE had such data, any projections made from such a small sample unit would be unreliable when applied more broadly. *Id.* By disclosing and explaining these uncertainties, DOE complied with NEPA. DOE's broad, qualitative examination of the nature of potential environmental effects from natural-gas production is therefore sufficient.

C. DOE took a hard look at potential impacts from induced coal consumption.

In addition to projecting heightened natural-gas production, EIA's export studies predict a marginal shift in the domestic electric-power sector from natural-gas generation to coal-fired generation. [AR23 at 6, 12, 18]. EIA's studies also modeled potential changes in domestic CO_2 emissions, including changes related to coal consumption, *see supra* pages 9–11. But DOE did not attempt to model impacts on regional air quality or other natural systems because the causal relationship between LNG export authorizations and domestic coal consumption is "even more attenuated" than natural-gas production, leaving greater uncertainty regarding the projected effect. [AR111 at 23–24]. Illustrating this uncertainty, DOE observed that EIA's projections on coal use are already outdated, because they do not account for regulatory changes, which may or may not eventually take effect.[12] [*Id.* at 24 & n.94].

Sierra Club does not directly address DOE's conclusion that the potential environmental impacts of induced coal production are too attenuated for analysis under NEPA. Instead, Sierra Club faults DOE's citation to the Clean Power Plan, which was a secondary reason that DOE provided as to why specific projections in

[12] Sierra Club's citation to the Supreme Court's stay of the Clean Power Plan (Pet.Br. 57) only highlights the fact that regulations on greenhouse gas emissions—and analyses affected by such regulations—are in limbo. *See also* [AR111 at 33] (explaining that "the study of life cycle GHG emissions…is constantly evolving").

the 2012 EIA study[13] were outdated. [*Id.* at 24 & nn.93–94]. In fact, after alleging that CO_2 emissions from switching to coal are "more than six times that of new gas production," Pet.Br. 58, Sierra Club acknowledges that DOE did address downstream effects of "export-induced coal use's emissions" of certain pollutants, Pet.Br. 59, including energy-related CO_2 emissions, [AR23 at 19]. Moreover, DOE considered and evaluated the upstream emissions from natural-gas production for LNG exports in the Addendum and GHG Life Cycle Analysis. [AR95 at 154–55, 184].

Sierra Club similarly misses the mark in arguing that DOE cannot consider the potential mitigating effect of EPA's Clean Power Plan and other regulations that post-date EIA's modeling. Sierra Club contends that a scenario modeled in EIA's 2014 outlook analysis anticipated recent regulatory changes, but still projected an increase in CO_2 emissions from induced coal use relating to LNG exports. Pet.Br. 57–58. Even if Sierra Club's understanding of the scenario were accurate (EIA's 2014 study was released before the Clean Power Plan and does not reference EPA regulations, *see* [AR56 at 5]), this observation does not show any deficiency in the modeling of CO_2 emissions from coal. The EIA studies model and disclose CO_2 emissions from coal, and DOE considered such emissions in its final order in this case. *See* [AR95 at 77].

[13] Sierra Club claims that DOE cannot simultaneously find the 2012 EIA study to be "fundamentally sound" with respect to projected price impacts of LNG exports while also expressing skepticism about the present accuracy of the study's predictions concerning coal consumption due to new regulations on coal-fired power plants. Pet.Br. 56–57. But Sierra Club has not shown that regulatory changes would necessarily affect both measures in the same way.

D. DOE took a hard look at the climate impacts of induced gas production.

Sierra Club also fails to show any fundamental flaw in DOE's overall consideration of potential climate change impacts. Although DOE did not calculate the precise number of annual upstream emissions from the specifically authorized LNG exports and/or from LNG exports projected by EIA, *cf.* Pet.Br. 45–47, 62–63, DOE did disclose substantial information to inform the public and DOE decision-makers of the impact of LNG-export authorizations on greenhouse-gas emissions. This Court has upheld similar analyses. In *WildEarth Guardians*, 738 F.3d at 302, the Court found that the Bureau of Land Management complied with NEPA when leasing public lands for coal mining operations even though the agency did not "discuss specific global impacts that would result from additional emissions." *Id.* at 309. The Court agreed with the agency that "given the state of the science, it is not possible to associate specific actions with the specific global impacts such as potential climate effects." *Id.*

As in *WildEarth Guardians*, DOE considered the foreseeable climate impacts of induced gas production. As DOE explained, FERC's EIS calculated greenhouse-gas emissions from both the construction and operation of the Corpus Christi Terminal and pipeline, including emissions from the combustion of natural gas in the liquefaction process. [AR95 at 42]. The EIS concluded that, if the Project is constructed and operated in accordance with applicable laws, best practices, and

proposed mitigation, adverse environmental impacts from increased CO_2 emissions in Texas would not be significant. [*Id.* at 42–43]. In addition, the EIA studies include modeling of energy-related CO_2 emissions across a range of possible LNG export volumes, from 6 Bcf/d to 20 Bcf/d. *See* [AR23 at 19; AR83 at 20–21]. As for methane emissions from the extraction and transport of natural gas, the Environmental Addendum details the nature of such emissions and provides a range of estimates of emission rates. *See* [AR77 at 33–44]. The Life Cycle Analysis then quantifies total cradle-to-grave greenhouse-gas emissions (methane and CO_2) from LNG exports, per MWh of electricity produced. [AR62].

Moreover, climate change is a *global* issue and the export of LNG occurs on a *global* scale. For these reasons, DOE reasonably elected to undertake a Life Cycle Analysis of greenhouse-gas emissions from LNG exports, instead of quantifying domestic emissions only, as Sierra Club advocated. *See* [AR111 at 36]. Indeed, an analysis restricted to domestic emissions arguably would have been arbitrary for disregarding a relevant and important consideration. In contrast, DOE's Life Cycle Analysis accounted for all upstream and downstream greenhouse-gas emissions from LNG production. [AR62 at 1–2].

DOE reasonably relied on the GHG Life Cycle Analysis to address global emissions. Sierra Club contends (Pet.Br. 60–63) that DOE acted arbitrarily in declining to provide a comparative analysis of emissions from other fuel sources, including renewable energy sources. This argument misunderstands DOE's analysis.

DOE reasonably observed that U.S. LNG exports would immediately compete with other sources of natural gas existing in foreign markets (*i.e.*, foreign-sourced LNG and pipeline deliveries from Russia) because it is the same commodity. [AR111 at 38]. This is true whether or not natural gas is already prevalent in particular export markets. *Id.* It is not, however, "valid to assume that natural gas would compete directly with renewables in all nations given the potential intervention of public policy and the different role these resources play in an integrated electric system." [*Id.* at 40]. Sierra Club provides no reason for believing that U.S. LNG exports would significantly displace renewables and suggests no particular additional analysis that would address that question. As for coal, it is far-and-away the predominant source of power in China and India. For these reasons, DOE reasonably determined that a comparison between lifecycle emissions of exported LNG and regional coal would be more useful for evaluating potential impacts on global climate change. *See* [AR95 at 203–04; AR111 at 30].

E. DOE's decision was reasonable and properly informed by the Environmental Addendum and other analyses.

Sierra Club claims that DOE's environmental analyses are neither a substitute for nor "cure the deficiencies in the EIS." Pet.Br. 67. Sierra Club also suggests that DOE relied solely on FERC's EIS such that any deficiency in the EIS is fatal to DOE's NEPA compliance. *Id.* Sierra Club misstates DOE's position. DOE explained that it did not think NEPA required the comprehensive analyses concerning

the indirect impacts of increased LNG exports that is contained in DOE's Environmental Addendum, but it nonetheless considered the Addendum in its environmental analysis out of an abundance of caution. [AR97 at 28258]. In other words, DOE went above and beyond NEPA's requirements by examining both the EIS and Addendum to inform its decision on Cheniere's export application.

Moreover, NEPA regulations clearly allow environmental documents to incorporate analyses found in other materials that have been made available for public notice and comment, like the Addendum. 40 C.F.R. § 1502.21 (allowing incorporation by reference in an EIS). And although the GHG Life Cycle Analysis does not, by itself, satisfy any NEPA requirements, [AR95 at 183], DOE properly referenced the study, which was subject to notice and comment [AR64, AR68], in its Authorization Order. Therefore, while Sierra Club is correct that the Addendum and GHG Life Cycle Analysis do not substitute for an EIS, they properly played a role in DOE's overall environmental analysis and assisted DOE in making an informed decision under NGA § 3(a).

Here, DOE adopted FERC's EIS examining the impacts of constructing and operating the Corpus Christi Terminal and pipeline, and the Addendum explored the qualitative effects of increasing the nation's LNG exports. While the Addendum is not limited to the effects of Cheniere's export proposal (*see* Pet.Br. 68), the EIS contains site-specific analyses. For example, although the Addendum did not offer alternatives or mitigation measures specific to the Project (Pet.Br. 68–70), the EIS did

contain such analyses, *see* [AR81 at 3-1–3-33, 5-9–5-25; AR95 at 195]. As to the potential environmental impacts of marginal increases in natural-gas production, DOE reasonably declined any project-specific analyses. Such impacts are subject to numerous external forces and uncertain variables; it therefore follows that separating out those incremental impacts specific to Cheniere's exports in any meaningful way is beyond DOE's capability.

Finally, Sierra Club claims that DOE violated NEPA by failing to "discuss the impact of exports on U.S. climate policies." Pet.Br. 70. But DOE properly balanced climate policies from the executive branch, the Climate Action Plan (JAXX), and the statutory presumption in the Natural Gas Act that exporting natural gas is in the public interest, 15 U.S.C. § 717b(a). The EIS for the Corpus Christi Project contains extensive analyses of the Project's potential impacts on greenhouse-gas emissions. [AR81 at 4-96–4-139]. FERC imposed 104 environmental mitigation measures on its authorization of the Project [AR85 at 43–60], and DOE included those conditions in its export authorization [AR95 at 216]. DOE's Authorization Order also took note of the Climate Action Plan, [AR95 at 196 n.286], acknowledging that new regulations may implicate LNG exports. Any subsequent changes to these plans and regulations—whether by court decision or otherwise—would not impact the adequacy of DOE's NEPA analysis accompanying the Authorization Order.

II. DOE COMPLIED WITH THE NATURAL GAS ACT

Section 3(a) of the Natural Gas Act establishes a presumption in favor of authorizing LNG exports "unless there is an express finding that the proposed activity would not be consistent with the public interest," *W. Va. Pub. Servs. Comm'n*, 681 F.2d at 856. Unlike other sections of the Act, § 3(a) does *not* require "a positive finding that the proposed activity will be in the public interest." *Id.* Instead, Sierra Club must make "an affirmative showing of inconsistency with the public interest." *Panhandle Producers and Royalty Owners Ass'n v. Econ. Regulatory Admin.*, 822 F.2d 1105, 1111 (D.C. Cir. 1987). Sierra Club failed to make such a showing.

A. DOE considered the potential for unequal distribution of exports' impacts.

Sierra Club contends that DOE violated the Natural Gas Act by declining to examine the specific distribution of the positive and negative effects of LNG exportation. Pet.Br. 72–75. Despite the fact that NGA § 3(a) places the burden on Sierra Club to rebut the presumption that exports are in the public interest, Sierra Club presents no such evidence. *See* Pet.Br. 74 (stating the "*NERA* provided no analyses of how many households" would benefit from energy investments (emphasis added)). In contrast, DOE cited both economic and non-economic benefits of LNG exportation, including "the creation of jobs in the United States through the promotion of exports"; "[a]n efficient, transparent international market for natural gas with diverse sources of supply"; and "improve[d] energy security for many U.S. allies

and trading partners." [AR95 at 191]. DOE explained that it considered the potential negative economic impacts that Sierra Club identifies, but ultimately determined that the net benefits to the U.S. economy from exporting LNG were in the public interest. [AR111 at 43–46]. DOE further noted that Sierra Club did not present "sufficiently compelling evidence" to suggest the harms of LNG exportation would outweigh the "economic and strategic benefits to the United States and our allies." [AR95 at 115, 191]. Therefore, Sierra Club failed to meet the burden imposed under the Natural Gas Act of showing that the distribution of impacts from LNG exports is inconsistent with the public interest. *See Panhandle Producers*, 822 F.2d at 1111.

B. DOE reasonably concluded that the benefits of LNG exportation outweigh potential environmental harms.

Echoing its NEPA arguments, Sierra Club contends that the failure to quantify adverse environmental effects also dooms DOE's public-interest review under Section 3(a) of the Natural Gas Act. Pet.Br. 75–77. Sierra Club claims that DOE could not reasonably weigh the expected economic benefits of LNG exports against potential adverse environmental effects—or reasonably describe the environmental effects as "modest"—without specifying what the environmental costs weigh. *Id.* This argument fails for three reasons.

First, the direct effects of constructing and operating the Corpus Christi Terminal, including the effects of liquefying natural gas for export, were quantified in the EIS. *See supra* pages 12–16. DOE only declined to quantify cumulative indirect

environmental impacts that DOE found were not reasonably foreseeable. Given the broad terms of the Natural Gas Act, 15 U.S.C. § 717b(a), and the "general presumption favoring [export] authorization," *W. Va. Pub. Servs. Comm'n*, 681 F.2d at 856, the Natural Gas Act cannot be construed as imposing environmental-review obligations greater than those under NEPA.

Second, Sierra Club cites no authority (and there is none) for the proposition that the Natural Gas Act requires a formal cost-benefit analysis where all impacts, beneficial and adverse, must be expressed in common (*e.g.* monetary) terms and tallied to determine a policy outcome. DOE's duty was to reasonably identify and evaluate the factors relevant to the public interest—including economic, environmental, energy security, and international trade considerations—not to use an identical methodology for each factor considered.

Third, as Sierra Club acknowledges, projected export volumes and associated production increases are fairly described as "incremental" and "modest" relative to the natural-gas production and production increases that are projected to occur with or without exports to non-FTA nations. DOE disclosed potential impacts, including, *e.g.*, that new gas developments could lead to new ozone nonattainment areas. [AR77 at 26–32]. But DOE also explained that NGA § 3(a) is "too blunt an instrument" for effectively addressing such concerns. [AR95 at 197]. Given the economic and international-trade benefits of allowing LNG exports, DOE concluded that the "public interest is better served," by controlling the adverse environmental effects of

natural-gas development directly using federal, state, and local regulation. [*Id.* at 196]. This conclusion is manifestly reasonable and entitled to deference from the Court.

CONCLUSION

For the foregoing reasons, this Court should deny the petition for review and affirm DOE's orders.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE WITH FEDERAL RULE OF APPELLATE PROCEDURE 32(A)

I hereby certify that this brief complies with the requirements of Fed. R. App. P. 32(a)(5) and (6) because it has been prepared in 14-point Garamond, a proportionally spaced font.

I further certify that this brief complies with the type-volume limitation set out in the Court's November 3, 2016, Notice of Court's Implementation of Amendments to the Federal Rules of Appellate Procedure—which states that "[t]he revised word limits for briefs prepared using a computer will apply to briefs submitted pursuant to schedules that commence after November 30, 2016"—because the brief contains 13,998 words, excluding the parts of the brief exempted under Fed. R. App. P. 32(f) and D.C. Cir. R. 32(e)(1), according to the count of Microsoft Word.

s/ *Emily Polachek*
EMILY A. POLACHEK

CERTIFICATE OF SERVICE

I hereby certify that on January 30, 2017, I electronically filed the foregoing brief and attached addendum with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit by using the appellate CM/ECF system.

The participants in the case are registered CM/ECF users and service will be accomplished by the appellate CM/ECF system.

s/ *Emily Polachek*
EMILY A. POLACHEK

STATUTORY AND REGULATORY ADDENDUM

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§ 706. Scope of review

Currentness

To the extent necessary to decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. The reviewing court shall--

(1) compel agency action unlawfully withheld or unreasonably delayed; and

(2) hold unlawful and set aside agency action, findings, and conclusions found to be--

(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;

(B) contrary to constitutional right, power, privilege, or immunity;

(C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;

(D) without observance of procedure required by law;

(E) unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of an agency hearing provided by statute; or

(F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.

In making the foregoing determinations, the court shall review the whole record or those parts of it cited by a party, and due account shall be taken of the rule of prejudicial error.

CREDIT(S)
(Pub.L. 89-554, Sept. 6, 1966, 80 Stat. 393.)

Notes of Decisions (3755)

5 U.S.C.A. § 706, 5 USCA § 706

United States Code Annotated
Title 15. Commerce and Trade
Chapter 15B. Natural Gas (Refs & Annos)

15 U.S.C.A. § 717n

§ 717n. Process coordination; hearings; rules of procedure

Effective: August 8, 2005
Currentness

(a) Definition

In this section, the term "Federal authorization"--

(1) means any authorization required under Federal law with respect to an application for authorization under section 717b of this title or a certificate of public convenience and necessity under section 717f of this title; and

(2) includes any permits, special use authorizations, certifications, opinions, or other approvals as may be required under Federal law with respect to an application for authorization under section 717b of this title or a certificate of public convenience and necessity under section 717f of this title.

(b) Designation as lead agency

(1) In general

The Commission shall act as the lead agency for the purposes of coordinating all applicable Federal authorizations and for the purposes of complying with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

(2) Other agencies

Each Federal and State agency considering an aspect of an application for Federal authorization shall cooperate with the Commission and comply with the deadlines established by the Commission.

(c) Schedule

(1) Commission authority to set schedule

The Commission shall establish a schedule for all Federal authorizations. In establishing the schedule, the Commission shall--

(A) ensure expeditious completion of all such proceedings; and

(B) comply with applicable schedules established by Federal law.

(2) Failure to meet schedule

If a Federal or State administrative agency does not complete a proceeding for an approval that is required for a Federal authorization in accordance with the schedule established by the Commission, the applicant may pursue remedies under section 717r(d) of this title.

(d) Consolidated record

The Commission shall, with the cooperation of Federal and State administrative agencies and officials, maintain a complete consolidated record of all decisions made or actions taken by the Commission or by a Federal administrative agency or officer (or State administrative agency or officer acting under delegated Federal authority) with respect to any Federal authorization. Such record shall be the record for--

(1) appeals or reviews under the Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.), provided that the record may be supplemented as expressly provided pursuant to section 319 of that Act; or

(2) judicial review under section 717r(d) of this title of decisions made or actions taken of Federal and State administrative agencies and officials, provided that, if the Court determines that the record does not contain sufficient information, the Court may remand the proceeding to the Commission for further development of the consolidated record.

(e) Hearings; parties

Hearings under this chapter may be held before the Commission, any member or members thereof, or any representative of the Commission designated by it, and appropriate records thereof shall be kept. In any proceeding before it, the Commission in accordance with such rules and regulations as it may prescribe, may admit as a party any interested State, State commission, municipality or any representative of interested consumers or security holders, or any competitor of a party to such proceeding, or any other person whose participation in the proceeding may be in the public interest.

(f) Procedure

All hearings, investigations, and proceedings under this chapter shall be governed by rules of practice and procedure to be adopted by the Commission, and in the conduct thereof the technical rules of evidence need not be applied. No informality in any hearing, investigation, or proceeding or in the manner of taking testimony shall invalidate any order, decision, rule, or regulation issued under the authority of this chapter.

CREDIT(S)

(June 21, 1938, c. 556, § 15, 52 Stat. 829; Aug. 8, 2005, Pub.L. 109-58, Title III, § 313(a), 119 Stat. 688.)

Notes of Decisions (30)

United States Code Annotated
Title 42. The Public Health and Welfare
Chapter 84. Department of Energy (Refs & Annos)
Subchapter II. Establishment of Department

42 U.S.C.A. § 7135

§ 7135. Energy Information Administration

Effective: January 17, 2014
Currentness

(a) Establishment; appointment of Administrator; compensation; qualifications; duties

(1) There shall be within the Department an Energy Information Administration to be headed by an Administrator who shall be appointed by the President, by and with the advice and consent of the Senate, and who shall be compensated at the rate provided for in level IV of the Executive Schedule under section 5315 of Title 5. The Administrator shall be a person who, by reason of professional background and experience, is specially qualified to manage an energy information system.

(2) The Administrator shall be responsible for carrying out a central, comprehensive, and unified energy data and information program which will collect, evaluate, assemble, analyze, and disseminate data and information which is relevant to energy resource reserves, energy production, demand, and technology, and related economic and statistical information, or which is relevant to the adequacy of energy resources to meet demands in the near and longer term future for the Nation's economic and social needs.

(b) Delegation of functions

The Secretary shall delegate to the Administrator (which delegation may be on a nonexclusive basis as the Secretary may determine may be necessary to assure the faithful execution of his authorities and responsibilities under law) the functions vested in him by law relating to gathering, analysis, and dissemination of energy information (as defined in section 796 of Title 15) and the Administrator may act in the name of the Secretary for the purpose of obtaining enforcement of such delegated functions.

(c) Functions of Director of Office of Energy Information and Analysis

In addition to, and not in limitation of the functions delegated to the Administrator pursuant to other subsections of this section, there shall be vested in the Administrator, and he shall perform, the functions assigned to the Director of the Office of Energy Information and Analysis under part B of the Federal Energy Administration Act of 1974 [15 U.S.C.A. § 790 et seq.], and the provisions of sections 53(d) and 59 thereof [15 U.S.C.A. §§ 790b(d), 790h] shall be applicable to the Administrator in the performance of any function under this chapter.

(d) Collection or analysis of information and preparation of reports without approval

The Administrator shall not be required to obtain the approval of any other officer or employee of the Department in connection with the collection or analysis of any information; nor shall the Administrator be required, prior to publication, to obtain the approval of any other officer or employee of the United States with respect to the substance of any statistical or forecasting technical reports which he has prepared in accordance with law.

(e) Annual audit

The Energy Information Administration shall be subject to an annual professional audit review of performance as described in section 55 of part B of the Federal Energy Administration Act of 1974.

(f) Furnishing information or analysis to any other administration, commission, or office within Department

The Administrator shall, upon request, promptly provide any information or analysis in his possession pursuant to this section to any other administration, commission, or office within the Department which such administration, commission, or office determines relates to the functions of such administration, commission, or office.

(g) Availability of information to public

Information collected by the Energy Information Administration shall be cataloged and, upon request, any such information shall be promptly made available to the public in a form and manner easily adaptable for public use, except that this subsection shall not require disclosure of matters exempted from mandatory disclosure by section 552(b) of Title 5. The provisions of section 796(d) of Title 15, and section 5916 of this title, shall continue to apply to any information obtained by the Administrator under such provisions.

(h) Identification and designation of "major energy producing companies"; format for financial report; accounting practices; filing of financial report; annual report of Department; definitions; confidentiality

(1)(A) In addition to the acquisition, collection, analysis, and dissemination of energy information pursuant to this section, the Administrator shall identify and designate "major energy-producing companies" which alone or with their affiliates are involved in one or more lines of commerce in the energy industry so that the energy information collected from such major energy-producing companies shall provide a statistically accurate profile of each line of commerce in the energy industry in the United States.

(B) In fulfilling the requirements of this subsection the Administrator shall--

(i) utilize, to the maximum extent practicable, consistent with the faithful execution of his responsibilities under this chapter, reliable statistical sampling techniques; and

(ii) otherwise give priority to the minimization of the reporting of energy information by small business.

(2) The Administrator shall develop and make effective for use during the second full calendar year following August 4, 1977, the format for an energy-producing company financial report. Such report shall be designed to allow comparison

on a uniform and standardized basis among energy-producing companies and shall permit for the energy-related activities of such companies--

(A) an evaluation of company revenues, profits, cash flow, and investments in total, for the energy-related lines of commerce in which such company is engaged and for all significant energy-related functions within such company;

(B) an analysis of the competitive structure of sectors and functional groupings within the energy industry;

(C) the segregation of energy information, including financial information, describing company operations by energy source and geographic area;

(D) the determination of costs associated with exploration, development, production, processing, transportation, and marketing and other significant energy-related functions within such company; and

(E) such other analyses or evaluations as the Administrator finds is necessary to achieve the purposes of this chapter.

(3) The Administrator shall consult with the Chairman of the Securities and Exchange Commission with respect to the development of accounting practices required by the Energy Policy and Conservation Act [42 U.S.C.A. § 6201 et seq.] to be followed by persons engaged in whole or in part in the production of crude oil and natural gas and shall endeavor to assure that the energy-producing company financial report described in paragraph (2) of this subsection, to the extent practicable and consistent with the purposes and provisions of this chapter, is consistent with such accounting practices where applicable.

(4) The Administrator shall require each major energy-producing company to file with the Administrator an energy-producing company financial report on at least an annual basis and may request energy information described in such report on a quarterly basis if he determines that such quarterly report of information will substantially assist in achieving the purposes of this chapter.

(5) A summary of information gathered pursuant to this section, accompanied by such analysis as the Administrator deems appropriate, shall be included in the annual report of the Department required by subsection (a) [1] of section 7267 of this title.

(6) As used in this subsection the term--

(A) "energy-producing company" means a person engaged in:

(i) ownership or control of mineral fuel resources or nonmineral energy resources;

(ii) exploration for, or development of, mineral fuel resources;

(iii) extraction of mineral fuel or nonmineral energy resources;

(iv) refining, milling, or otherwise processing mineral fuels or nonmineral energy resources;

(v) storage of mineral fuels or nonmineral energy resources;

(vi) the generation, transmission, or storage of electrical energy;

(vii) transportation of mineral fuels or nonmineral energy resources by any means whatever; or

(viii) wholesale or retail distribution of mineral fuels, nonmineral energy resources or electrical energy;

(B) "energy industry" means all energy-producing companies; and

(C) "person" has the meaning as set forth in section 796 of Title 15.

(7) The provisions of section 1905 of Title 18 shall apply in accordance with its terms to any information obtained by the Administration pursuant to this subsection.

(i) Manufacturers energy consumption survey

(1) The Administrator shall conduct and publish the results of a survey of energy consumption in the manufacturing industries in the United States at least once every four years and in a manner designed to protect the confidentiality of individual responses. In conducting the survey, the Administrator shall collect information, including--

(A) quantity of fuels consumed;

(B) energy expenditures;

(C) fuel switching capabilities; and

(D) use of nonpurchased sources of energy, such as solar, wind, biomass, geothermal, waste by-products, and cogeneration.

(2) This subsection does not affect the authority of the Administrator to collect data under section 52 of the Federal Energy Administration Act of 1974 (15 U.S.C. 790a).

(j) Collection and publication of survey results

(1) The Administrator shall annually collect and publish the results of a survey of electricity production from domestic renewable energy resources, including production in kilowatt hours, total installed capacity, capacity factor, and any other measure of production efficiency. Such results shall distinguish between various renewable energy resources.

(2) In carrying out this subsection, the Administrator shall--

(A) utilize, to the maximum extent practicable and consistent with the faithful execution of his responsibilities under this chapter, reliable statistical sampling techniques; and

(B) otherwise take into account the reporting burdens of energy information by small businesses.

(3) As used in this subsection, the term "renewable energy resources" includes energy derived from solar thermal, geothermal, biomass, wind, and photovoltaic resources.

(k) Survey procedure

Pursuant to section 52(a) of the Federal Energy Administration Act of 1974 (15 U.S.C. 790a(a)), the Administrator shall--

(1) conduct surveys of residential and commercial energy use at least once every four years, and make such information available to the public;

(2) when surveying electric utilities, collect information on demand-side management programs conducted by such utilities, including information regarding the types of demand-side management programs being operated, the quantity of measures installed, expenditures on demand-side management programs, estimates of energy savings resulting from such programs, and whether the savings estimates were verified; and

(3) in carrying out this subsection, take into account reporting burdens and the protection of proprietary information as required by law.

(l) Data collection

In order to improve the ability to evaluate the effectiveness of the Nation's energy efficiency policies and programs, the Administrator shall, in carrying out the data collection provisions of subsections (i) and (k) of this section, consider--

(1) expanding the survey instruments to include questions regarding participation in Government and utility conservation programs;

(2) expanding fuel-use surveys in order to provide greater detail on energy use by user subgroups; and

(3) expanding the scope of data collection on energy efficiency and load-management programs, including the effects of building construction practices such as those designed to obtain peak load shifting.

(m) Renewable fuels survey

(1) In order to improve the ability to evaluate the effectiveness of the Nation's renewable fuels mandate, the Administrator shall conduct and publish the results of a survey of renewable fuels demand in the motor vehicle fuels market in the United States monthly, and in a manner designed to protect the confidentiality of individual responses. In conducting the survey, the Administrator shall collect information both on a national and regional basis, including each of the following:

(A) The quantity of renewable fuels produced.

(B) The quantity of renewable fuels blended.

(C) The quantity of renewable fuels imported.

(D) The quantity of renewable fuels demanded.

(E) Market price data.

(F) Such other analyses or evaluations as the Administrator finds are necessary to achieve the purposes of this section.

(2) The Administrator shall also collect or estimate information both on a national and regional basis, pursuant to subparagraphs (A) through (F) of paragraph (1), for the 5 years prior to implementation of this subsection.

(3) This subsection does not affect the authority of the Administrator to collect data under section 52 of the Federal Energy Administration Act of 1974 (15 U.S.C. 790a).

CREDIT(S)

(Pub.L. 95-91, Title II, § 205, Aug. 4, 1977, 91 Stat. 572; Pub.L. 99-509, Title III, § 3101(a), Oct. 21, 1986, 100 Stat. 1888; Pub.L. 102-486, Title I, § 171, Oct. 24, 1992, 106 Stat. 2864; Pub.L. 109-58, Title XV, § 1508, Aug. 8, 2005, 119 Stat. 1083; Pub.L. 113-76, Div. D, Title III, § 315, Jan. 17, 2014, 128 Stat. 177.)

Notes of Decisions (4)

Footnotes

1 So in original. Section 7267 of this title was enacted without a subsec. (a).

42 U.S.C.A. § 7135, 42 USCA § 7135

Code of Federal Regulations
Title 40. Protection of Environment
Chapter V. Council on Environmental Quality
Part 1502. Environmental Impact Statement (Refs & Annos)

40 C.F.R. § 1502.21

§ 1502.21 Incorporation by reference.

Currentness

Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment. Material based on proprietary data which is itself not available for review and comment shall not be incorporated by reference.

SOURCE: 43 FR 55994, Nov. 29, 1978, unless otherwise noted.

AUTHORITY: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), Sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609), and Executive Order 11514 (Mar. 5, 1970, as amended by Executive Order 11991, May 24, 1977).

Notes of Decisions (23)

Current through December 8, 2016; 81 FR 88972.

End of Document

Code of Federal Regulations
Title 40. Protection of Environment
Chapter V. Council on Environmental Quality
Part 1506. Other Requirements of NEPA (Refs & Annos)

40 C.F.R. § 1506.6

§ 1506.6 Public involvement.

Currentness

Agencies shall:

(a) Make diligent efforts to involve the public in preparing and implementing their NEPA procedures.

(b) Provide public notice of NEPA-related hearings, public meetings, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected.

(1) In all cases the agency shall mail notice to those who have requested it on an individual action.

(2) In the case of an action with effects of national concern notice shall include publication in the Federal Register and notice by mail to national organizations reasonably expected to be interested in the matter and may include listing in the 102 Monitor. An agency engaged in rulemaking may provide notice by mail to national organizations who have requested that notice regularly be provided. Agencies shall maintain a list of such organizations.

(3) In the case of an action with effects primarily of local concern the notice may include:

(i) Notice to State and areawide clearinghouses pursuant to OMB Circular A–95 (Revised).

(ii) Notice to Indian tribes when effects may occur on reservations.

(iii) Following the affected State's public notice procedures for comparable actions.

(iv) Publication in local newspapers (in papers of general circulation rather than legal papers).

(v) Notice through other local media.

(vi) Notice to potentially interested community organizations including small business associations.

(vii) Publication in newsletters that may be expected to reach potentially interested persons.

(viii) Direct mailing to owners and occupants of nearby or affected property.

(ix) Posting of notice on and off site in the area where the action is to be located.

(c) Hold or sponsor public hearings or public meetings whenever appropriate or in accordance with statutory requirements applicable to the agency. Criteria shall include whether there is:

(1) Substantial environmental controversy concerning the proposed action or substantial interest in holding the hearing.

(2) A request for a hearing by another agency with jurisdiction over the action supported by reasons why a hearing will be helpful. If a draft environmental impact statement is to be considered at a public hearing, the agency should make the statement available to the public at least 15 days in advance (unless the purpose of the hearing is to provide information for the draft environmental impact statement).

(d) Solicit appropriate information from the public.

(e) Explain in its procedures where interested persons can get information or status reports on environmental impact statements and other elements of the NEPA process.

(f) Make environmental impact statements, the comments received, and any underlying documents available to the public pursuant to the provisions of the Freedom of Information Act (5 U.S.C. 552), without regard to the exclusion for interagency memoranda where such memoranda transmit comments of Federal agencies on the environmental impact of the proposed action. Materials to be made available to the public shall be provided to the public without charge to the extent practicable, or at a fee which is not more than the actual costs of reproducing copies required to be sent to other Federal agencies, including the Council.

SOURCE: 43 FR 56000, Nov. 29, 1978, unless otherwise noted.

AUTHORITY: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609), and Executive Order 11514 (Mar. 5, 1970, as amended by Executive Order 11991, May 24, 1977).

Notes of Decisions (67)

Current through December 8, 2016; 81 FR 88972.

End of Document

Code of Federal Regulations
Title 40. Protection of Environment
Chapter V. Council on Environmental Quality
Part 1508. Terminology and Index (Refs & Annos)

40 C.F.R. § 1508.5

§ 1508.5 Cooperating agency.

Currentness

Cooperating agency means any Federal agency other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major Federal action significantly affecting the quality of the human environment. The selection and responsibilities of a cooperating agency are described in § 1501.6. A State or local agency of similar qualifications or, when the effects are on a reservation, an Indian Tribe, may by agreement with the lead agency become a cooperating agency.

SOURCE: 43 FR 56003, Nov. 29, 1978, unless otherwise noted.

AUTHORITY: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609), and Executive Order 11514 (Mar. 5, 1970, as amended by Executive Order 11991, May 24, 1977).

Notes of Decisions (5)

Current through December 8, 2016; 81 FR 88972.

End of Document

Code of Federal Regulations
Title 40. Protection of Environment
Chapter V. Council on Environmental Quality
Part 1508. Terminology and Index (Refs & Annos)

40 C.F.R. § 1508.16

§ 1508.16 Lead agency.

Currentness

Lead agency means the agency or agencies preparing or having taken primary responsibility for preparing the environmental impact statement.

SOURCE: 43 FR 56003, Nov. 29, 1978, unless otherwise noted.

AUTHORITY: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609), and Executive Order 11514 (Mar. 5, 1970, as amended by Executive Order 11991, May 24, 1977).

Notes of Decisions (8)

Current through December 8, 2016; 81 FR 88972.

End of Document