UNITED STATES OF AMERICA

DEPARTMENT OF ENERGY

OFFICE OF FOSSIL ENERGY

	)	
LAKE CHARLES EXPORTS, LLC	)	FE DOCKET NO. 16-110-LNG
	)	

OPINION AND ORDER GRANTING LONG-TERM, MULTI-CONTRACT
AUTHORIZATION TO EXPORT LIQUEFIED NATURAL GAS
BY VESSEL FROM THE LAKE CHARLES TERMINAL
IN LAKE CHARLES, LOUISIANA,
TO FREE TRADE AGREEMENT AND
NON-FREE TRADE AGREEMENT NATIONS

DOE/FE ORDER NO. 4011

JUNE 29, 2017

TABLE OF CONTENTS

FREQUENTLY USED ACRONYMS

AEO	Annual Energy Outlook
API	American Petroleum Institute
Bcf/d	Billion Cubic Feet per Day
Bcf/yr	Billion Cubic Feet per Year
CPP	Clean Power Plan
DOE	U.S. Department of Energy
EIA	U.S. Energy Information Administration
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FE	Office of Fossil Energy, U.S. Department of Energy
FERC	Federal Energy Regulatory Commission
FTA	Free Trade Agreement
GHG	Greenhouse Gas
LCE	Lake Charles Exports, LLC
LNG	Liquefied Natural Gas
Mcf	Thousand Cubic Feet
MMBtu	Million British Thermal Units
MMmt	Million Metric Tons
mtpa	Million Metric Tons per Annum
NEPA	National Environmental Policy Act
NERA	NERA Economic Consulting
NETL	National Energy Technology Laboratory
NGA	Natural Gas Act
NOx	Nitrogen Oxides
VOC	Volatile Organic Compound

I. INTRODUCTION

On August 15, 2016, Lake Charles Exports, LLC (LCE) filed an export application (Application)[1] with the Office of Fossil Energy of the Department of Energy (DOE/FE) requesting authority to export domestically produced liquefied natural gas (LNG) under section 3 of the Natural Gas Act (NGA).[2] Specifically, LCE requests a consolidated long-term, multi-contract authorization to export LNG as follows:

(i) Under section 3(c) of the NGA, to nations with which the United States has entered into a free trade agreement (FTA) requiring national treatment for trade in natural gas, and with which trade is not prohibited by U.S. law or policy (FTA countries),[3] for a period of 25 years commencing on the earlier of the date of first export or 10 years from the date of this Order, and

(ii) Under section 3(a) of the NGA, to any other country with which trade is not prohibited by U.S. law or policy (non-FTA countries),[4] for a period of 20 years to commence on the earlier of the date of first export or seven years from the date of this Order.[5]

LCE seeks to export LNG to both FTA and non-FTA countries in a volume equivalent to 121 billion cubic feet per year (Bcf/yr) of natural gas (0.33 Bcf per day (Bcf/d)), meaning that the non-FTA and FTA volumes would not be additive to one another.[6]

LCE seeks to export this LNG, on its own behalf and as agent for other entities that hold title to the LNG at the time of export, by vessel from the Lake Charles Liquefaction Project

---

[1] Lake Charles Exports, LLC, Application for Long-Term Authorization to Export Liquefied Natural Gas to Free Trade Agreement and Non-Free Trade Agreement Countries, FE Docket No. 16-110-LNG (Aug. 15, 2016) [hereinafter LCE App.].

[2] The authority to regulate the imports and exports of natural gas, including liquefied natural gas, under section 3 of the NGA (15 U.S.C. § 717b) has been delegated to the Assistant Secretary for FE in Redelegation Order No. 00-006.02 issued on November 17, 2014.

[3] 15 U.S.C. § 717b(c). The United States currently has FTAs requiring national treatment for trade in natural gas with Australia, Bahrain, Canada, Chile, Colombia, Dominican Republic, El Salvador, Guatemala, Honduras, Jordan, Mexico, Morocco, Nicaragua, Oman, Panama, Peru, Republic of Korea, and Singapore. FTAs with Israel and Costa Rica do not require national treatment for trade in natural gas.

[4] 15 U.S.C. § 717b(a).

[5] LCE App. at 1, 3-4.

[6] *See id*. at 3-4.

(Liquefaction Project). LCE's affiliate, Lake Charles LNG Export Company, LLC (Lake Charles LNG Export), is constructing the Liquefaction Project at the existing Lake Charles Terminal in Lake Charles, Louisiana (Lake Charles Terminal), as discussed below.[7]

Currently, LCE holds two authorizations to export domestically produced LNG from the Lake Charles Terminal to FTA and non-FTA countries. Under DOE/FE Order Nos. 2987[8] and 3324-A,[9] LCE is authorized to export LNG in a volume equivalent to 730 Bcf/yr of natural gas (2.0 Bcf/d) to FTA countries for a period of 25 years and to non-FTA countries for a period of 20 years, respectively.[10] This approved export volume is the equivalent of 15 million metric tons per annum (mtpa) of LNG.

Previously, in December 2015, the Federal Energy Regulatory Commission (FERC) authorized Lake Charles LNG Export and another affiliate (Lake Charles LNG Company, LLC) to construct and operate the Liquefaction Project, so that natural gas could be received by pipeline at the Lake Charles Terminal and liquefied for export.[11] FERC approved a maximum design production capacity for the Liquefaction Project of 16.45 mtpa of LNG,[12] which we find is equivalent to approximately 851 Bcf/yr of natural gas.[13] In so doing, FERC observed:

---

[7] *See id*. at 2.
[8] *Lake Charles Exports, LLC*, DOE/FE Order No. 2987, FE Docket No. 11-59-LNG, Order Granting Long-Term Authorization to Export Liquefied Natural Gas by Vessel from the Lake Charles Terminal to Free Trade Agreement Nations (July 22, 2011).
[9] *Lake Charles Exports, LLC*, DOE/FE Order No. 3324-A, FE Docket No. 11-59-LNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Lake Charles Terminal to Non-Free Trade Agreement Nations (July 29, 2016).
[10] Because the source of LNG for these authorizations is the Lake Charles Terminal, the volumes authorized for export in these orders (Order Nos. 2987 and 3324-A) are not additive.
[11] *See Trunkline Gas Co., LLC, et al.*, Order Granting Section 3 and Section 7 Authorizations and Approving Abandonment, 153 FERC ¶ 61,300, at PP 1-4 (Dec. 17, 2015) [hereinafter 2015 FERC Order], *order denying reh'g*, 155 FERC ¶ 61,328 (2016). Trunkline Gas Company, LCC filed a related application in a separate FERC docket, seeking authorization to abandon, construct, operate, and modify certain interstate natural gas pipelines. The dockets were joined for purposes of FERC's review.
[12] *See id*. at P 10 n.13.
[13] In converting Bcf to million metric tons, DOE/FE uses a conversion factor of 51.75 per million metric tons.

> The NGA section 3 authorization … reflects the design production capacity (16.45 MTPA of liquefied natural gas) of the Liquefaction Project, while DOE/FE's authorized quantity (15.0 MTPA of LNG or 730 Bcf/y) reflects allowance for design margins, maintenance, and outages. Additional authorization may be sought in the future from DOE/FE for the design production capacity of the Liquefaction Project.[14]

In this proceeding, LCE requests an additional export volume of 121 Bcf/yr of natural gas (1.45 mtpa of LNG) "to align the volumes authorized for export to FTA and non-FTA countries with the liquefaction production capacity of the Lake Charles Liquefaction Project" (16.45 mtpa of LNG), as approved by FERC.[15] The requested authorization would require no new construction or modification of the Liquefaction Project facilities.[16]

In this consolidated Order, DOE/FE grants LCE's Application and authorizes the requested export volume of 121 Bcf/yr (0.33 Bcf/d) to both FTA and non-FTA countries. Specifically, DOE/FE grants the FTA portion of the Application under NGA section § 3(c). Section 3(c) was amended by section 201 of the Energy Policy Act of 1992 (Pub. L. 102-486) to require that FTA applications "shall be deemed to be consistent with the public interest" and granted "without modification or delay."[17] The FTA portion of the Application falls within NGA section 3(c) and, therefore, DOE/FE approves the requested FTA authorization without modification or delay. Accordingly, none of the public interest analysis discussed below applies to the FTA authorization herein.

As to the non-FTA portion of the Application, DOE/FE has reviewed the record in this proceeding under NGA section 3(a) and grants that requested authorization. *See infra* § IV

---

[14] *See* 2015 FERC Order at P 10 n.13.
[15] LCE App. at 2.
[16] *See id*.
[17] 15 U.S.C. § 717b(c).

(Standard of Review for Non-FTA Authorization). On November 10, 2016, DOE/FE published a Notice of Application for the requested non-FTA export authorization in the *Federal Register*.[18] The Notice of Application called on interested persons to submit protests, motions to intervene, notices of intervention, and comments by January 9, 2017. The American Petroleum Institute (API) filed an unopposed motion to intervene in this proceeding. No protests or comments were filed. Therefore, the Application is uncontested.[19]

Because the exports of LNG will originate from the same facility—the Lake Charles Terminal—the export volumes of 121 Bcf/yr (0.33 Bcf/d) for the FTA and non-FTA authorizations in this Order are not additive. LCE is thus authorized to export a combined total volume of 851 Bcf/yr of natural gas (2.33 Bcf/d) from the Lake Charles Terminal to FTA and non-FTA countries as follows:

(i) <u>FTA countries – total of 851 Bcf/yr:</u>

- 730 Bcf/yr under Order No. 2987 (FE Docket No. 11-59-LNG), and
- 121 Bcf/yr under this Order, No. 4011 (FE Docket No. 16-110-LNG).

(ii) <u>Non-FTA countries – total of 851 Bcf/yr:</u>

- 730 Bcf/yr under Order No. 3324-A (FE Docket No. 11-59-LNG), and
- 121 Bcf/yr under this Order, No. 4011 (FE Docket No. 16-110-LNG).

The non-FTA export volume approved in this Order—equivalent to 0.33 Bcf/d of natural gas—brings DOE/FE's cumulative total of approved non-FTA exports of LNG and compressed natural gas (CNG) to 21.33 Bcf/d of natural gas.

[18] Lake Charles Exports, LLC, Application for Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Nations, 81 Fed. Reg. 79,005 (Nov. 10, 2016).
[19] DOE finds that the requirement for public notice of applications in 10 C.F.R. Part 590 is applicable only to non-FTA applications under NGA section 3(a).

Concurrently with the issuance of this Order, DOE/FE is issuing a consolidated long-term FTA and non-FTA export authorization, DOE/FE Order No. 4010, to Lake Charles LNG Export in FE Docket No. 16-109-LNG.[20] That order authorizes Lake Charles LNG Export to export the same volume of LNG as this Order (121 Bcf/yr) from the Lake Charles Terminal to non-FTA countries.

Additionally, Lake Charles LNG Export holds two existing long-term authorizations to export LNG from the Lake Charles Terminal. Under DOE/FE Order Nos. 3252-A[21] and 3868,[22] Lake Charles LNG Export is authorized to export LNG in a volume equivalent to 730 Bcf/yr of natural gas (2.0 Bcf/d) to FTA and non-FTA countries, respectively. These export volumes are not additive to LCE's existing FTA and non-FTA volumes in Order Nos. 2987 and 3324-A. Therefore, under all the FTA and non-FTA authorizations granted to LCE and Lake Charles LNG Export to date, in no event may the export volumes under any combination of authorization holders and/or destination countries exceed the maximum production capacity of the Lake Charles Liquefaction Project (16.45 mtpa of LNG, or 851 Bcf/yr of natural gas), as approved in FERC's 2015 Order.

II. BACKGROUND FOR NON-FTA AUTHORIZATION

A. DOE's LNG Export Studies

In 2011, DOE/FE engaged the U.S. Energy Information Administration (EIA) and NERA Economic Consulting (NERA) to conduct a two-part study of the economic impacts of U.S. LNG

[20] *Lake Charles LNG Export Co., LLC*, DOE/FE Order No. 4010, FE Docket No. 16-109-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Lake Charles Terminal in Calcasieu Parish, Louisiana, to Non-Free Trade Agreement Nations (June 29, 2017).

[21] *Lake Charles LNG Export Co., LLC (formerly Trunkline LNG Export, LLC)*, DOE/FE Order No. 3252, FE Docket No. 13-04-LNG, Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Lake Charles Terminal to Free Trade Agreement Nations (Mar. 7, 2013), *as amended* DOE/FE Order No. 3252-A (Mar. 18, 2015).

[22] *Lake Charles LNG Export Co., LLC*, DOE/FE Order No. 3868, FE Docket No. 13-04-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Lake Charles Terminal in Calcasieu Parish, Louisiana to Non-Free Trade Agreement Nations (July 29, 2016).

exports, which together was called the "2012 LNG Export Study." In relevant part, the 2012 EIA Study examined how prescribed levels of natural gas exports (at 6 Bcf/d and 12 Bcf/d) above baseline cases could affect domestic energy markets. The NERA Study projected that, across all scenarios studied—assuming either 6 Bcf/d or 12 Bcf/d of LNG export volumes—the United States would experience net economic benefits from allowing LNG exports. DOE/FE published a notice of availability of the 2012 LNG Export Study in the *Federal Register* for public comment.[23] DOE/FE responded to the public comments in connection with the LNG export proceedings identified in that notice.[24]

By May 2014, in light of the volume of LNG exports to non-FTA countries then-authorized by DOE/FE and the number of non-FTA export applications still pending, DOE/FE determined that an updated study was warranted to consider the economic impacts of exporting LNG from the lower-48 states to non-FTA countries.[25] On May 29, 2014, DOE announced plans to undertake new economic studies to gain a better understanding of how potentially higher levels of U.S. LNG exports—at levels between 12 and 20 Bcf/d of natural gas—would affect the public interest.[26]

DOE/FE commissioned two new macroeconomic studies. The first, *Effect of Increased Levels of Liquefied Natural Gas Exports on U.S. Energy Markets*, was performed by EIA and

---

[23] *See* 2012 LNG Export Study, 77 Fed. Reg. 73,627 (Dec. 11, 2012), *available at*: http://energy.gov/sites/prod/files/2013/04/f0/fr_notice_two_part_study.pdf (Notice of Availability of the LNG Export Study).

[24] *See, e.g.*, *Sabine Pass Liquefaction, LLC*, DOE/FE Order No. 3792, FE Docket No. 15-63-LNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel From the Sabine Pass LNG Terminal Located in Cameron Parish, Louisiana, to Non-Free Trade Agreement Nations, at 66-121 (Mar. 11, 2016).

[25] Because there is no natural gas pipeline interconnection between Alaska and the lower 48 states, DOE/FE generally views those LNG export markets as distinct. DOE/FE therefore focuses on LNG exports from the lower-48 states for purposes of determining macroeconomic impacts.

[26] *See* U.S. Dep't of Energy, Office of Fossil Energy, Request for an Update of EIA's January 2012 Study of Liquefied Natural Gas Export Scenarios, *available at*: http://energy.gov/fe/downloads/request-update-eia-s-january-2012-study-liquefied-natural-gas-export-scenarios (May 29, 2014) (memorandum from FE to EIA).

published in October 2014 (2014 EIA LNG Export Study or 2014 Study).[27] The 2014 Study assessed how specified scenarios of increased natural gas exports could affect domestic energy markets. At DOE's request, this 2014 Study served as an update of EIA's January 2012 study of LNG export scenarios and used baseline cases from EIA's 2014 *Annual Energy Outlook* (AEO 2014).[28]

The second study, *The Macroeconomic Impact of Increasing U.S. LNG Exports*, was performed jointly by the Center for Energy Studies at Rice University's Baker Institute and Oxford Economics under contract to DOE/FE (together, Rice-Oxford) and published in October 2015 (2015 LNG Export Study or 2015 Study).[29] The 2015 Study is a scenario-based assessment of the macroeconomic impact of levels of U.S. LNG exports, sourced from the lower-48 states, under different assumptions including U.S. resource endowment, U.S. natural gas demand, international LNG market dynamics, and other factors. The 2015 Study considered export volumes ranging from 12 to 20 Bcf/d of natural gas, as well as a high resource recovery case examining export volumes up to 28 Bcf/d of natural gas. The analysis covers the 2015 to 2040 time period.

On December 29, 2015, DOE/FE published a Notice of Availability of the 2014 and 2015 LNG Export Studies in the *Federal Register*, and invited public comment on those Studies.[30]

---

[27] U.S. Energy Information Administration, *Effect of Increased Levels of Liquefied Natural Gas Exports on U.S. Energy Markets* (Oct. 2014), *available at*: https://www.eia.gov/analysis/requests/fe/pdf/lng.pdf.
[28] Each Annual Energy Outlook (AEO) presents EIA's long-term projections of energy supply, demand, and prices. It is based on results from EIA's National Energy Modeling System (NEMS) model.
[29] Center for Energy Studies at Rice University Baker Institute and Oxford Economics, *The Macroeconomic Impact of Increasing U.S. LNG Exports* (Oct. 29, 2015), *available at*: http://energy.gov/sites/prod/files/2015/12/f27/20151113_macro_impact_of_lng_exports_0.pdf.
[30] U.S. Dep't of Energy, Macroeconomic Impacts of LNG Exports Studies; Notice of Availability and Request for Comments, 80 Fed. Reg. 81,300, 81,302 (Dec. 29, 2015) [hereinafter Notice of Availability] (providing a 45-day public comment period "to help inform DOE in its public interest determinations of the authorizations sought in the 29 non-FTA export applications identified …").

DOE received 38 comments in response to the Notice of Availability, of which 14 comments opposed the conclusions in the 2014 and 2015 Studies and/or LNG exports generally, 21 expressed support for the Studies, and three took no position. DOE/FE has carefully examined the comments in a series of non-FTA LNG export decisions,[31] and the precedents established in those decisions have been considered in our review of LCE's Application. *See infra* § VIII.B.

B. DOE's Environmental Studies

On June 4, 2014, DOE/FE issued two notices in the *Federal Register* proposing to evaluate different environmental aspects of the LNG production and export chain. First, DOE/FE announced that it had conducted a review of existing literature on potential environmental issues associated with unconventional natural gas production in the lower-48 states. The purpose of this review was to provide additional information to the public concerning the potential environmental impacts of unconventional natural gas exploration and production activities, including hydraulic fracturing. DOE/FE published its draft report for public review and comment, entitled *Draft Addendum to Environmental Review Documents Concerning Exports of Natural Gas from the United States* (Draft Addendum).[32] DOE/FE received comments on the Draft Addendum and, on August 15, 2014, issued the final Addendum with its response to the public comments contained in Appendix B.[33]

Second, DOE/FE commissioned the National Energy Technology Laboratory (NETL), a DOE applied research laboratory, to conduct an analysis calculating the life cycle greenhouse gas (GHG) emissions for LNG exported from the United States. The purpose of this analysis was to

[31] *See, e.g.*, *Lake Charles LNG Export Co., LLC*, DOE/FE Order No. 3868, at 43-81.
[32] Dep't of Energy, Draft Addendum to Environmental Review Documents Concerning Exports of Natural Gas From the United States, 79 Fed. Reg. 32,258 (June 4, 2014). DOE/FE announced the availability of the Draft Addendum on its website on May 29, 2014.
[33] Dep't of Energy, Addendum to Environmental Review Documents Concerning Exports of Natural Gas From the United States, 79 Fed. Reg. 48,132 (Aug. 15, 2014) [hereinafter Addendum]; *see also* http://energy.gov/fe/addendum-environmental-review-documents-concerning-exports-natural-gas-united-states.

determine: (i) how domestically-produced LNG exported from the United States compares with regional coal (or other LNG sources) for electric power generation in Europe and Asia from a life cycle GHG perspective, and (ii) how those results compare with natural gas sourced from Russia and delivered to the same markets via pipeline. DOE/FE published NETL's report entitled, *Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States* (LCA GHG Report).[34] DOE/FE also received public comment on the LCA GHG Report, and provides its response to those comments in this Order.

With respect to both the Addendum and the LCA GHG Report, DOE/FE has taken all public comments into consideration in this decision and has made those comments, as well as the underlying studies, part of the record in this proceeding. As explained below, neither the Addendum nor the LCA GHG Report are required by the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. § 4321 *et seq*., but DOE/FE believes that these documents will inform its review of the public interest under NGA section 3(a), and are responsive to concerns raised in other non-FTA export proceedings.

C. FERC Proceeding

Authorizations issued by FERC permitting the siting, construction, and operation of LNG export terminals are reviewed under NGA section 3(a) and (e), 15 U.S.C. § 717b(a), (e). FERC's approval process for such an application consists of a mandatory pre-filing process during which the environmental review required by NEPA commences,[35] as well as a formal application process.[36] On March 25, 2014, Lake Charles LNG and Lake Charles LNG Export began the

[34] Dep't of Energy, Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas From the United States, 79 Fed. Reg. 32,260 (June 4, 2014) [hereinafter LCA GHG Report]. DOE/FE announced the availability of the LCA GHG Report on its website on May 29, 2014.
[35] 18 C.F.R. § 157.21.
[36] *Id*. § 157.21(a)(2)(i-ii).

second part of FERC's approval process by filing the formal application to site, construct, and operate the Liquefaction Project.[37] DOE, among other federal agencies, participated as a cooperating agency in FERC's environmental review of the proposed Liquefaction Project and related facilities.[38]

FERC issued the draft EIS for the Liquefaction Project on April 10, 2015, followed by the final EIS on August 14, 2015.[39] The maximum production capacity of the Lake Charles Liquefaction Project evaluated in the final EIS was 16.45 mtpa of LNG, or 851 Bcf/yr of natural gas.[40] Among other issues, the final EIS addressed geology, soils, water resources, wetlands, wildlife and aquatic resources, air quality and noise, cumulative impacts, and alternatives.[41]

Based on its environmental analysis, FERC staff concluded that, "if the project is constructed and operated in accordance with applicable laws and regulations, the project will result in adverse environmental impacts."[42] However, "the impacts described in the final EIS will be adequately minimized with the implementation of the … proposed mitigation and [the FERC] staff's recommendations …."[43] FERC staff identified 96 environmental mitigation measures, which it recommended that FERC attach as conditions to any authorization of the Liquefaction Project and related proceeding.[44]

---

[37] 2015 FERC Order at P 1.
[38] *See id*. at P 88; 40 C.F.R. § 1501.6 ("In addition, any other Federal agency which has special expertise with respect to any environmental issue, which should be addressed in the statement may be a cooperating agency upon request of the lead agency."); *id*. § 1501.6(b) (responsibilities of a cooperating agency).
[39] Fed. Energy Regulatory Comm'n, Lake Charles Liquefaction Project Final Environmental Impact Statement, FERC Docket Nos. CP14-119-000, *et al*., at ES-2 (Aug. 2015) [hereinafter Final EIS]; *see also* Fed. Energy Regulatory Comm'n, Notice of Availability of the Draft Environmental Impact Statement for the Proposed Lake Charles Liquefaction Project, 80 Fed. Reg. 20,489 (Apr. 16, 2015); 2015 FERC Order at PP 89, 91.
[40] *See* Final EIS at ES-2.
[41] *See id*. at ES-3; 2015 FERC Order at P 91.
[42] *Id*. at P 92.
[43] *Id*.
[44] Final EIS at ES-13.

Thereafter, on December 17, 2015, FERC issued an order authorizing Lake Charles LNG and Lake Charles LNG to construct and operate the Liquefaction Project and convert its facilities and operations to NGA section 3 jurisdiction; and authorizing Trunkline Gas to abandon, construct, operate, and modify the related interstate pipeline facilities.[45] FERC rejected arguments that the final EIS failed to adequately analyze direct, cumulative, and indirect impacts on climate change from GHG emissions, and that FERC should consider the environmental impacts associated with increasing natural gas production that would be induced by operation of the Liquefaction Project.[46]

In granting the authorization, FERC "agree[d] with the conclusions presented in the final EIS and [found] that approval of the proposed facilities, if constructed and operated as described in the final EIS, is an environmentally acceptable action."[47] On this basis, FERC determined that 95 of the 96 environmental mitigation measures recommended in the final EIS were appropriate conditions for the authorizations, as set forth in Appendix B of FERC's Order.

On January 19, 2016, Sierra Club timely requested rehearing of the FERC Order. FERC granted rehearing for purposes of further consideration on February 16, 2016, and denied the rehearing request on June 30, 2016.[48]

D. DOE/FE's Categorical Exclusion Under NEPA for Non-FTA Authorization

In 2016—after an independent review, and having been a cooperating agency in the EIS preparation—DOE/FE adopted FERC's final EIS for the Lake Charles Liquefaction Project (FERC/EIS-0258F, adopted as DOE/EIS-0491), and the U.S. Environmental Protection Agency

---

[45] *See* 2015 FERC Order at P 4.
[46] For a detailed discussion of the FERC proceeding and FERC's analysis of these and other issues in its 2015 Order, see *Lake Charles Exports, LLC*, DOE/FE Order No. 3324-A, at 112-19.
[47] 2015 FERC Order at P 139.
[48] *Trunkline Gas Co., LLC*, *et al.*, Order Denying Reh'g, 155 FERC ¶ 61,328 (June 30, 2016).

(EPA) published a notice of the adoption.[49] As the final EIS for the Liquefaction Project, that EIS served as the basis of DOE's environmental review for LCE's existing non-FTA order, DOE/FE Order No. 3324-A.[50]

In this proceeding, on June 29, 2017, DOE/FE issued a categorical exclusion from the preparation of an environmental impact statement or environmental assessment under NEPA for LCE's Application (Categorical Exclusion).[51] Specifically, DOE/FE applied categorical exclusion B5.7 of DOE/FE's regulations (10 C.F.R. Part 1021, Subpart D, Appendix B5). This exclusion applies to natural gas import or export activities requiring minor operational changes to existing projects, but no new construction. This Order grants the non-FTA portion of the Application, in part, on the basis of this Categorical Exclusion.

As discussed below, the non-FTA authorization in this Order is conditioned on LCE's compliance with the 95 environmental conditions adopted in FERC's 2015 Order.

III. SUMMARY OF FINDINGS AND CONCLUSIONS FOR NON-FTA AUTHORIZATION

This Order presents DOE/FE's findings and conclusions on all issues associated with LCE's proposed exports of LNG in this proceeding, including both environmental and non-environmental issues.[52] *See infra* § VIII. As the basis for this Order, DOE/FE has reviewed a substantial administrative record that includes (but is not limited to) the following: the uncontested Application; the FERC Order granting authorization for Lake Charles LNG and Lake Charles LNG Export to site, construct, and operate the Liquefaction Project at the Lake

[49] U.S. Envtl. Prot. Agency, Environmental Impact Statements; Notice of Availability, 81 Fed. Reg. 46,077 (July 15, 2016) (providing notice that DOE/FE adopted FERC's final EIS for the Lake Charles Liquefaction Project).
[50] *See Lake Charles Exports, LLC*, DOE/FE Order No. 3324-A, at 9-10, 127-28.
[51] U.S. Dep't of Energy, Categorical Exclusion Determination, *Lake Charles Exports, LLC*, FE Docket No. 16-110-LNG (June 29, 2017) [hereinafter Categorical Exclusion].
[52] As discussed below, the non-environmental issues primarily include economic and international impacts associated with the proposed exports, as well as security of the natural gas supply in the United States. *See infra* § IV.

Charles Terminal; the FERC Rehearing Order; API's Motion to Intervene; DOE/FE's 2014 and 2015 LNG Export Studies; the Addendum; the LCA GHG Report; and public comments received on DOE/FE's various analyses.

On the basis of this record, DOE/FE has determined that it has not been demonstrated that the proposed exports of LNG will be inconsistent with the public interest, as would be required to deny the Application under NGA section 3(a). DOE/FE therefore authorizes LCE's export of domestically produced LNG from the Lake Charles Terminal to FTA and non-FTA countries in a total volume equivalent to 121 Bcf/yr of natural gas. This authorization is subject to the Terms and Conditions and Ordering Paragraphs set forth herein, *see infra* §§ IX-XI, but is not conditioned on additional environmental analysis or review.

IV. STANDARD OF REVIEW FOR NON-FTA AUTHORIZATION

Section 3(a) of the NGA sets forth the standard for review of the non-FTA portion of the Application:

> [N]o person shall export any natural gas from the United States to a foreign country or import any natural gas from a foreign country without first having secured an order of the [Secretary of Energy[53]] authorizing it to do so. The [Secretary] shall issue such order upon application, unless after opportunity for hearing, [he] finds that the proposed exportation or importation will not be consistent with the public interest. The [Secretary] may by [the Secretary's] order grant such application, in whole or part, with such modification and upon such terms and conditions as the [Secretary] may find necessary or appropriate.

15 U.S.C. § 717b(a). This provision creates a rebuttable presumption that a proposed export of natural gas is in the public interest. DOE/FE must grant such an application unless opponents of

[53] The Secretary's authority was established by the Department of Energy Organization Act, 42 U.S.C. § 7172, which transferred jurisdiction over imports and export authorizations from the Federal Power Commission to the Secretary of Energy.

the application overcome that presumption by making an affirmative showing of inconsistency with the public interest.[54]

While section 3(a) establishes a broad public interest standard and a presumption favoring export authorizations, the statute does not define "public interest" or identify criteria that must be considered. In prior decisions, however, DOE/FE has identified a range of factors that it evaluates when reviewing an application for export authorization. These factors include economic impacts, international impacts, security of natural gas supply, and environmental impacts, among others. To conduct this review, DOE/FE looks to record evidence developed in the application proceeding.[55]

DOE/FE's prior decisions have also looked to certain principles established in its 1984 Policy Guidelines.[56] The goals of the Policy Guidelines are to minimize federal control and involvement in energy markets and to promote a balanced and mixed energy resource system. The Guidelines provide that:

> The market, not government, should determine the price and other contract terms of imported [or exported] natural gas …. The federal government's primary responsibility in authorizing imports [or exports] will be to evaluate the need for the gas and whether the import [or export] arrangement will provide the gas on a competitively priced basis for the duration of the contract while minimizing regulatory impediments to a freely operating market.[57]

---

[54] *See, e.g.*, *Sabine Pass Liquefaction, LLC*, DOE/FE Order No. 2961, FE Docket No. 10-111-LNG, Opinion and Order Conditionally Granting Long-Term Authorization to Export Liquefied Natural Gas From Sabine Pass LNG Terminal to Non-Free Trade Agreement Nations, at 28 (May 20, 2011) [hereinafter *Sabine Pass*]; *see also Phillips Alaska Natural Gas Corp. & Marathon Oil Co.*, DOE/FE Order No. 1473, FE Docket No. 96-99-LNG, Order Extending Authorization to Export Liquefied Natural Gas from Alaska, at 13 (April 2, 1999) [hereinafter *Phillips Alaska Natural Gas*], citing *Panhandle Producers & Royalty Owners Ass'n v. ERA*, 822 F.2d 1105, 1111 (D.C. Cir. 1987).

[55] *See, e.g.*, *Sabine Pass*, DOE/FE Order No. 2961, at 28-42 (reviewing record evidence in issuing conditional authorization).

[56] New Policy Guidelines and Delegations Order Relating to Regulation of Imported Natural Gas, 49 Fed. Reg. 6684 (Feb. 22, 1984) [hereinafter 1984 Policy Guidelines].

[57] *Id*. at 6685.

While nominally applicable to natural gas import cases, DOE/FE subsequently held in Order No. 1473 that the same policies should be applied to natural gas export applications.[58]

In Order No. 1473, DOE/FE stated that it was guided by DOE Delegation Order No. 0204-111. That delegation order, which authorized the Administrator of the Economic Regulatory Administration to exercise the agency's review authority under NGA section 3, directed the Administrator to regulate exports "based on a consideration of the domestic need for the gas to be exported and such other matters as the Administrator finds in the circumstances of a particular case to be appropriate."[59] In February 1989, the Assistant Secretary for Fossil Energy assumed the delegated responsibilities of the Administrator of ERA.[60]

Although DOE Delegation Order No. 0204-111 is no longer in effect, DOE/FE's review of export applications has continued to focus on: (i) the domestic need for the natural gas proposed to be exported, (ii) whether the proposed exports pose a threat to the security of domestic natural gas supplies, (iii) whether the arrangement is consistent with DOE/FE's policy of promoting market competition, and (iv) any other factors bearing on the public interest described herein.

V. DESCRIPTION OF REQUEST FOR FTA AND NON-FTA AUTHORIZATIONS

LCE seeks long-term, multi-contract authorization to export domestically produced LNG by vessel from the Lake Charles Terminal to both FTA and non-FTA countries in a volume equivalent to approximately 121 Bcf/yr of natural gas (0.33 Bcf/d). LCE requests a 25-year period for the FTA authorization, commencing on the earlier of the date of first export or 10

---

[58] *Phillips Alaska Natural Gas*, DOE/FE Order No. 1473, at 14 (citing *Yukon Pacific Corp.*, DOE/FE Order No. 350, Order Granting Authorization to Export Liquefied Natural Gas from Alaska, 1 FE ¶ 70,259, at 71,128 (1989)).
[59] DOE Delegation Order No. 0204-111, at 1; *see also* 1984 Policy Guidelines, 49 Fed. Reg. at 6690.
[60] *See* Applications for Authorization to Construct, Operate, or Modify Facilities Used for the Export or Import of Natural Gas, 62 Fed. Reg. 30,435, 30,437 n.15 (June 4, 1997) (citing DOE Delegation Order No. 0204-127, 54 Fed. Reg. 11,436 (Mar. 20, 1989)).

years from the date of issuance of this Order. LCE requests a 20-year period for the non-FTA authorization, commencing on the earlier of the date of first export or seven years from the date of issuance of this Order. LCE seeks to export this LNG on its own behalf and as agent for other parties who will hold title to the LNG at the port of export.[61]

A. Description of Applicant

LCE is a Delaware limited liability company with its principal place of business in Houston, Texas. In a Notice of Change in Control given effect by DOE/FE in July 2016,[62] LCE stated that, on February 15, 2016, Royal Dutch Shell, plc (Shell) acquired all of the share capital of BG Group plc (BG). Prior to the transaction, LCE was owned by subsidiaries of BG and Energy Transfer Equity, L.P. (ETE), and LCE's affiliate, BG LNG Services, LLC (BGLS), was an indirect subsidiary of BG. As a result of the acquisition, LCE is now owned by subsidiaries of Shell and ETE. BGLS is an indirect wholly-owned by subsidiary of Shell.

DOE/FE takes administrative notice that Shell is a public limited company incorporated in the United Kingdom and headquartered in the Netherlands. ETE is a Delaware master limited partnership with its principal place of business in Dallas, Texas.

B. Lake Charles Terminal

FERC certificated the Lake Charles Terminal in 1977, with the original construction completed in 1981.[63] In 2001, BG LNG Services, LLC entered into a firm terminalling services agreement with Lake Charles LNG Company, LLC (formerly Trunkline LNG Company, LLC) under which it subscribed all the capacity of the Lake Charles Terminal to receive, store, and vaporize LNG.[64] According to LCE, the Lake Charles Terminal currently has a firm sustained

[61] LCE App. at 3-4.
[62] U.S. Dep't of Energy, Lake Charles Exports, LLC, *et al.* Notice of Change in Control, FE Docket Nos. 11-59-LNG, *et al.* (July 26, 2016); *see also* LCE App. at 8-9.
[63] *See Trunkline LNG Co., et al.*, 58 FPC 726 (Opinion No. 796), *order on reh'g* 58 FPC 2935 (1977).
[64] *See* 2015 FERC Order at P 16 n.16.

sendout capacity of 1.8 Bcf/d and a peak sendout capacity of 2.1 Bcf/d of natural gas. The Terminal has four LNG storage tanks with a combined capacity of approximately 2.7 million barrels (425,000 cubic meters) of LNG, or approximately 9.0 Bcf of natural gas. The Terminal's natural gas liquids processing facilities also allow the extraction of ethane and other heavier hydrocarbons from the LNG stream.[65]

C. Liquefaction Project

The Lake Charles Liquefaction Project, as approved by FERC, will consist of a new liquefaction facility including three liquefaction trains, with a design production capacity of 16.45 mtpa of LNG; modifications and upgrades at the existing LNG terminal; and approximately 0.5 mile of 48-inch diameter feed gas line in Calcasieu Parish, Louisiana, to supply natural gas to the liquefaction facility from existing gas transmission pipelines. Following completion of the Liquefaction Project, the Lake Charles Terminal will be bi-directional, and its peak and sustained sendout capabilities will not be affected.[66]

D. Procedural History

Pertinent aspects of LCE's procedural history with DOE/FE are summarized below.

FTA Order (DOE/FE Order No. 2987). On July 22, 2011, in DOE/FE Order No. 2987, DOE/FE granted the portion of LCE's Application requesting long-term, multi-contract authorization to export LNG to FTA countries in a volume equivalent to 730 Bcf/yr of natural gas—the same volume requested for non-FTA exports in this Order.[67] This authorization is for a 25-year term, beginning on the date of first export or 10 years from the date the authorization

[65] This discussion of the Lake Charles Terminal is taken from DOE/FE Order No. 3324-A at 16-17.
[66] *See, e.g.*, 2015 FERC Order at PP 10-13.
[67] *See Lake Charles Exports, LLC*, DOE/FE Order No. 2987, *supra* note 8.

was issued (July 22, 2021), and permits LCE to export the LNG on its own behalf or as agent for BG LNG Services, LLC.

LCE subsequently asked DOE/FE to amend Order No. 2987 to allow LCE to export LNG on its own behalf and as agent for other entities that will hold title to the LNG at the point of export—not only for BG LNG Services, LLC. DOE/FE granted that request on July 26, 2016, and LCE is now authorized to export LNG on its own behalf and as agent for other entities to FTA countries under DOE/FE Order No. 2987.[68]

Non-FTA Order (DOE/FE Order No. 3324-A). On July 29, 2016, in DOE/FE Order No. 3868, DOE/FE issued a final authorization granting the portion of LCE's Application requesting long-term, multi-contract authorization to export LNG to non-FTA countries in a volume equivalent to 730 Bcf/yr of natural gas.[69] That authorization is for a 20-year term, beginning on the date of first export or seven years from the date the authorization was issued. It permits LCE to export the LNG on its own behalf or as agent to other entities.

E. Business Model

LCE seeks authority to export LNG on its own behalf and as agent for other parties who will hold title to the LNG at the time of export. LCE anticipates that the title holder at the point of export may be LCE, one of its customers, or another party who has purchased LNG from a customer pursuant to a long-term LNG export contract.[70] LCE states that it will enter into a long-term LNG export contract on a date closer to the date of first export.[71]

LCE also requests authorization to register each LNG title holder for whom it seeks to

[68] U.S. Dep't of Energy, Letter Order re: *Lake Charles Exports, LLC*, DOE/FE Order No. 2987, FE Docket No. 11-59-LNG (July 26, 2016).
[69] *See supra* note 9. Previously, in DOE/FE Order No. 3324, DOE/FE had conditionally granted the requested non-FTA authorization, but Order No. 3324-A provided the final non-FTA authorization following DOE/FE's review of environmental issues.
[70] LCE App. at 4.
[71] *See id*. at 9.

export as agent, with such registration including a written statement by the title holder acknowledging and agreeing to comply with all applicable requirements included by DOE/FE in LCE's export authorization, and to include those requirements in any subsequent purchase or sale agreement entered into by that title holder. LCE states that, consistent with DOE/FE precedent, will file under seal any relevant long-term commercial agreements between LCE and such title holders, including long-term agreements, once those agreements have been executed.[72]

F. Source of Natural Gas

LCE states that it will export natural gas available in the United States natural gas pipeline system. LCE anticipates the source of natural gas supply for its proposed exports will include the Texas and Louisiana producing regions and the offshore producing regions in the Gulf of Mexico, but that the natural gas may be produced anywhere in the lower 48 states.[73]

VI. APPLICANT'S PUBLIC INTEREST ANALYSIS FOR NON-FTA AUTHORIZATION

A. Overview

LCE asserts that NGA section 3(a) creates a rebuttable presumption that its proposed exports of natural gas to non-FTA countries are in the public interest. LCE further states that, in addition to this statutory presumption favoring approval of its Application, there is "ample evidence in the public record" that exports of LNG are in the public interest.[74] To support this assertion, LCE points to its existing non-FTA authorization, DOE/FE Order No. 3324-A, and incorporates by reference the "substantial information" developed in support of that order in FE Docket No. 11-59-LNG, as well as the economic studies commissioned by DOE/FE projecting

[72] *See id*. at 4.
[73] *See id*. at 8-9.
[74] *See id*. at 7.

the benefits of LNG exports from the United States.[75] LCE emphasizes DOE/FE's conclusions in DOE/FE Order No. 3324-A that exports of LNG from the Lake Charles Terminal "'are likely to generate net economic benefits for the United States.'"[76] LCE asserts that this conclusion is "equally applicable" to its request for non-FTA authorization here.[77] As discussed below, LCE maintains that its proposed non-FTA exports are consistent with the public interest because the domestic supply of natural gas far exceeds the domestic demand for natural gas.[78]

B. Lack of a National or Regional Need for the Natural Gas Proposed To Be Exported

LCE states that, although domestic need for the natural gas proposed to be exported is the "'only explicit criterion that must be considered in determining the public interest,'" DOE/FE has identified a range of factors that it evaluates when reviewing an application for export authorization, including economic impacts, international impacts, security of natural gas supply, and environmental impacts, among others.[79] LCE states that DOE/FE thoroughly reviewed each of these factors in approving exports by LCE from the Lake Charles Terminal, and asserts that the same analysis applies here because its proposed non-FTA exports will increase exports from the Lake Charles Terminal by only 121 Bcf/yr of natural gas.

First, LCE states that DOE/FE has already found that exports from the Lake Charles Terminal are not inconsistent with the public interest. LCE contends that this finding in DOE/FE Order No. 3324-A was based primarily on the conclusion that domestic supplies of natural gas exceed projected demand, and that this conclusion continues to apply.

[75] *Id*.
[76] LCE App. at 7 (internal citations omitted).
[77] *Id.*
[78] *See id*. at 9.
[79] *Id*. at 12-13 (internal citations omitted).

Specifically, LCE states that DOE/FE reviewed three measures of supply to reach this conclusion in DOE/FE Order No. 3324-A: (i) the EIA Annual Energy Outlook natural gas estimates of production, price and other domestic industry fundamentals; (ii) proved reserves of natural gas; and (iii) technically recoverable resources. According to LCE, these three measures of supply "confirm that U.S. natural gas reserves are more than sufficient to meet domestic demand and support the proposed exports."[80] Accordingly, LCE maintains that "the proposed export authorization will not have a detrimental impact on the domestic supply of natural gas and, therefore, is not inconsistent with the public interest."[81]

With respect to the impact of exports on domestic natural gas prices, LCE argues that it is not the policy of the federal government to manipulate domestic energy prices by approving or disapproving import and export applications. Rather, U.S. policy is that markets, and not the government, should allocate resources, determine supply and demand, and set prices. Nonetheless, LCE points out that the *Annual Energy Outlook* 2016 (AEO 2016) Reference Case "predicts substantially lower natural gas prices than the AEO 2014 Reference Case did for 2040."[82] Citing DOE/FE Order No. 3324-A, LCE states that DOE/FE concluded that AEO 2016's results are "'more supportive of LNG exports on the same basis of higher production and demand with lower prices relative to AEO 2014.'"[83]

Turning to potential economic impacts associated with its proposed exports, LCE cites the 2014 EIA Study and DOE's 2015 LNG Export Study in support of its requested authorization. LCE states that DOE has determined that the 2014 EIA Study and the 2015 LNG Export Study support the proposition that additional export authorizations are not inconsistent

[80] *Id*. at 10.
[81] *Id*. at 12.
[82] *Id*. at 13.
[83] LCE App. at 13-14 (internal citations omitted).

with the public interest. LCE further asserts that its proposed export level is within the quantities analyzed in both the 2014 EIA Study and the 2015 LNG Export Study, and therefore are expected to have a positive economic impact in the United States.[84]

Finally, LCE points out that, in DOE/FE Order No. 3324-A, DOE/FE concluded that "'substantial economic and public benefits, including reductions to the U.S. trade deficit and the generation of significant tax revenues for federal, state, and local governmental entities, will follow from [LCE's proposed exports].'"[85] LCE argues that the same conclusion applies here.

VII. CURRENT NON-FTA PROCEEDING BEFORE DOE/FE

A. Overview

In response to the Notice of Application published in the *Federal Register* on November 10, 2016,[86] API filed a timely motion to intervene in this proceeding. API's motion neither supports nor opposes the Application.[87] No comments or protests on the Application were filed.

B. API's Motion to Intervene

On January 9, 2016, API filed its motion to intervene in this proceeding. API states that it is a national trade association representing more than 650 member companies involved in all aspects of the oil and gas industry in the United States. API's members include owners and operators of LNG import and export facilities in the United States and around the world, as well as owners and operators of LNG vessels, global LNG traders, and manufacturers of essential technology and equipment used all along the LNG value chain. API further states that its members have extensive experience with the drilling and completion techniques used in shale

---

[84] *See id*. at 14.
[85] *Id*. at 13 (internal citations omitted).
[86] *See* Notice of Application, 81 Fed. Reg. 79,005, *supra* note 18.
[87] American Petroleum Inst., Motion to Intervene, FE Docket No. 16-110-LNG (Jan. 9, 2017) [hereinafter API Mot.].

gas development and in producing U.S. natural gas resources in a safe, environmentally responsible manner.

For these reasons, API asserts that it has a direct and immediate interest in the Application that cannot be adequately protected by any other party. Accordingly, API contends that it should be permitted to intervene in this docket with full rights as a party.[88] LCE did not oppose API's motion.

VIII. DISCUSSION AND CONCLUSIONS FOR NON-FTA AUTHORIZATION

In reviewing the non-FTA portion of LCE's Application, DOE/FE has considered both its obligations under NEPA and its obligation under NGA section 3(a) to ensure that the proposed LNG exports are not inconsistent with the public interest. To accomplish these purposes, DOE/FE has examined a wide range of information addressing environmental and non-environmental factors, including:

- LCE's uncontested Application;
- FERC's 2015 EIS; FERC's December 17, 2015 Order, including the 95 environmental conditions adopted in that Order; and FERC's June 30, 2016 Rehearing Order;
- The Draft Addendum, comments received in response to the Draft Addendum, and the final Addendum;
- The LCA GHG Report (and the supporting NETL document), including comments submitted in response to those documents; and
- The 2014 and 2015 LNG Export Studies, including comments received in response to those Studies.

To avoid repetition, the following discussion focuses on arguments and evidence presented by LCE to the extent that DOE/FE has not already addressed the same or substantially similar

[88] API Mot. at 2.

arguments in its responses to comments on the Addendum, the LCA GHG Report, and/or the 2014 and 2015 Studies.

A. Motion to Intervene

API timely filed a motion to intervene in this proceeding. LCE did not oppose the motion and, therefore, API's motion to intervene is deemed granted. 10 C.F.R. § 590.303(g); *see infra* § XI (Ordering Para. S).

B. Non-Environmental Issues

In considering non-environmental issues in this proceeding, we have reviewed the Application, the 2014 and 2015 LNG Export Studies, and the comments on those Studies. We also take administrative notice of EIA's most recent authoritative projections for natural gas supply, demand, and prices, set forth in the *Annual Energy Outlook* 2017 (AEO 2017).[89]

The Reference case for AEO 2017 includes the effects of the Clean Power Plan (CPP),[90] which is intended to reduce carbon emissions from the power sector. DOE/FE assessed the AEO 2017 to evaluate any differences from AEO 2014, which formed the basis for the 2014 Study. AEO 2017 also included a Reference case without implementation of the Clean Power Plan. Both Reference Cases show natural gas production levels that favor exports, but that also have lower net LNG exports in 2040 (12.5 Bcf/d for the Reference Case with the CPP and 12 Bcf/d for the Reference Case without the CPP).

---

[89] U.S. Energy Information Administration, *Annual Energy Outlook* 2017 (Jan. 2017), *available at*: http://www.eia.gov/outlooks/aeo.

[90] U.S. Envtl. Prot. Agency, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule, 80 Fed. Reg. 64,662 (Oct. 23, 2015) (effective Dec. 22, 2015). On February 9, 2016, the U.S. Supreme Court issued a stay of the effectiveness of this rule pending review. *See Chamber of Commerce, et al. v. EPA, et al*., Order in Pending Case, 577 U.S. ___ (2016). Additionally, on April 28, 2017, the U.S. Court of Appeals for the District of Columbia Circuit issued an order holding the case in abeyance for 60 days. *See West Virginia, et al. v. EPA, et al.*, Order, Case No. 15-1363 (D.C. Cir. April 28, 2017).

1. LCE's Application

LCE states that the purpose of the requested non-FTA authorization is to align the volume of LNG authorized for export to non-FTA countries with the liquefaction production capacity of the Lake Charles Terminal, as approved by FERC in 2015.[91]

Upon review, we find that several factors identified in the Application support a grant of the non-FTA authorization to export domestically produced LNG in an amount equivalent to 121 Bcf/yr of natural gas, or 0.33 Bcf/d.

First, we find that the volume of LNG authorized for export to non-FTA countries in this Order—equivalent to 0.33 Bcf/d of natural gas—will have no practical impact on the domestic supply of natural gas in the United States or natural gas markets, as evidenced by the 2014 and 2015 LNG Export Study, as well as AEO 2017, as discussed below.

Second, the 2014 and 2015 LNG Export Study also project that exports of LNG will generate net economic benefits to the broader U.S. economy.

Third, as discussed below, over the 20-year term of the non-FTA authorization, the proposed exports will benefit the liquidity of international natural gas markets and make a positive contribution to the United States' trade balance. For this reason, LCE's proposed exports are consistent with U.S. policy under the National Export Initiative.[92]

2. Price Impacts

As discussed above, the 2014 and 2015 LNG Export Studies projected the economic impacts of LNG exports in a range of scenarios, including scenarios that exceeded the current amount of LNG exports authorized in the final non-FTA export authorizations to date

[91] *See* LCE App. at 2, 15.
[92] National Export Initiative, 75 Fed. Reg. 12,433 (Mar. 16, 2010).

(equivalent to a total of 21.33 Bcf/d of natural gas with the issuance of this Order and the Lake Charles LNG Export Order).[93] The 2015 Study concluded that LNG exports at these levels (in excess of 12 Bcf/d of natural gas) would result in higher U.S. natural gas prices, but that these price changes would remain in a relatively narrow range across the scenarios studied. However, even with these estimated price increases, the 2015 Study found that the United States would experience net economic benefits from increased LNG exports in all cases studied.[94]

We have also reviewed EIA's AEO 2017, published in January 2017. The Reference case of this projection includes the effects of the Clean Power Plan (CPP), discussed *supra*, which is intended to reduce carbon emissions from the power sector. DOE/FE assessed the AEO 2017 to evaluate any differences from AEO 2014, which formed the basis for the 2014 Study.

Comparing key results from 2040 (the end of the projection period in Reference case projections from AEO 2014) shows that the latest Reference case Outlook foresees lower-48 market conditions that would be even more supportive of LNG exports, including higher production and demand coupled with notably lower prices. Results from EIA's AEO 2017 no-CPP case, which is the same as the Reference case but does not include the CPP, are also more supportive of LNG exports on the basis of higher production with lower prices relative to AEO 2014.

For the year 2040, the AEO 2017 Reference case anticipates 3 percent more natural gas production in the lower-48 than AEO 2014. It also projects an average Henry Hub natural gas price that is lower than AEO 2014 by 38 percent. With regard to exports, the AEO 2017 projection's for 2040 net pipeline exports of 3.7 Bcf/d and lower-48 LNG exports of 12.1 Bcf/d

[93] *See infra* § VIII.F.
[94] *See* 2015 Study at 8, 82.

(over 63 percent higher than lower-48 LNG exports in AEO 2014) illustrate a market environment supportive of LNG exports.

In the AEO 2017 no-CPP case, for the year 2040, lower-48 production is 2 percent higher than in AEO 2014, with the Henry Hub price 39 percent lower. Net pipeline exports of 3.8 Bcf/d and total LNG exports of 12.7 Bcf/d again indicate a market supportive of exports. These differences are depicted in the table below:

Table 1: Year 2040 Reference Case Comparisons in AEO 2014 and AEO 2017

	AEO 2014 Reference Case	**AEO 2017 Reference Case** **Includes Clean Power Plan**	**AEO 2017 Reference Case** **Without Clean Power Plan**
Lower-48 Dry Natural Gas Production (Bcf/d)	99.4	102.3	101.4
Total Natural Gas Consumption (Bcf/d)	86.4	87.2	85.6
Electric Power Sector Consumption (Bcf/d)	30.7	30.2	28.5
<u>Net</u> Exports by Pipeline (Bcf/d)	6.6	3.7	3.8
<u>Net</u> LNG Exports (Bcf/d)	9.2	12.0	12.5
LNG Exports – Total (Bcf/d)	9.6	12.1	12.7
Lower-48	7.4	12.1	12.7
Alaska	2.2	0.0	0.0
Henry Hub Spot Price ($/MMBtu)(Note 1)	**$8.15 (2016$)** $7.65 (2012$)	**$5.07 (2016$)**	**$5.01 (2016$)**

Note 1: Prices adjusted to 2016$ with the GDP implicit deflator for AEO 2014.

3. Significance of the 2014 and 2015 LNG Export Studies

For the reasons discussed above, DOE/FE commissioned the 2014 EIA LNG Export Study and the 2015 LNG Export Study, and invited the submission of responsive comments on both Studies. DOE/FE has analyzed this material and determined that these two Studies provide substantial support for granting LCE's Application. Specifically, the conclusion of the 2015

Study is that the United States will experience net economic benefits from issuance of authorizations to export domestically produced LNG.

We have evaluated the public comments submitted in response to the 2014 and 2015 LNG Export Studies. Certain commenters have criticized aspects of the models, assumptions, and design of the Studies. As discussed above, however, EIA's projections in AEO 2017 continue to show market conditions that will accommodate increased exports of natural gas. When compared to the AEO 2014 Reference case, the AEO 2017 Reference case projects increases in domestic natural gas production—well in excess of what is required to meet projected increases in domestic consumption. Accordingly, we find that the 2014 and 2015 LNG Export Studies are fundamentally sound and support the proposition that the proposed authorization will not be inconsistent with the public interest.

4. Benefits of International Trade

We have not limited our review to the contents of the 2014 and 2015 LNG Export Studies and the data from AEO 2017, but have considered a wide range of other information. For example, the National Export Initiative, established by Executive Order, sets a goal to "improve conditions that directly affect the private sector's ability to export" and to "enhance and coordinate Federal efforts to facilitate the creation of jobs in the United States through the promotion of exports."[95]

We have also considered the international consequences of our decision. We review applications to export LNG to non-FTA nations under section 3(a) of the NGA. The United States' commitment to free trade is one factor bearing on that review. An efficient, transparent international market for natural gas with diverse sources of supply provides both economic and

---

[95] National Export Initiative, 75 Fed. Reg. 12,433 (Mar. 16, 2010).

strategic benefits to the United States and our allies. Indeed, increased production of domestic natural gas has significantly reduced the need for the United States to import LNG. In global trade, LNG shipments that would have been destined to U.S. markets have been redirected to Europe and Asia, improving energy security for many of our key trading partners. To the extent U.S. exports can diversify global LNG supplies, and increase the volumes of LNG available globally, it will improve energy security for many U.S. allies and trading partners. As such, authorizing U.S. exports may advance the public interest for reasons that are distinct from and additional to the economic benefits identified in the 2014 and 2015 Studies.

C. Environmental Issues

1. Issuance of a Categorical Exclusion

In reviewing the potential environmental impacts of LCE's proposal to export LNG, DOE/FE has considered both its obligations under NEPA and its obligation under NGA section 3(a) to ensure that the proposal is not inconsistent with the public interest. LCE proposes to export LNG from the Liquefaction Project facilities at the existing Lake Charles Terminal. These Liquefaction Project facilities have been evaluated under NEPA and approved by FERC, and are currently under construction. Further, the Application requires no new construction or modification of these facilities.[96]

The Department's regulations at 10 C.F.R. Part 1021, Subpart D, Appendix B, list categorical exclusions that apply to DOE actions. Item B5.7 provides a categorical exclusion where approvals or disapprovals of authorizations to import or export natural gas under NGA section 3 involve minor operational changes, but not new construction. Approval of LCE's requested authorization to export LNG from the Lake Charles Terminal falls within the scope of

[96] *See* LCE App. at 2.

the B5.7 categorical exclusion because the Application will not require additional construction beyond that previously authorized or modification of the approved facilities. Accordingly, on June 29, 2017, DOE/FE issued a Categorical Exclusion Determination applying a categorical exclusion under NEPA for the non-FTA portion of the Application.

The issuance of the Categorical Exclusion supports a determination that no further environmental review of the Application is required under NEPA. The fact that no interventions or comments have been submitted in this proceeding raising environmental concerns, while not determinative, is further support for favorable action in this proceeding.

2. Environmental Impacts Associated with Induced Production of Natural Gas

The current rapid development of natural gas resources in the United States likely will continue, with or without the export of natural gas to non-FTA nations.[97] Nevertheless, a decision by DOE/FE to authorize exports to non-FTA nations could accelerate that development by some increment. As discussed above, the Addendum reviewed the academic and technical literature covering the most significant issues associated with unconventional gas production, including impacts to water resources, air quality, greenhouse gas emissions, induced seismicity, and land use.

The Addendum shows that there are potential environmental issues associated with unconventional natural gas production that need to be carefully managed, especially with respect to emissions of volatile organic compounds (VOCs) and methane, and the potential for groundwater contamination. These environmental concerns do not lead us to conclude, however, that exports of natural gas to non-FTA nations should be prohibited. Rather, we believe the public interest is better served by addressing these environmental concerns directly—through

[97] Addendum at 2.

federal, state, or local regulation, or through self-imposed industry guidelines where appropriate—rather than by prohibiting exports of natural gas. 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. For example, in 2012, using its authority under the Clean Air Act, the U.S. Environmental Protection Agency (EPA) promulgated regulations for hydraulically fractured wells that are expected to yield significant emissions reductions.[98] In 2013, EPA updated those regulations to include storage tanks,[99] and in 2014 EPA issued a series of technical white papers exploring the potential need for additional measures to address methane emissions from the oil and gas sector.[100] In January 2015, EPA announced a strategy for "address[ing] methane and smog-forming VOC [volatile organic compound] emissions from the oil and gas industry in order to ensure continued, safe and responsible growth in U.S. oil and natural gas production."[101] Specifically, EPA has initiated a rulemaking to set standards for methane and VOC emissions from new and modified oil and gas

---

[98] U.S. Envtl. Prot. Agency, Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews; Final Rule, 77 Fed. Reg. 49,490 (Aug. 16, 2012).
[99] U.S. Envtl. Prot. Agency, Oil and Natural Gas Sector: Reconsideration of Certain Provisions of New Source Performance Standards; Final Rule, 78 Fed. Reg. 58,416 (Sept. 23, 2013).
[100] U.S. Envtl. Prot. Agency, Fact Sheet: EPA's Strategy for Reducing Methane and Ozone-Forming Pollution From the Oil and Natural Gas Industry (Jan. 14, 2015), *available at*: https://www.epa.gov/newsreleases/fact-sheet-epas-strategy-reducing-methane-and-ozone-forming-pollution-oil-and-natural.
[101] *Id*.

production sources, and natural gas processing and transmission sources.[102] EPA issued the proposed rule in September 2015,[103] and the final rule on June 3, 2016.[104]

Section 3(a) of the NGA is too blunt an instrument to address these environmental concerns efficiently. A decision to prohibit exports of natural gas would cause the United States to forego entirely the economic and international benefits discussed herein, but would have little more than a modest, incremental impact on the environmental issues identified by intervenors. For these reasons, we conclude that the environmental concerns associated with natural gas production do not establish that exports of natural gas to non-FTA nations are inconsistent with the public interest.

3. Greenhouse Gas Impacts Associated with U.S. LNG Exports

Certain commenters on the LCA GHG Report, the Addendum, and the 2014 and 2015 LNG Export Studies have expressed concern that exports of domestic natural gas to non-FTA nations may impact the balance of global GHG emissions through their impact domestically on

[102] The White House, Office of the Press Secretary, Fact Sheet: Administration Takes Steps Forward on Climate Action Plan by Announcing Actions to Cut Methane Emissions (Jan. 14, 2015), *available at*: https://www.whitehouse.gov/the-press-office/2015/01/14/fact-sheet-administration-takes-steps-forward-climate-action-plan-anno-1 (stating that, in developing the proposed and final standards, EPA "will focus on in-use technologies, current industry practices, [and] emerging innovations … to ensure that emissions reductions can be achieved as oil and gas production and operations continue to grow.").

[103] *See* U.S. Envtl. Prot. Agency, Oil and Natural Gas Sector: Emission Standards for New and Modified Sources, Proposed Rule, 80 Fed. Reg. 56,593 (Sept. 18, 2015). EPA subsequently extended the public comment period on this proposed rule and two related proposed rules until December 4, 2015. *See* 80 Fed. Reg. 70,719 (Nov. 13, 2015).

[104] U.S. Envtl. Prot. Agency, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources; Final Rule (40 C.F.R. Part 60), 81 Fed. Reg. 35,824 (June 3, 2016), *available at:* https://www.gpo.gov/fdsys/pkg/FR-2016-06-03/pdf/2016-11971.pdf. On April 18 and May 26, 2017, EPA announced a reconsideration and partial stay of certain requirements of this final rule. *See* U.S. Envtl. Prot. Agency, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources; Grant of Reconsideration and Partial Stay, 82 Fed. Reg. 25,730 (June 5, 2017). The three-month partial stay is in effect until August 31, 2017. *See id*. at 25,731. On June 16, 2017, EPA proposed a two-year stay and additional three-month stay of those requirements during EPA's reconsideration process. *See* U.S. Envtl. Prot. Agency, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Three Month Stay of Certain Requirements, Proposed Rule, 82 Fed. Reg. 27,641 (June 16, 2017); U.S. Envtl. Prot. Agency, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements, Proposed Rule, 82 Fed. Reg. 27,645 (June 16, 2017) (proposed two-year stay). The proposed rulemakings are not yet complete.

the price and availability of natural gas for electric generation and other uses. They also have objected that exports of natural gas could have a negative effect on the GHG intensity and total amount of energy consumed in foreign nations.

a. Domestic Environmental Impacts Associated with Increased Natural Gas Prices

To the extent exports of natural gas to non-FTA nations increase domestic natural gas prices, those higher prices would be expected, all else equal, to reduce the use of natural gas in the United States as compared to a future case in which exports to non-FTA exports were prohibited. Within the U.S. electric generation sector, reduced demand for natural gas caused by higher prices would be balanced by some combination of reduced electric generation overall (aided by conservation and efficiency measures), increased generation from other resources (such as coal, renewables, and nuclear), and more efficient use of natural gas (*i.e.*, shifting of generation to natural gas-fired generators with superior heat rates).

Although EIA's 2012 Study found that additional natural gas production would supply most of the natural gas needed to support added LNG exports, EIA modeled the effects of higher natural gas prices on energy consumption in the United States in the years 2015 through 2035, and found several additional results. In particular, EIA found that "under Reference case conditions, decreased natural gas consumption as a result of added exports are countered proportionately by increased coal consumption (72 percent), increased liquid fuel consumption (8 percent), other increased consumption, such as from renewable generation sources (9 percent), and decreases in total consumption (11 percent)."[105] Further, EIA determined that, in the earlier years of the 2015 to 2035 period, "the amount of natural gas to coal switching is greater," with

[105] 2012 EIA Study at 18.

"coal play[ing] a more dominant role in replacing the decreased levels of natural gas consumption, which also tend to be greater in the earlier years."[106] Likewise, "[s]witching from natural gas to coal is less significant in later years, partially as a result of a greater proportion of switching into renewable generation."[107] EIA ultimately projected that, for LNG export levels from 6 to 12 Bcf/d of natural gas and under Reference case conditions, aggregate carbon dioxide emissions would increase above a base case with no exports by between 643 and 1,227 million metric tons (0.5 to 1.0 percent) over the period from 2015 to 2035.[108] It is worth noting, however, that a substantial portion of these projected emissions came from consumption of natural gas in the liquefaction process, rather than from increased use of coal. The liquefaction of natural gas is captured in the LCA GHG Report's estimate of the life cycle GHG emissions of U.S.-exported LNG, discussed above.

We further note that EIA's 2014 Study assumed the regulations in effect at the time the AEO 2014 was prepared. Therefore, EIA's analysis included the impacts that EPA's Mercury and Air Toxics Standard[109] but not EPA's Transport Rule[110] as it had been vacated at the time. EIA's analysis in 2014 also captured the Clean Air Interstate Rule, which sets limits on regional sulfur dioxide and mono-nitrogen oxides (SO_2 and NO_x). There are, however, other rules that were not final at the time of AEO 2014, including two then-proposed rules from EPA to reduce the extent to which the increased use of coal would compensate for reduced use of natural gas.

---

[106] *Id*.
[107] *Id*.
[108] *Id*. at 19.
[109] U.S. Envtl. Prot. Agency, National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units; Final Rule, 77 Fed. Reg. 9,304 (Feb. 16, 2012).
[110] U.S. Envtl. Prot. Agency, Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals; Final Rule, 76 Fed. Reg. 48,208 (Aug. 8, 2011).

These rules, finalized in the fall of 2015, impose limits on GHG emissions from both new and existing coal-fired power plants.[111] In particular, these rules have the potential to mitigate significantly any increased emissions from the U.S. electric power sector that would otherwise result from increased use of coal, and perhaps to negate those increased emissions entirely.

The AEO 2017 incorporated the Clean Power Plan (CPP) final rule in the Reference case and assumes that all states choose to meet a mass-based standard to cover both existing and new sources of carbon dioxide emissions. In the AEO 2017 Reference case—which includes 12.1 Bcf/d of LNG exports from the United States in 2040—electric power sector carbon dioxide emissions are projected to be 37 percent below 2005 levels in 2040, decreasing from 2,416 million metric tons of carbon dioxide (MMmt CO_2) in 2005 to 1,531 in 2040, due to the implementation of the CPP as well as decreasing use of coal-fired generation. Natural gas generation increases by 33 percent in the Reference case from 2015 to 2040, and coal generation declines by 31 percent from 2015 to 2040.

In the AEO 2017 Reference case that did not incorporate the Clean Power Plan, LNG exports from the United States are 12.7 Bcf/d in 2040 and electric power sector carbon dioxide emissions are projected to be 20 percent below 2005 levels in 2040, decreasing in this case from 2,413 MMmt CO2 in 2005 to 1,941 in 2040, which is primarily attributable to increased use of natural gas generation that still occurs without the CPP. Also in the 2017 AEO Reference Case without the CPP, natural gas generation still rises from 2015 to 2040, but to a lesser degree, with

[111] U.S. Envtl. Prot. Agency, Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units; Final Rule, 80 Fed. Reg. 64,510 (Oct. 23, 2015); U.S. Envtl. Prot. Agency, Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule, 80 Fed. Reg. 64,662 (Oct. 23, 2015) (effective Dec. 22, 2015). As noted above, the U.S. Supreme Court has issued a stay of the effectiveness of this rule pending review, *see supra* note 90.

a 33 percent increase with the CPP and a 22 percent increase without it. Coal generation increases 3 percent from 2015 to 2040 without the CPP.

Therefore, on the record before us, we cannot conclude that exports of natural gas would be likely to cause a significant increase in U.S. GHG emissions through their effect on natural gas prices and the use of coal for electric generation.

b. International Impacts Associated with Energy Consumption in Foreign Nations

The LCA GHG Report estimated the life cycle GHG emissions of U.S. LNG exports to Europe and Asia, compared with certain other fuels used to produce electric power in those importing countries. The key findings for U.S. LNG exports to Europe and Asia are summarized in Figures 1 and 2 below:

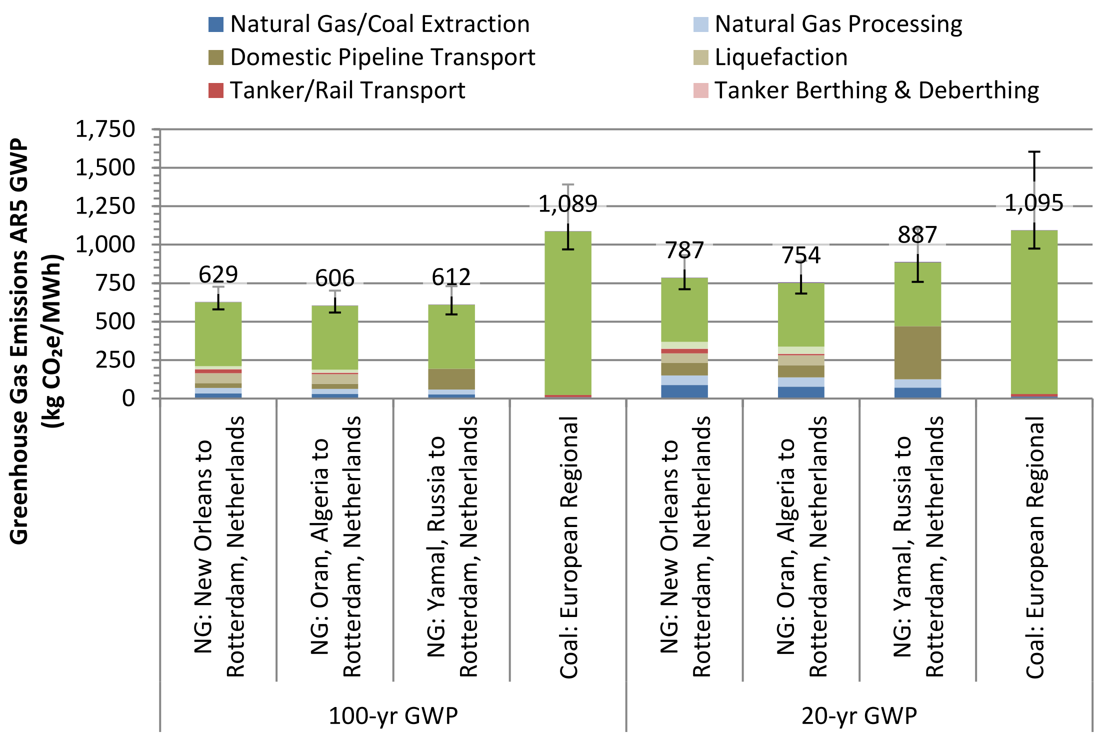

Figure 1: Life Cycle GHG Emissions for Natural Gas and Coal Power in Europe[112]

[112] LCA GHG Report at 9 (Figure 6-1).

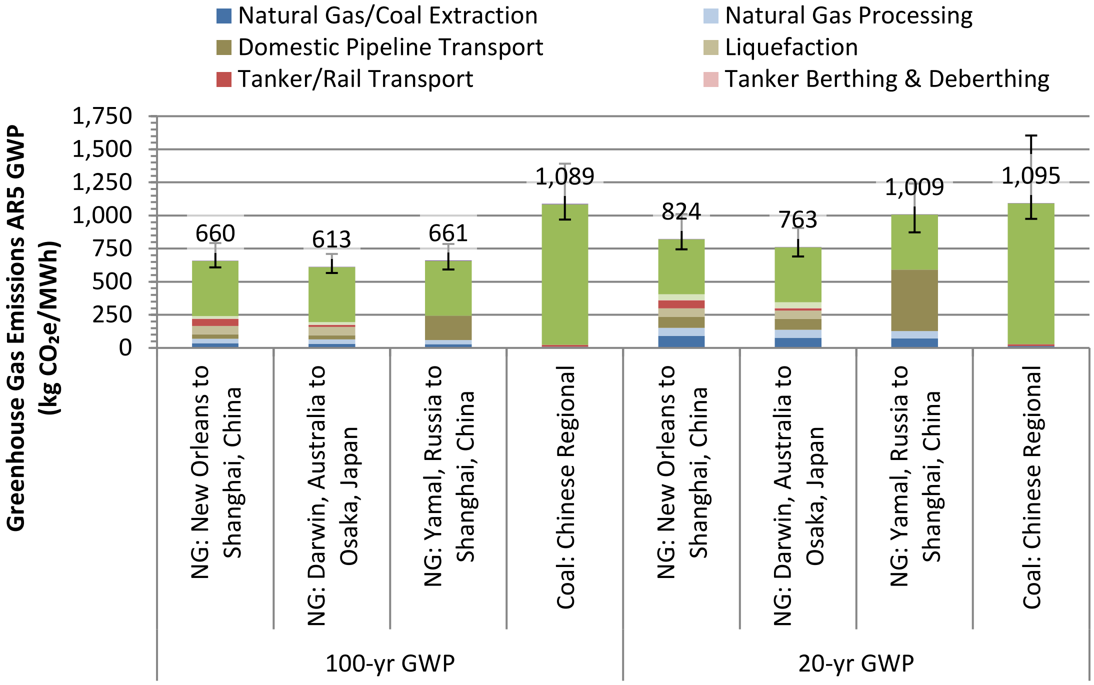

Figure 2: Life Cycle GHG Emissions for Natural Gas and Coal Power in Asia[113]

While acknowledging substantial uncertainty, the LCA GHG Report shows that to the extent U.S. LNG exports are preferred over coal in LNG-importing nations, U.S. LNG exports are likely to reduce global GHG emissions. Further, to the extent U.S. LNG exports are preferred over other forms of imported natural gas, they are likely to have only a small impact on global GHG emissions.[114]

The LCA GHG Report does not answer the ultimate question whether authorizing exports of natural gas to non-FTA nations will increase or decrease global GHG emissions, because regional coal and imported natural gas are not the *only* fuels with which U.S.-exported LNG would compete. U.S. LNG exports may also compete with renewable energy, nuclear energy, petroleum-based liquid fuels, coal imported from outside East Asia or Western Europe,

[113] LCA GHG Report at 10 (Figure 6-2).
[114] *Id*. at 9, 18.

indigenous natural gas, synthetic natural gas derived from coal, and other resources, as well as efficiency and conservation measures. To model the effect that U.S. LNG exports would have on net global GHG emissions would require projections of how each of these fuel sources would be affected in each LNG-importing nation. Such an analysis would not only have to consider market dynamics in each of these countries over the coming decades, but also the interventions of numerous foreign governments in those markets.

For example, Sierra Club and other commenters have observed that renewable energy has experienced significant growth in key LNG-importing countries such as India and China. These commenters do not, however, place the growth of renewable energy in the context of the aggregate use of fossil energy projects in those countries. Nor do they explain the extent to which growth in renewable energy has been driven by public policies in those countries and how the availability of U.S. LNG exports would or would not impact the continuation of those policies.

The uncertainty associated with estimating each of these factors would likely render such an analysis too speculative to inform the public interest determination in this or other non-FTA LNG export proceedings. Accordingly, DOE/FE elected to focus on the discrete question of how U.S. LNG compares on a life cycle basis to regional coal and other sources of imported natural gas in key LNG-importing countries. This is a useful comparison because coal and imported natural gas are prevalent fuel sources for electric generation in non-FTA LNG-importing nations. For example, EIA notes that installed electric generation capacity in China was 63 percent coal and 4 percent natural gas in 2013.[115] For India, installed electric generation capacity in 2014 is

[115] U.S. Energy Information Administration, China Analysis Brief (last updated May 14, 2015), *available at:* http://www.eia.gov/beta/international/analysis.cfm?iso=CHN.

62 percent coal and 8 percent natural gas.[116] In both China and India, electric generation capacity is expected to increase substantially in coming years. For Japan, the largest importer of LNG in the world, electric generation from fossil fuels was 74 percent of total generation in 2011 and has increased in the years following the Fukushima disaster—most recently to 85 percent in 2014.[117] In Europe, use of fossil fuels is slightly less than in the Asian nations noted above but still significant, comprising 62 percent of electric generation in the United Kingdom and around half for Spain for 2014, respectively.[118]

The conclusions of the LCA GHG Report, combined with the observation that many LNG-importing nations rely heavily on fossil fuels for electric generation, suggests that exports of U.S. LNG may decrease global GHG emissions, although there is substantial uncertainty on this point as indicated above. In any event, the record does not support the conclusion that U.S. LNG exports will increase global GHG emissions in a material or predictable way. Therefore, based on the current record evidence, we do not see a reason to conclude that U.S. LNG exports will significantly exacerbate global GHG emissions.

E. Other Considerations

Our decision is not premised on an uncritical acceptance of the general conclusion of the 2014 and 2015 LNG Export Studies of net economic benefits from LNG exports. Both of those Studies and many public comments identify significant uncertainties and even potential negative

---

[116] U.S. Energy Information Administration, India Analysis Brief (last updated June 14, 2016), *available at* http://www.eia.gov/beta/international/analysis.cfm?iso=IND.

[117] U.S. Energy Information Administration, Japan Analysis Brief (last updated Feb. 2, 2017), *available at:* http://www.eia.gov/beta/international/analysis.cfm?iso=JPN; *see also* http://www.eia.gov/beta/international/data/browser/index.cfm#/?vo=0&v=H&start=1980&end=2014.

[118] EIA, International Energy Statistics, *available at:* http://www.eia.gov/beta/international/. To evaluate the effect that U.S. LNG exports may have on the mix of fuels used for electric generation in Western Europe also requires consideration of the role of the European Trading System (ETS). The ETS places a cap on GHG emissions. Therefore, where the cap is a binding constraint, the ETS ultimately may ensure that the availability of U.S.-exported LNG will not affect aggregate emissions.

impacts from LNG exports. The economic impacts of higher natural gas prices and potential increases in natural gas price volatility are two of the factors that we view most seriously. Yet we also have taken into account factors that could mitigate such impacts, such as the current oversupply situation and data indicating that the natural gas industry would increase natural gas supply in response to increasing exports. Further, we note that it is far from certain that all or even most of the proposed LNG export projects will ever be realized because of the time, difficulty, and expense of commercializing, financing, and constructing LNG export terminals, as well as the uncertainties inherent in the global market demand for LNG. On balance, we find that the potential negative impacts of LCE's proposed exports are outweighed by the likely net economic benefits and by other non-economic or indirect benefits.

More generally, DOE/FE continues to subscribe to the principle set forth in our 1984 Policy Guidelines[119] that, under most circumstances, the market is the most efficient means of allocating natural gas supplies. However, agency intervention may be necessary to protect the public in the event there is insufficient domestic natural gas for domestic use. There may be other circumstances as well that cannot be foreseen that would require agency action.[120] Given these possibilities, DOE/FE recognizes the need to monitor market developments closely as the impact of successive authorizations of LNG exports unfolds.

---

[119] 49 Fed. Reg. at 6,684 (Feb. 22, 1984).

[120] Some commenters previously asked DOE to clarify the circumstances under which the agency would exercise its authority to revoke (in whole or in part) previously issued LNG export authorizations. We cannot precisely identify all the circumstances under which such action would be taken. We reiterate our observation in *Sabine Pass* that: "In the event of any unforeseen developments of such significant consequence as to put the public interest at risk, DOE/FE is fully authorized to take action as necessary to protect the public interest. Specifically, DOE/FE is authorized by section 3(a) of the Natural Gas Act … to make a supplemental order as necessary or appropriate to protect the public interest. Additionally, DOE is authorized by section 16 of the Natural Gas Act 'to perform any and all acts and to prescribe, issue, make, amend, and rescind such orders, rules, and regulations as it may find necessary or appropriate' to carry out its responsibilities." *Sabine Pass*, DOE/FE Order No. 2961, at 33 n.45 (quoting 15 U.S.C. § 717o).

F. Conclusion

We have reviewed the evidence in the record and relevant precedent in earlier non-FTA export decisions and have not found an adequate basis to conclude that LCE's proposed exports of LNG to non-FTA countries will be inconsistent with the public interest. For that reason, we are authorizing LCE's proposed exports to non-FTA countries subject to the limitations and conditions described in this Order.

In deciding whether to grant a final non-FTA export authorization, we consider in our decision-making the cumulative impacts of the total volume of all final non-FTA export authorizations. With the issuance of this Order, DOE/FE has now issued final non-FTA authorizations in a cumulative volume of exports totaling 21.33 Bcf/d of natural gas, or approximately 7.79 trillion cubic feet per year, for the 28 final authorizations issued to date—Sabine Pass Liquefaction, LLC (2.2 Bcf/d),[121] Carib Energy (USA) LLC (0.04 Bcf/d),[122] Cameron LNG, LLC (1.7 Bcf/d),[123] FLEX I (1.4 Bcf/d),[124] FLEX II (0.4 Bcf/d),[125] Dominion Cove Point LNG, LP (0.77 Bcf/d),[126] Cheniere Marketing, LLC and Corpus Christi Liquefaction,

[121] *Sabine Pass Liquefaction, LLC*, DOE/FE Order No. 2961-A, FE Docket No. 10-111-LNG, Final Opinion and Order Granting Long-Term Authorization to Export Liquefied Natural Gas From Sabine Pass LNG Terminal to Non-Free Trade Agreement Nations (Aug. 7, 2012).

[122] *Carib Energy (USA) LLC*, DOE/FE Order No. 3487, FE Docket No. 11-141-LNG, Final Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas in ISO Containers by Vessel to Non-Free Trade Agreement Nations in Central America, South America, or the Caribbean (Sept. 10, 2014).

[123] *Cameron LNG, LLC*, DOE/FE Order No. 3391-A, FE Docket No. 11-162-LNG, Final Opinion and Order Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Cameron LNG Terminal in Cameron Parish, Louisiana, to Non-Free Trade Agreement Nations (Sept. 10, 2014).

[124] *Freeport LNG Expansion, L.P., et al.*, DOE/FE Order No. 3282-C, FE Docket No. 10-161-LNG, Final Opinion and Order Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Freeport LNG Terminal on Quintana Island, Texas, to Non-Free Trade Agreement Nations (Nov. 14, 2014) (FLEX I Final Order).

[125] *Freeport LNG Expansion, L.P., et al.*, DOE/FE Order No. 3357-B, FE Docket No. 11-161-LNG, Final Opinion and Order Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Freeport LNG Terminal on Quintana Island, Texas, to Non-Free Trade Agreement Nations (Nov. 14, 2014) (FLEX II Final Order).

[126] *Dominion Cove Point LNG, LP*, DOE/FE Order No. 3331-A, FE Docket No. 11-128-LNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas from the Cove Point LNG Terminal in Calvert County, Maryland, to Non-Free Trade Agreement Nations (May 7, 2015).

LLC (2.1 Bcf/d),[127] Sabine Pass Liquefaction, LLC Expansion Project (1.38 Bcf/d),[128] American Marketing LLC (0.008 Bcf/d),[129] Emera CNG, LLC (0.008 Bcf/d),[130] Floridian Natural Gas Storage Company, LLC,[131] Air Flow North American Corp. (0.002 Bcf/d),[132] Bear Head LNG Corporation and Bear Head LNG (USA), LLC (0.81 Bcf/d),[133] Pieridae Energy (USA) Ltd.,[134] Sabine Pass Liquefaction, LLC Design Increase (0.56 Bcf/d),[135] Cameron LNG, LLC Design

[127] *Cheniere Marketing, LLC and Corpus Christi Liquefaction, LLC*, DOE/FE Order No. 3638, FE Docket No. 12-97-LNG, Final Order and Opinion 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 (May 12, 2015).

[128] *Sabine Pass Liquefaction, LLC*, DOE/FE Order No. 3669, FE Docket Nos. 13-30-LNG, 13-42-LNG, & 13-121-LNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Sabine Pass LNG Terminal Located in Cameron Parish, Louisiana, to Non-Free Trade Agreement Nations (June 26, 2015).

[129] *American LNG Marketing LLC*, DOE/FE Order No. 3690, FE Docket No. 14-209-LNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas in ISO Containers Loaded at the Proposed Hialeah Facility Near Medley, Florida, and Exported by Vessel to Non-Free Trade Agreement Nations (Aug. 7, 2015).

[130]*Emera CNG, LLC*, DOE/FE Order No. 3727, FE Docket No. 13-157-CNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Compressed Natural Gas by Vessel From a Proposed CNG Compression and Loading Facility at the Port of Palm Beach, Florida, to Non-Free Trade Agreement Nations (Oct. 19, 2015).

[131] *Floridian Natural Gas Storage Co., LLC*, DOE/FE Order No. 3744, FE Docket No. 15-38-LNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas in ISO Containers Loaded at the Proposed Floridian Facility in Martin County, Florida, and Exported by Vessel to Non-Free Trade Agreement Nations (Nov. 25, 2015).

[132] *Air Flow North American Corp*., DOE/FE Order No. 3753, FE Docket No. 15-206-LNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas in ISO Containers Loaded at the Clean Energy Fuels Corp. LNG Production Facility in Willis, Texas, and Exported by Vessel to Non-Free Trade Agreement Nations in Central America, South America, the Caribbean, or Africa (Dec. 4, 2015).

[133] *Bear Head LNG Corporation and Bear Head LNG (USA)*, DOE/FE Order No. 3770, FE Docket No. 15-33-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export U.S.-Sourced Natural Gas by Pipeline to Canada for Liquefaction and Re-Export in the Form of Liquefied Natural Gas to Non-Free Trade Agreement Countries (Feb. 5, 2016).

[134] *Pieridae Energy (USA) Ltd*., DOE/FE Order No. 3768, FE Docket No. 14-179-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export U.S.-Sourced Natural Gas Natural Gas by Pipeline to Canada for Liquefaction and Re-Export in the Form of Liquefied Natural Gas to Non-Free Trade Agreement Countries (Feb. 5, 2016).

[135] *Sabine Pass Liquefaction, LLC,* DOE/FE Order No. 3792, FE Docket No. 15-63-LNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel From the Sabine Pass LNG Terminal Located in Cameron Parish, Louisiana, to Non-Free Trade Agreement Nations (Mar. 11, 2016).

Increase (0.42 Bcf/d),[136] Flint Hills Resources, LP (0.01 Bcf/d),[137] Cameron LNG, LLC Expansion Project (1.41 Bcf/d),[138] Lake Charles Exports, LLC (2.0 Bcf/d),[139] Lake Charles LNG Export Company, LLC,[140] Carib Energy (USA), LLC (0.004),[141] Magnolia LNG, LLC (1.08 Bcf/d),[142] Southern LNG Company, L.L.C. (0.36 Bcf/d),[143] the FLEX Design Increase (0.34

[136] *Cameron LNG, LLC*, DOE/FE Order No. 3797, FE Docket No. 15-167-LNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Cameron Terminal Located in Cameron and Calcasieu Parishes, Louisiana, to Non-Free Trade Agreement Nations (Mar. 18, 2016).

[137] *Flint Hills Resources, LP*, DOE/FE Order No. 3829, FE Docket No. 15-168-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas in ISO Containers and in Bulk Loaded at the Stabilis LNG Eagle Ford Facility in George West, Texas, and Exported by Vessel to Non-Free Trade Agreement Nations (May 20, 2016).

[138] *Cameron LNG, LLC*, DOE/FE Order No. 3846, FE Docket No. 15-90-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from Trains 4 and 5 of the Cameron LNG Terminal Located in Cameron and Calcasieu Parishes, Louisiana, to Non-Free Trade Agreement Nations (July 15, 2016).

[139] *Lake Charles Exports, LLC*, DOE/FE Order No. 3324-A, FE Docket No. 11-59-LNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Lake Charles Terminal in Calcasieu Parish, Louisiana, to Non-Free Trade Agreement Nations (July 29, 2016).

[140] *Lake Charles LNG Export Co., LLC*, DOE/FE Order No. 3868, FE Docket No. 13-04-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Lake Charles Terminal in Calcasieu Parish, Louisiana to Non-Free Trade Agreement Nations (July 29, 2016).

[141] *Carib Energy (USA) LLC*, DOE/FE Order No. 3937, FE Docket No. 16-98-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas in ISO Containers Loaded at Designated Pivotal LNG, Inc. Facilities and Exported by Vessel to Non-Free Trade Agreement Nations in Central America, South America, or the Caribbean (Nov. 28, 2016).

[142] *Magnolia LNG, LLC*, DOE/FE Order No. 3909, FE Docket No. 13-132-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel From the Proposed Magnolia LNG Terminal to be Constructed in Lake Charles, Louisiana, to Non-Free Trade Agreement Nations (Nov. 30, 2016).

[143] *Southern LNG Company, L.L.C.*, DOE/FE Order No. 3956, FE Docket No. 12-100-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Elba Island Terminal in Chatham County, Georgia, to Non-Free Trade Agreement Nations (Dec. 16, 2016).

Bcf/d),[144] Golden Pass Products LLC (2.02 Bcf/d),[145] Delfin LNG LLC,[146] the Lake Charles LNG Export Company, LLC Design Increase (0.33 Bcf/d) being issued today,[147] and this Order.

We note that the volumes authorized for export in the *Lake Charles Exports* and *Lake Charles LNG Export* orders are both 2.0 Bcf/d and 0.33 Bcf/d, respectively, yet are not additive to one another because the source of LNG approved under all of those orders is the Lake Charles Terminal. Likewise, the *Carib* and *Floridian* orders are both 14.6 Bcf/yr of natural gas (0.04 Bcf/d), yet are not additive to one another because the source of LNG approved under both orders is from the Floridian Facility.[148] Additionally, the volumes authorized for export in the *Bear Head* and *Pieridae US* orders are not additive; together, they are limited to a maximum of 0.81 Bcf/d to reflect the current capacity of the Maritimes Northeast Pipeline at the U.S.-Canadian border.[149] In sum, the total export volume is within the range of scenarios analyzed in the 2014 and 2015 LNG Export Studies. The 2015 Study found that in all such scenarios—assuming LNG export volumes totaling 12 Bcf/d up to 20 Bcf/d of natural gas—the United States would experience net economic benefits.

---

[144] *Freeport LNG Expansion, L.P., et al.*, DOE/FE Order No. 3957, FE Docket No. 16-108-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Freeport LNG Terminal on Quintana Island, Texas, to Non-Free Trade Agreement Nations (Dec. 19, 2016).

[145] *Golden Pass Products LLC*, DOE/FE Order No. 3978, FE Docket No. 12-156-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Golden Pass LNG Terminal Located in Jefferson County, Texas, to Non-Free Trade Agreement Nations (Apr. 25, 2017).

[146] *Delfin LNG LLC*, DOE/FE Order No. 4028, FE Docket No. 13-147-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from a Proposed Floating Liquefaction Project and Deepwater Port 30 Miles Offshore of Louisiana to Non-Free Trade Agreement Nations (June 1, 2017).

[147] *Lake Charles LNG Export Co., LLC*, DOE/FE Order No. 4010, FE Docket No. 16-109-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Lake Charles Terminal in Calcasieu Parish, Louisiana, to Non-Free Trade Agreement Nations (June 29, 2017).

[148] *See Floridian Natural Gas Storage Co., LLC*, DOE/FE Order No. 3744, at 22 (stating that the quantity of LNG authorized for export by Floridian in DOE/FE Order No. 3744 "will be reduced by the portion of the total approved volume of 14.6 Bcf/yr that is under firm contract directly or indirectly to Carib Energy (USA), LLC"); *see also id*. at 21 (Floridian "may not treat the volumes authorized for export in the [*Carib* and *Floridian*] proceedings as additive to one another.").

[149] *See Bear Head LNG Corporation and Bear Head LNG (USA)*, DOE/FE Order No. 3770, at 178-79 (stating that the quantity of LNG authorized for export by Bear Head LNG and Pieridae US "are not additive; together, they are limited to a maximum of 0.81 Bcf/d to reflect the current capacity of the M&N US Pipeline.").

DOE/FE will continue taking a measured approach in reviewing the other pending applications to export domestically produced LNG. Specifically, DOE/FE will continue to assess the cumulative impacts of each succeeding request for export authorization on the public interest with due regard to the effect on domestic natural gas supply and demand fundamentals. In keeping with the performance of its statutory responsibilities, DOE/FE will attach appropriate and necessary terms and conditions to authorizations to ensure that the authorizations are utilized in a timely manner and that authorizations are not issued except where the applicant can show that there are or will be facilities capable of handling the proposed export volumes and existing and forecast supplies that support that action. Other conditions will be applied as necessary.

The reasons in support of proceeding cautiously are several: (1) the 2014 and 2015 LNG Export Studies, like any studies based on assumptions and economic projections, are inherently limited in their predictive accuracy; (2) applications to export significant quantities of domestically produced LNG are a new phenomena with uncertain impacts; and (3) the market for natural gas has experienced rapid reversals in the past and is again changing rapidly due to economic, technological, and regulatory developments. The market of the future very likely will not resemble the market of today. In recognition of these factors, DOE/FE intends to monitor developments that could tend to undermine the public interest in grants of successive applications for exports of domestically produced LNG and, as previously stated, to attach terms and conditions to the authorization in this proceeding and to succeeding LNG export authorizations as are necessary for protection of the public interest.

IX. TERMS AND CONDITIONS

To ensure that the FTA and non-FTA authorizations issued by this Order are not inconsistent with the public interest, DOE/FE has attached the following Terms and Conditions to both authorizations, unless otherwise specified. The reasons for each term or condition are explained below. LCE must abide by each Term and Condition or may face rescission of the authorization or other appropriate sanction.

A. Term of the Authorizations

For the FTA authorization, LCE requests a 25-year term commencing on the date of first export. We grant that request without modification as required by NGA section 3(c), 15 U.S.C. § 717b(c). The 25-year term will begin on the date when LCE commences commercial export of domestically sourced LNG from the Lake Charles Terminal, but not before.

For the non-FTA authorization, LCE requests a 20-year term commencing on the date of first export. This term is consistent with our practice in the non-FTA export authorizations issued to date, including LCE's authorization in DOE/FE Order No. 3324-A. The 20-year term will begin on the date when LCE commences commercial export of domestically sourced LNG from the Lake Charles Terminal, but not before.

B. Commencement of Operations

As requested by LCE, DOE/FE will add as a condition of the FTA authorization that LCE must commence commercial LNG export operations to FTA nations from the Lake Charles Terminal no later than 10 years from the date of issuance of this Order.

Consistent with our prior non-FTA authorizations to date, including LCE's authorization in DOE/FE Order No. 3324-A, DOE/FE will add as a condition of the non-FTA authorization that LCE must commence commercial LNG export operations to non-FTA nations from the Lake Charles Terminal no later than seven years from the date of issuance of this Order. The purpose of this condition is to ensure that other entities that may seek similar authorizations are not frustrated in their efforts to obtain those authorizations by authorization holders that are not engaged in actual export operations.

C. FTA Countries for FTA Authorization

The countries with which the United States has a FTA requiring national treatment for trade in natural gas currently are: Australia, Bahrain, Canada, Chile, Colombia, Dominican Republic, El Salvador, Guatemala, Honduras, Jordan, Mexico, Morocco, Nicaragua, Oman, Panama, Peru, Republic of Korea, and Singapore.

D. Commissioning Volumes

LCE will be permitted to apply for short-term export authorizations to export Commissioning Volumes prior to the commencement of the first commercial exports of domestically sourced LNG from the Lake Charles Terminal. "Commissioning Volumes" are defined as the volume of LNG produced and exported under a short-term authorization during the initial start-up of each LNG train, before each LNG train has reached its full steady-state capacity and begun its commercial exports pursuant to LCE's long-term contracts.[150] The Commissioning Volumes will not be counted against the maximum level of volumes previously authorized in LCE's FTA and non-FTA orders or in this Order.

E. Make-Up Period

LCE will be permitted to continue exporting for a total of three years following the end of the 25-year FTA term and 20-year non-FTA term established in this Order, solely to export any Make-Up Volume that it was unable to export during the original export periods. The three-year term during which the Make-Up Volume may be exported shall be known as the "Make-Up Period."

---

[150] For additional discussion of Commissioning Volumes and the Make-Up Period referenced below, see *Freeport LNG Expansion, L.P., et al.*, DOE/FE Order Nos. 3282-B & 3357-A, FE Docket Nos. 10-161-LNG & 11-161-LNG, Order Amending DOE/FE Order Nos. 3282 and 3357, at 4-9 (June 6, 2014).

The Make-Up Period does not affect or modify the total volume of LNG previously authorized in LCE's FTA and non-FTA orders or in this Order. Insofar as LCE may seek to export additional volumes not previously authorized for export, it will be required to obtain appropriate authorization from DOE/FE.

F. Transfer, Assignment, or Change in Control

DOE/FE's natural gas import/export regulations prohibit authorization holders from transferring or assigning authorizations to import or export natural gas without specific authorization by the Assistant Secretary for Fossil Energy.[151] As a condition of the similar authorization issued to Sabine Pass in DOE/FE Order No. 2961, DOE/FE found that the requirement for prior approval by the Assistant Secretary under its regulations applies to any change of effective control of the authorization holder either through asset sale or stock transfer or by other means. This condition was deemed necessary to ensure that, prior to any transfer or change in control, DOE/FE will be given an adequate opportunity to assess the public interest impacts of such a transfer or change.

DOE/FE construes a change in control to mean a change, directly or indirectly, of the power to direct the management or policies of an entity whether such power is exercised through one or more intermediary companies or pursuant to an agreement, written or oral, and whether such power is established through ownership or voting of securities, or common directors, officers, or stockholders, or voting trusts, holding trusts, or debt holdings, or contract, or any other direct or indirect means. A rebuttable presumption that control exists will arise from the

[151] 10 C.F.R. § 590.405.

ownership or the power to vote, directly or indirectly, 10 percent or more of the voting securities of such entity.[152]

G. Agency Rights

LCE requests authorization to export LNG from the Lake Charles Terminal in a volume equivalent to 121 Bcf/yr to both FTA and non-FTA countries on its own behalf and as agent for other entities that hold title to the LNG at the time of export. DOE/FE previously addressed the issue of Agency Rights in Order No. 2913, which granted Freeport LNG Expansion, L.P., *et al.* (FLEX) authority to export LNG to FTA countries.[153] In that order, DOE/FE approved a proposal by FLEX to register each LNG title holder for whom FLEX sought to export LNG as agent. DOE/FE found that this proposal was an acceptable alternative to the non-binding policy adopted by DOE/FE in *Dow Chemical*, which established that the title for all LNG authorized for export must be held by the authorization holder at the point of export.[154] We find that the same policy considerations that supported DOE/FE's acceptance of the alternative registration proposal in Order No. 2913 apply here as well.

DOE/FE has reiterated its policy on Agency Rights procedures in prior authorizations, including in *Cameron LNG, LLC*, DOE/FE Order No. 3846.[155] In that order, DOE/FE determined that, in LNG export orders in which Agency Rights have been granted, DOE/FE shall require registration materials filed for, or by, an LNG title-holder (Registrant) to include the

[152] For information on DOE/FE's procedures governing a change in control, see U.S. Dep't of Energy, Procedures for Changes in Control Affecting Applications and Authorizations to Import or Export Natural Gas, 79 Fed. Reg. 65,541 (Nov. 5, 2014) [hereinafter Procedures for Changes in Control].
[153] *Freeport LNG Expansion, L.P., et al.*, DOE/FE Order No. 2913, FE Docket No. 10-160-LNG, Order Granting Long-Term Authorization to Export Liquefied Natural Gas from Freeport LNG Terminal to Free Trade Nations (Feb. 10, 2011) [hereinafter *Freeport LNG*].
[154] *Dow Chem. Co.*, DOE/FE Order No. 2859, FE Docket No. 10-57-LNG, Order Granting Blanket Authorization to Export Liquefied Natural Gas, at 7-8 (Oct. 5, 2010), *discussed in Freeport LNG*, DOE/FE Order No. 2913, at 7-8.
[155] *See Cameron LNG, LLC*, DOE/FE Order No. 3846.

same company identification information and long-term contract information of the Registrant as if the Registrant had filed an application to export LNG on its own behalf.[156]

To ensure that the public interest is served, this authorization shall be conditioned to require that where LCE proposes to export LNG as agent for other entities that hold title to the LNG (Registrants), it must register with DOE/FE those entities on whose behalf it will export LNG in accordance with the procedures and requirements described herein.

H. Contract Provisions for the Sale or Transfer of LNG to be Exported

DOE/FE's regulations require applicants to supply transaction-specific factual information "to the extent practicable."[157] Additionally, DOE/FE regulations allow confidential treatment of the information supplied in support of or in opposition to an application if the submitting party requests such treatment, shows why the information should be exempted from public disclosure, and DOE/FE determines it will be afforded confidential treatment in accordance with 10 C.F.R. § 1004.11.[158]

DOE/FE will require that LCE file or cause to be filed with DOE/FE any relevant long-term commercial agreements pursuant to which LCE exports LNG as agent for a Registrant once those agreements have been executed.

DOE/FE finds that the submission of all such agreements or contracts within 30 days of their execution using the procedures described below will be consistent with the "to the extent practicable" requirement of section 590.202(b). By way of example and without limitation, a "relevant long-term commercial agreement" would include an agreement with a minimum term of two years, an agreement to provide natural gas processing or liquefaction services at the Lake

[156] *See id*. at 128-29 (citation omitted).
[157] 10 C.F.R. § 590.202(b).
[158] *Id*. § 590.202(e).

Charles Terminal, a long-term sales contract involving natural gas or LNG stored or liquefied at the Terminal, or an agreement to provide export services from the Terminal.

In addition, DOE/FE finds that section 590.202(c) of DOE/FE's regulations[159] requires that LCE file, or cause to be filed, all long-term contracts associated with the long-term supply of natural gas to the Lake Charles Terminal, whether signed by LCE or the Registrant, within 30 days of their execution.

DOE/FE recognizes that some information in LCE's or a Registrant's long-term commercial agreements associated with the export of LNG, and/or long-term contracts associated with the long-term supply of natural gas to the Lake Charles Terminal, may be commercially sensitive. DOE/FE therefore will provide LCE the option to file or cause to be filed either unredacted contracts, or in the alternative (A) LCE may file, or cause to be filed, long-term contracts under seal, but it also will file either: i) a copy of each long-term contract with commercially sensitive information redacted, or ii) a summary of all major provisions of the contract(s) including, but not limited to, the parties to each contract, contract term, quantity, any take or pay or equivalent provisions/conditions, destinations, re-sale provisions, and other relevant provisions; and (B) the filing must demonstrate why the redacted information should be exempted from public disclosure.

To ensure that DOE/FE destination and reporting requirements included in this Order are conveyed to subsequent title holders, DOE/FE will include as a condition of the FTA and non-FTA authorizations that future contracts for the sale or transfer of LNG exported pursuant to this Order shall include an acknowledgement of these requirements.

---

[159] *Id*. § 590.202(c).

I. Export Quantity

LCE sought authorization to export up to a total of 121 Bcf/yr of natural gas (0.33 Bcf/d) to FTA and non-FTA countries, which is within the maximum liquefaction capacity of the Lake Charles Liquefaction Project as approved by FERC.[160] As set forth herein, this Order authorizes the export of LNG in the full amount requested, up to the equivalent of 121 Bcf/yr of natural gas for FTA and non-FTA countries. The FTA and non-FTA volumes are not additive to one another, as discussed below.

J. Combined FTA and Non-FTA Export Authorization Volumes

LCE is currently authorized in DOE/FE Order No. 2987 to export domestically produced LNG from the Lake Charles Terminal to FTA countries in a volume equivalent to 730 Bcf/yr of natural gas. In light of the maximum liquefaction capacity of the Liquefaction Project as approved by FERC, the FTA export volume authorized in this Order (121 Bcf/yr) is additive to that FTA volume. Under these two orders (DOE/FE Order Nos. 2987 and this Order), LCE is authorized to export a total volume of LNG equivalent to 851 Bcf/yr of natural gas, or 2.33 Bcf/d, to FTA countries.

LCE is also authorized in DOE/FE Order No. 3324-A to export domestically produced LNG from the Lake Charles Terminal to non-FTA countries in a volume equivalent to 730 Bcf/yr of natural gas. In light of the maximum liquefaction capacity of the Liquefaction Project, the non-FTA export volume authorized in this Order (121 Bcf/yr) is additive to that non-FTA volume. Under these two orders (DOE/FE Order Nos. 3324-A and this Order), LCE is authorized to export a total volume of LNG equivalent to 851 Bcf/yr of natural gas, or 2.33 Bcf/d, to non-FTA countries.

[160] *See* 2015 FERC Order at P 10.

Because the source for all of LCE's export authorizations is the Lake Charles Terminal, LCE may not treat its FTA export volumes (authorized in DOE/FE Order No. 2987 and this Order) as additive to its non-FTA export volumes (authorized in DOE/FE Order No. 3324-A and this Order).

Additionally, LCE's affiliate, Lake Charles LNG Export, holds FTA and non-FTA authorizations to export LNG from the Lake Charles Terminal. Because the source of LNG for all of LCE's and Lake Charles LNG Export's authorizations is the Lake Charles Terminal, LCE may not treat any of its export volumes (authorized in DOE/FE Order Nos. 2987, 3324-A, and this Order) as additive to any of Lake Charles LNG Export's export volumes (authorized in DOE/FE Order Nos. 3252-A, 3868, and 4010).

X. FINDINGS

On the basis of the findings and conclusions set forth above, we find that it has not been shown that a grant of the requested authorization will be inconsistent with the public interest, and we further find that LCE's Application should be granted subject to the Terms and Conditions set forth herein. The following Ordering Paragraphs reflect current DOE/FE practice, and apply to both the FTA and non-FTA authorizations in this Order unless otherwise stated.

XI. ORDER

Pursuant to section 3 of the Natural Gas Act, it is ordered that:

A. Lake Charles Exports, LLC (LCE) is authorized to export domestically produced LNG by vessel from the Lake Charles Terminal located in Lake Charles, Louisiana, in a volume equivalent to 121 Bcf/yr of natural gas. LCE is authorized to export this LNG on its own behalf and as agent for other entities that hold title to the natural gas, pursuant to one or more long-term contracts (a contract greater than two years).

B. The LNG authorized for export in this Order may be exported by vessel from the Lake Charles Terminal to any country with the capacity to import ocean-going LNG carriers and with which trade is not prohibited by U.S. law or policy.

C. The 25-year and 20-year periods for the FTA and non-FTA authorizations, respectively, will commence when LCE commences commercial export of domestically sourced LNG from the Lake Charles Terminal, but not before. LCE may export Commissioning Volumes prior to the commencement of the terms of this Order, pursuant to a separate short-term export authorization. The Commissioning Volumes will not be counted against the maximum level of volume authorized in any of LCE's existing FTA and non-FTA orders, including this Order.

D. LCE may continue exporting for a total of three years following the end of the 25-year FTA export term and 20-year non-FTA export term, solely to export any Make-Up Volume that it was unable to export during the original export period. The three-year Make-Up Period allowing the export of Make-Up Volumes does not affect or modify the maximum volume of LNG authorized for export in any of LCE's existing FTA and non-FTA orders, including this Order. Insofar as LCE may seek to export additional volumes not previously authorized for export, it will be required to obtain appropriate authorization from DOE/FE.

E. For the FTA authorization, LCE must commence export operations using the planned liquefaction facilities no later than 10 years from the date of issuance of this Order.

For the non-FTA authorization, LCE must commence export operations using the planned liquefaction facilities no later than seven years from the date of issuance of this Order.

F. The LNG export quantity authorized in this Order is equivalent to a total of 121 Bcf/yr of natural gas for both the FTA and non-FTA authorizations. The FTA quantity is additive only to the export volume in LCE's existing FTA authorization (DOE/FE Order No. 2987). Likewise, the non-FTA quantity is additive only to the export volume in LCE's existing non-FTA authorization (DOE/FE Order No. 3324-A).

This quantity is not additive to the export volume in any of Lake Charles LNG Export's FTA or non-FTA authorizations (DOE/FE Order Nos. 3252-A, 3868, and 4010).

Therefore, under all the FTA and non-FTA authorizations granted to LCE and Lake Charles LNG Export to date, in no event may the export volumes under any combination of authorization holders and/or destination countries exceed the maximum production capacity of the Lake Charles Liquefaction Project (16.45 mtpa of LNG, or 851 Bcf/yr of natural gas), as approved in FERC's 2015 Order.

G. LCE shall ensure that all transactions authorized by this Order are permitted and lawful under United States laws and policies, including the rules, regulations, orders, policies, and other determinations of the Office of Foreign Assets Control of the United States Department of the Treasury and FERC. Failure to comply with this requirement could result in rescission of this authorization and/or other civil or criminal remedies.

H. For the non-FTA authorization, LCE shall ensure compliance with all terms and conditions established by FERC in the EIS, including the 95 environmental conditions adopted in FERC's 2015 Order. Additionally, the non-FTA authorization is conditioned on LCE's on-going compliance with any other preventative and mitigative measures at the Lake Charles Terminal imposed by federal or state agencies.

I. (i) LCE shall file, or cause others to file, with the Office of Regulation and International Engagement a non-redacted copy of <u>all executed long-term contracts associated with the long-term export of LNG</u> as agent for other entities from the Lake Charles Terminal.

The non-redacted copies may be filed under seal and must be filed within 30 days of their execution. Additionally, if LCE has filed the contracts described in the preceding sentence under seal or subject to a claim of confidentiality or privilege, within 30 days of their execution, LCE shall also file, or cause others to file, for public posting either: (a) a redacted version of the contracts described in the preceding sentence, or (b) major provisions of the contracts. In these filings, LCE shall state why the redacted or non-disclosed information should be exempted from public disclosure.

(ii) LCE shall file, or cause others to file, with the Office of Regulation and International Engagement a non-redacted copy of <u>all executed long-term contracts associated with the long-term supply of natural gas</u> to the Lake Charles Terminal. The non-redacted copies may be filed under seal and must be filed within 30 days of their execution. Additionally, if LCE has filed the contracts described in the preceding sentence under seal or subject to a claim of confidentiality or privilege, within 30 days of their execution, LCE shall also file, or cause others to file, for public posting either: i) a redacted version of the contracts described in the preceding sentence, or ii) major provisions of the contracts. In these filings, LCE shall state why the redacted or non-disclosed information should be exempted from public disclosure.

J. LCE, or others for whom LCE acts as agent, shall include the following provision in any agreement or other contract for the sale or transfer of LNG exported pursuant to this Order and any other applicable DOE/FE authorization:

> Customer or purchaser acknowledges and agrees that it will resell or transfer U.S.-sourced natural gas in the form of LNG purchased hereunder for delivery to the countries identified in Ordering Paragraph B of DOE/FE Order No. 4011, issued June 29, 2017, in FE Docket No. 16-110-LNG, and/or to purchasers that have agreed in writing to limit their direct or indirect resale or transfer of such LNG to such countries. Customer or purchaser further commits to cause a report to be provided to Lake Charles Exports, LLC that identifies the country of destination (or countries) into which the exported LNG or natural gas was actually delivered

> and/or received for end use, and to include in any resale contract for such LNG the necessary conditions to insure that Lake Charles Exports, LLC is made aware of all such actual destination countries.

K. LCE is permitted to use its FTA and non-FTA authorizations in this Order to export LNG as agent for other entities, after registering such entities with DOE/FE. Registration materials shall include an acknowledgement and agreement by the Registrant to supply LCE with all information necessary to permit LCE to register that person or entity with DOE/FE, including: (1) the Registrant's agreement to comply with this Order and all applicable requirements of DOE/FE's regulations at 10 C.F.R. Part 590, including but not limited to destination restrictions; (2) the exact legal name of the Registrant, state/location of incorporation/registration, primary place of doing business, and the Registrant's ownership structure, including the ultimate parent entity if the Registrant is a subsidiary or affiliate of another entity; (3) the name, title, mailing address, e-mail address, and telephone number of a corporate officer or employee of the Registrant to whom inquiries may be directed; and (4) within 30 days of execution, a copy of any long-term contracts not previously filed with DOE/FE, described in Ordering Paragraph I of this Order.

L. Each registration submitted pursuant to this Order shall have current information on file with DOE/FE. Any changes in company name, contact information, change in term of the long-term contract, termination of the long-term contract, or other relevant modification, shall be filed with DOE/FE within 30 days of such change(s).

M. LCE shall ensure that all persons required by this Order to register with DOE/FE have done so. Any failure by LCE to ensure that all such persons or entities are registered with DOE/FE shall be grounds for rescinding in whole or in part the FTA and non-FTA authorizations in this Order.

N. Within two weeks after the first export of domestically produced LNG occurs from the Lake Charles Terminal, LCE shall provide written notification of the date that the first export of LNG authorized in Ordering Paragraph A above occurred.

O. LCE shall file with the Office of Regulation and International Engagement, on a semi-annual basis, written reports describing the progress of the proposed Liquefaction Project. The reports shall be filed on or by April 1 and October 1 of each year, and shall include information on the progress of the Liquefaction Project, the date the Liquefaction Project is expected to be operational, and the status of the long-term contracts associated with the long-term export of LNG and any long-term supply contracts.

P. With respect to any change in control of the authorization holder, LCE must comply with DOE/FE's Procedures for Change in Control Affecting Applications and Authorizations to Import or Export Natural Gas.[161] For purposes of this Ordering Paragraph, a "change in control" shall include any change, directly or indirectly, of the power to direct the management or policies of LCE, whether such power is exercised through one or more intermediary companies or pursuant to an agreement, written or oral, and whether such power is established through ownership or voting of securities, or common directors, officers, or stockholders, or voting trusts, holding trusts, or debt holdings, or contract, or any other direct or indirect means.[162]

Q. Monthly Reports: With respect to the LNG exports authorized by this Order, LCE shall file with the Office of Regulation and International Engagement, within 30 days following the last day of each calendar month, a report indicating whether exports of LNG have been made. The first monthly report required by this Order is due not later than the 30th day of the month following the month of first export. In subsequent months, if exports have not occurred, a report

[161] *See* Procedures for Changes in Control at 65,541-42.
[162] *See id*. at 65,542.

of "no activity" for that month must be filed. If exports of LNG have occurred, the report must give the following details of each LNG cargo: (1) the name(s) of the authorized exporter registered with DOE/FE; (2) the name of the U.S. export terminal; (3) the name of the LNG tanker; (4) the date of departure from the U.S. export terminal; (5) the country (or countries) into which the exported LNG or natural gas is actually delivered and/or received for end use; (6) the name of the supplier/seller; (7) the volume in Mcf; (8) the price at point of export per million British thermal units (MMBtu); (9) the duration of the supply agreement; and (10) the name(s) of the purchaser(s).

(Approved by the Office of Management and Budget under OMB Control No. 1901-0294)

R. All monthly report filings shall be made to U.S. Department of Energy (FE-34), Office of Fossil Energy, Office of Regulation and International Engagement, P.O. Box 44375, Washington, D.C. 20026-4375, Attention: Natural Gas Reports. Alternatively, reports may be e-mailed to ngreports@hq.doe.gov or may be faxed to Natural Gas Reports at (202) 586-6050.

S. API's unopposed motion to intervene in this proceeding is deemed granted by operation of law. 10 C.F.R. § 590.303(g).

Issued in Washington, D.C., on June 29, 2017.

John A. Anderson
Director, Office of Regulation and International Engagement
Office of Oil and Natural Gas
Office of Fossil Energy