



[6450-01-P]

DEPARTMENT OF ENERGY

Sabine Pass Liquefaction, LLC	[FE Docket No. 10-111-LNG]
Freeport LNG Expansion, L.P. et al.	[FE Docket No. 10-161-LNG]
Lake Charles Exports, LLC	[FE Docket No. 11-59-LNG]
Dominion Cove Point LNG, LP	[FE Docket No. 11-128-LNG]
Freeport LNG Expansion, L.P. et al.	[FE Docket No. 11-161-LNG]
Cameron LNG, LLC	[FE Docket No. 11-162-LNG]
Southern LNG Company, LLC	[FE Docket No. 12-100-LNG]
Gulf LNG Liquefaction Company, LLC	[FE Docket No. 12-101-LNG]
Jordan Cove Energy Project, L.P.	[FE Docket No. 12-32-LNG]
CE FLNG, LLC	[FE Docket No. 12-123-LNG]
Golden Pass Products, LLC	[FE Docket No. 12-156-LNG]
Lake Charles LNG Export Co.	[FE Docket No. 13-04-LNG]
MPEH LLC	[FE Docket No. 13-26-LNG]
Cheniere Marketing LLC and Corpus Christi Liquefaction, LLC	[FE Docket Nos. 13-30-LNG, 13-42 LNG, & 13-121-LNG]
Venture Global Calcasieu Pass	[FE Docket Nos. 13-69-LNG, 14-88-LNG, & 15-25 LNG]
Eos LNG LLC	[FE Docket No. 13-116-LNG]
Barca LNG LLC	[FE Docket No. 13-118-LNG]
Magnolia LNG, LLC	[FE Docket No. 13-132-LNG]
Delfin LNG, LLC	[FE Docket No. 13-147-LNG]
Commonwealth LNG, LLC	[FE Docket No. 13-153-LNG]
SCT&E LNG, LLC	[FE Docket No. 14-98-LNG]
Pieridae Energy (USA) Ltd.	[FE Docket No. 14-179-LNG]
Bear Head LNG Corporation and Bear Head LNG (USA)	[FE Docket No. 15-33-LNG]
G2 LNG LLC	[FE Docket No. 15-45-LNG]
Texas LNG Brownsville LLC	[FE Docket No. 15-62-LNG]
Sabine Pass Liquefaction, LLC	[FE Docket No. 15-63-LNG]
Cameron LNG, LLC	[FE Docket No. 15-90-LNG]
Port Arthur LNG, LLC	[FE Docket No. 15-96-LNG]
Rio Grande LNG, LLC	[FE Docket No. 15-190-LNG]
Venture Global Plaquemines LNG, LLC	[FE Docket No. 16-28-LNG]
Freeport LNG Expansion, L.P., et al.	[FE Docket No. 16-108-LNG]
Lake Charles LNG Export Co.	[FE Docket No. 16-109-LNG]
Lake Charles Exports, LLC	[FE Docket No. 16-110-LNG]
Driftwood LNG LLC	[FE Docket No. 16-144-LNG]
Fourchon LNG, LLC	[FE Docket No. 17-105-LNG]
Galveston Bay LNG, LLC	[FE Docket No. 17-167-LNG]
Freeport LNG Expansion, L.P., et al.	[FE Docket No. 18-26-LNG]
Corpus Christi Liquefaction Stage III, LLC	[FE Docket No. 18-78-LNG]
Mexico Pacific Limited LLC	[FE Docket No. 18-70-LNG]
Energía Costa Azul, S. de R.L. de C.V.	[FE Docket No. 18-144-LNG]

Energía Costa Azul, S. de R.L. de C.V.
Annova LNG Common Infrastructure, LLC

[FE Docket No. 18-145-LNG]
[FE Docket No. 19-34-LNG]

Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States: 2019 Update

AGENCY: Office of Fossil Energy, Department of Energy.

ACTION: Notice of availability of report entitled Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States: 2019 Update, and request for comments.

SUMMARY: The Office of Fossil Energy (FE) of the Department of Energy (DOE) gives notice of the availability of the Report Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States: 2019 Update, dated September 12, 2019 (LCA GHG Update), in the above-referenced proceedings and invites the submission of comments regarding the LCA GHG Update. This analysis is an update to DOE's 2014 LCA GHG Report. The purpose of this LCA GHG is to provide additional information to the public and to inform DOE's decisions regarding the life cycle greenhouse gas emissions of U.S. liquefied natural gas (LNG) exports for use in electric power generation.

DATES: Comments are to be filed using procedures detailed in the **Public Comment** section no later than 4:30 p.m., Eastern Time, [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]. All comments received need only be submitted once, as they will be placed in the administrative record for each of the above-referenced proceedings.

ADDRESSES:

Electronic Filing of Comments Using Online Form:
<https://fossil.energy.gov/app/docketindex/docket/index/21>

Regular Mail

U.S. Department of Energy (FE-34)
Attn: LCA GHG Update Comments
Office of Regulation, Analysis, and Engagement

Office of Fossil Energy
P.O. Box 44375
Washington, DC 20026-4375

Hand Delivery or Private Delivery Services (e.g., FedEx, UPS, etc.)

U.S. Department of Energy (FE-34)
Attn: LCA GHG Update Comments
Office of Regulation, Analysis, and Engagement
Office of Fossil Energy
Forrestal Building, Room 3E-042
1000 Independence Avenue, SW
Washington, DC 20585

FOR FURTHER INFORMATION CONTACT:

Amy Sweeney
U.S. Department of Energy (FE-34)
Office of Regulation, Analysis, and Engagement
Office of Fossil Energy
Forrestal Building, Room 3E-042
1000 Independence Avenue, SW
Washington, DC 20585
(202) 586-2627
amy.sweeney@hq.doe.gov

Cassandra Bernstein
U.S. Department of Energy (GC-76)
Office of the Assistant General Counsel for
Electricity and Fossil Energy
Forrestal Building,
1000 Independence Avenue, SW
Washington, DC 20585
(202) 586-9793
cassandra.bernstein@hq.doe.gov

SUPPLEMENTARY INFORMATION:

Background

Section 3(a) of the Natural Gas Act, 15 U.S.C. 717b(a), directs DOE to authorize proposed exports of natural gas, including LNG, to any country with which the United States does not have 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 (non-FTA countries), unless DOE finds that the proposed exportation will not be consistent with the public interest.

Of the 42 long-term proceedings identified above, 16 involve pending applications requesting authorization to export U.S. LNG on water-borne vessels from the lower-48 states to non-FTA countries. In the remaining 26 proceedings, DOE already has issued a long-term order authorizing exports of LNG under NGA section 3(a).

The LCA GHG Update

On June 4, 2014, DOE issued the original LCA GHG Report,¹ entitled *Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States*.² At DOE's request, the National Energy Technology Laboratory (NETL)—a DOE applied research laboratory—prepared the LCA GHG Report to calculate the life cycle GHG emissions for LNG exported from the United States. DOE received public comments on the LCA GHG Report, and responded to those comments in export authorizations issued under NGA section 3(a).³

In 2018, DOE commissioned NETL to conduct an update to the LCA GHG Report, referred to herein as the LCA GHG Update. The purpose of this Notice is to post the LCA GHG Update in the above-referenced proceedings and to invite public comment on the LCA GHG Update, as applied to the pending applications and existing orders described above.

As with the 2014 Report, the LCA GHG Update compares life cycle GHG emissions from U.S. LNG exports to regional coal and other imported natural gas for electric power generation in

¹ As used in this Notice, “LCA” stands for life cycle analysis, and “GHG” stands for greenhouse gas.

² U.S. Dep’t of Energy, *Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas From the United States*, 79 FR 32260 (June 4, 2014). DOE/FE announced the availability of the LCA GHG Report on its website on May 29, 2014.

³ See, e.g., *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, at 95-121 (Nov. 30, 2016) (description of LCA GHG Report and response to comments); see also *Sierra Club v. U.S. Dep’t of Energy*, 867 F.3d 189, 195, 201-02 (Aug. 15, 2017) (discussing LCA GHG Report in denying petition for review of export authorization).

Europe and Asia. Although core aspects of the analysis—such as the scenarios investigated—are the same as the LCA GHG Report, NETL made the following updates:

- Incorporated NETL’s most recent characterization of upstream natural gas production (NETL, 2019);⁴
- Updated the unit processes for liquefaction, ocean transport, and regasification characterization using engineering-based models and publicly-available data informed and reviewed by existing LNG export facilities, where possible; and
- Updated the 100-year global warming potential (GWP) for methane to reflect the current Intergovernmental Panel on Climate Change’s (IPCC) Fifth Assessment Report (AR5).

The primary questions addressed by the LCA GHG Update are:

- How does exported LNG from the United States compare with regional coal (or other LNG sources) for electric power generation in Europe and Asia, from a life cycle GHG perspective?
- How do those results compare with natural gas sourced from Russia and delivered to the same European and Asian markets via pipeline?

To address these questions, NETL applied its LCA model to represent unconventional natural gas production and transportation to a U.S. Gulf Coast liquefaction facility, liquefaction of the natural gas at the facility, and transportation of the LNG to an import terminal in Rotterdam, Netherlands, to represent a European market, and to an import terminal in Shanghai, China, to represent Asian markets. LNG produced in Algeria was modeled to represent an alternative regional LNG

⁴ Nat’l Energy Technology Laboratory, *Life Cycle Analysis of Natural Gas Extraction and Power Generation* (DOE/NETL 2019/2039) (Apr. 19, 2019), available at: <https://www.netl.doe.gov/energy-analysis/details?id=3198>.

European market supply source with a destination of Rotterdam. LNG from Darwin, Australia, was modeled to represent an alternative regional LNG Asian market supply source with a destination of Shanghai. Conventional natural gas extracted from the Yamal region of Siberia in Russia was modeled as the regional pipeline gas alternative for both the European and Asian markets. Regional coal production and consumption in Germany and China were also modeled. NETL used a parametric model for the scenarios to account for variability in supply chain characteristics and power plant efficiencies.

As described in the LCA GHG Update, NETL determined that the use of U.S. LNG exports for power production in European and Asian markets will not increase GHG emissions from a life cycle perspective, when compared to regional coal extraction and consumption for power production.

Public Comment

In response to this Notice, any person may file comments addressing the LCA GHG Update. Comments submitted in compliance with the instructions in this Notice will be placed in the administrative record for all of the above-referenced proceedings and need only be submitted once.

DOE is not establishing a new proceeding or docket in this Notice. Additionally, the submission of comments in response to this Notice will not make commenters parties to any of the affected dockets. Persons with an interest in the outcome of one or more of the affected dockets already have been given an opportunity to intervene in or protest those matters by complying with the procedures established in the notice of application issued in each respective docket and published in the *Federal Register*.

Comments may be submitted using one of the following methods:

(1) Submitting the comments using the online form at

<https://fossil.energy.gov/app/docketindex/docket/index/21>

(2) Mailing an original and three paper copies of the filing to the Office of Regulation, Analysis, and Engagement at the address listed in **ADDRESSES**; or

(3) Hand delivering an original and three paper copies of the filing to the Office of Regulation, Analysis, and Engagement at the address listed in **ADDRESSES**.

For administrative efficiency, DOE/FE prefers comments to be filed electronically using the online form (method 1). All comments must include a reference to “LCA GHG Update” in the title line. Comments must be limited to the issues and potential impacts addressed in the LCA GHG Update, and DOE may disregard comments that are not germane.

The record in the above-referenced proceedings will include all comments received in response to this Notice. DOE will review the comments received on a consolidated basis, and no reply comments will be accepted.

Additionally, all comments filed in response to this Notice will be available on the following DOE/FE website:

<https://fossil.energy.gov/app/docketindex/docket/index/21>

The LCA GHG Update and other relevant documents are available electronically at (*<https://fossil.energy.gov/app/docketindex/docket/index/21>*) and for inspection and copying in the Division of Natural Gas Regulation docket room, Room 3E-042, 1000 Independence Avenue, SW., Washington, DC 20585. The docket room is open between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays.

Signed in Washington, D.C., on September 13, 2019.

Steven Winberg,
Assistant Secretary,
Office of Fossil Energy.

[FR Doc. 2019-20230 Filed: 9/18/2019 8:45 am; Publication Date: 9/19/2019]