

UNITED STATES OF AMERICA
DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY AND CARBON MANAGEMENT

ALASKA LNG PROJECT LLC	)	DOCKET NO. 14-96-LNG
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ORDER AFFIRMING AND AMENDING
DOE/FE ORDER NO. 3643-A FOLLOWING
PARTIAL GRANT OF REHEARING

DOE/FECM ORDER NO. 3643-C

APRIL 13, 2023

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FREQUENTLY USED ACRONYMS

AGDC	Alaska Gasline Development Corporation
Bcf/yr	Billion Cubic Feet per Year
CO ₂	Carbon Dioxide
DOE	U.S. Department of Energy
DSEIS	Draft Supplemental Environmental Impact Statement
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FE	Office of Fossil Energy (prior to July 4, 2021)
FECM	Office of Fossil Energy and Carbon Management
FERC	Federal Energy Regulatory Commission
FTA	Free Trade Agreement
GHG	Greenhouse Gas
LCA	Life Cycle Analysis
LNG	Liquefied Natural Gas
NEPA	National Environmental Policy Act
NETL	National Energy Technology Laboratory
NGA	Natural Gas Act
ROD	Record of Decision
SEIS	Supplemental Environmental Impact Statement

I. INTRODUCTION AND BACKGROUND

On August 20, 2020, the Department of Energy's (DOE) Office of Fossil Energy (now the Office of Fossil Energy and Carbon Management)¹ issued DOE/FE Order No. 3643-A² (the Alaska LNG Order) to Alaska LNG Project LLC (Alaska LNG)³ under section 3(a) of the Natural Gas Act (NGA).⁴ DOE authorized Alaska LNG to export liquefied natural gas (LNG) produced from Alaskan sources to any country with which the United States has not 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 (non-FTA countries).⁵ Alaska LNG is authorized to export this LNG in a volume equivalent to 929 billion cubic feet per year (Bcf/yr) of natural gas (2.55 Bcf per day), by vessel from a liquefaction facility to be constructed by Alaska Gasline Development Corporation (AGDC) in the Nikiski area of the Kenai Peninsula in south central Alaska (Liquefaction Facility).⁶ AGDC is an independent, public corporation of the State of Alaska provided with authority to develop a LNG project on the State's behalf.⁷

¹ The Office of Fossil Energy changed its name to the Office of Fossil Energy and Carbon Management (FECM) on July 4, 2021.

² *Alaska LNG Project LLC*, DOE/FE Order No. 3643-A, Docket 14-96-LNG, Final Opinion and Order Granting Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Nations (Aug. 20, 2020), <https://www.energy.gov/sites/default/files/2020/08/f77/ord3643a.pdf> [hereinafter Alaska LNG Order]. DOE included a Record of Decision as an appendix to the Alaska LNG Order. DOE uses the terms "order" and "authorization" interchangeably.

³ Alaska LNG is a Delaware limited liability company with its principal place of business in Anchorage, Alaska. Its member companies are ExxonMobil Alaska LNG LLC, ConocoPhillips Alaska LNG Company, and Hilcorp Alaska, LLC. See U.S. Dep't of Energy, Response to Notification Regarding Change in Control (Alaska LNG Project LLC), Docket No. 14-96-LNG, at 2 (Aug. 12, 2020).

⁴ 15 U.S.C. § 717b(a). 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 FECM in Redelegation Order No. S4- DEL-FE1-2022, issued on June 13, 2022.

⁵ 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. In DOE/FE Order No. 3554, Alaska LNG is authorized to export LNG from the Alaska LNG Project to FTA countries pursuant to NGA section 3(c), 15 U.S.C. § 717b(c). That FTA order is not at issue.

⁶ See Alaska LNG Order at 40-41 (Ordering Para. A).

⁷ See *id.* at 1 & nn.6-7.

The proposed Liquefaction Facility is one part of the Alaska LNG Project that also includes: (i) a proposed natural gas treatment plant to be located on the North Slope of Alaska to produce natural gas from stranded resources on the North Slope, and (ii) a proposed 800-mile long pipeline to transport the natural gas from the North Slope production facility to the Liquefaction Facility for liquefaction and export.⁸ On May 21, 2020, the Federal Energy Regulatory Commission (FERC) issued an order under NGA section 3 authorizing AGDC to site, construct, and operate the Alaska LNG Project (FERC Order).⁹ Thus, AGDC, as the project sponsor, holds the FERC authorization for the Alaska LNG Project, and Alaska LNG holds the DOE authorization to export LNG from the Alaska LNG Project.¹⁰ In total, Alaska LNG is authorized to export LNG from the Project for a total of 33 years—a 30-year export term, with an additional three-year Make-Up Period to export any LNG that it was unable to export during the 30-year export term.¹¹

On September 21, 2020, intervenor Sierra Club timely filed a Request for Rehearing of the Alaska LNG Order.¹² In response, DOE issued a Notice Providing for Further Consideration

⁸ Despite abundant supplies of natural gas on the North Slope, most of Alaska’s natural gas production cannot be brought to market due to a lack of natural gas pipeline infrastructure. North Slope natural gas currently remains an undeveloped or “stranded” resource base. *See id.* at 28.

⁹ *See Alaska Gasline Dev. Corp.*, Order Granting Authorization Under Section 3 of the Natural Gas Act, 171 FERC ¶ 61,134 at P 1 (2020) [hereinafter FERC Order], *reh’g denied* 172 FERC ¶ 61,214 (2020). Sierra Club, together with other environmental organizations, have challenged the FERC Order in the U.S. Court of Appeals for the District of Columbia Circuit. That case remains pending. *Ctr. for Biological Diversity, et al. v. Fed. Energy Regulatory Comm’n*, No. 20-1379 (D.C. Cir.) (oral argument held on Sept. 14, 2022).

¹⁰ AGDC previously stated that it is in negotiations with the producer members of Alaska LNG Project LLC to obtain an option to purchase the LLC, which holds the DOE export authorizations and also owns the land for the Liquefaction Facility site. *See* Alaska LNG Order at 1 n.7 (citing FERC Order at P 5). To DOE’s knowledge, this transaction has not yet been finalized. *See, e.g.*, Alaska LNG Project LLC, Semi-Annual Report, Docket No. 14-96-LNG (Oct. 1, 2022).

¹¹ *See* Alaska LNG Order at 41 (Ordering Paras. A, C). Additionally, Alaska LNG is required to commence export operations from the Project to non-FTA countries within 12 years of the date that the Order was issued, *i.e.*, by August 20, 2032. *See id.* (Ordering Para. D).

¹² Sierra Club, Request for Rehearing, Docket No. 14-96-LNG (Sept. 21, 2020) [hereinafter Sierra Club Rehearing Request]. AGDC (also an intervenor) filed a Motion for Leave to Answer and Answer to Sierra Club’s Request for Rehearing, which DOE granted. *See* Alaska Gasline Dev. Corp., Motion for Leave to Answer and Answer to Sierra Club’s Request for Rehearing, Docket No. 14-96-LNG (Oct. 6, 2020).

of Request for Rehearing and Motion for Leave to Answer on October 20, 2020,¹³ followed by an Order on Rehearing (DOE/FE Order No. 3643-B) on April 15, 2021 (Rehearing Order).¹⁴ Sierra Club also filed a petition for review challenging the Alaska LNG Order in the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit), and that case is currently being held in abeyance in light of this rehearing proceeding.¹⁵

In the Rehearing Order, DOE granted Sierra Club’s Request for Rehearing in part—specifically, to conduct two Alaska-specific environmental studies and the related public process (then-called the Alaska environmental study proceeding) to evaluate potential impacts of exporting LNG from the proposed Alaska LNG Project to non-FTA countries.¹⁶ DOE stated that, based on findings from this analysis, DOE intended to issue an order under NGA section 3(a) “in which DOE may exercise its authority to reaffirm, modify, or set aside the Alaska LNG Order.”¹⁷ DOE denied Sierra Club’s request to withdraw the Alaska LNG Order pending completion of the rehearing proceeding, and thus the Alaska LNG Order has remained in effect.¹⁸

Subsequently, on July 2, 2021, DOE provided notice in the *Federal Register* that it intended to prepare a supplemental environmental impact statement (SEIS) for the Alaska

¹³ *Alaska LNG Project LLC*, Notice Providing for Further Consideration of Request for Rehearing and Motion for Leave to Answer, Docket No. 14-96-LNG, at 2 (Oct. 20, 2020) (citing *Allegheny Def. Project v. FERC*, 964 F.3d 1 (D.C. Cir. 2020)).

¹⁴ See *Alaska LNG Project LLC*, DOE/FE Order No. 3643-B, Docket No. 14-96-LNG, Order on Rehearing (Apr. 15, 2021), <https://www.energy.gov/sites/default/files/2021-04/ord3643b.pdf> [hereinafter Rehearing Order].

¹⁵ See *Sierra Club v. U.S. Dep’t of Energy*, No. 20-1503, Order (D.C. Cir. June 30, 2021). The D.C. Circuit directed DOE to file status reports in 60-day intervals. DOE submitted its most recent status report on February 27, 2023.

¹⁶ See Rehearing Order at 2, 13-15, 18.

¹⁷ *Id.* at 18. When DOE is acting on a request for rehearing, it has the power to “modify or set aside, in whole or in part, any finding or order” until such time as the record in the proceeding has been filed in a court of appeals. 15 U.S.C. § 717r(a); see also Rehearing Order at 12.

¹⁸ See Rehearing Order at 15-18.

environmental study proceeding (DOE/EIS-0512-S1) under the National Environmental Policy Act (NEPA).¹⁹ DOE stated that the SEIS would include two components:

- (1) An upstream analysis of potential environmental impacts associated with natural gas production on the North Slope of Alaska, which will examine upstream impacts associated with incremental natural gas production on the North Slope of Alaska due to Alaska LNG's exports of LNG; and
- (2) A life cycle analysis (LCA) calculating the greenhouse gas (GHG) emissions for LNG exported from the proposed Alaska LNG Project (taking into account unique issues relating to production, pipeline transportation, and liquefaction in Alaska) and examining the life cycle GHG emissions for LNG exported from Alaska by vessel to import markets in Asia (the markets targeted for exports from Alaska) and potentially in other regions.²⁰

DOE also announced that it had commissioned DOE's National Energy Technology Laboratory (NETL) to conduct both studies.²¹

On June 29, 2022, DOE published a Notice of Availability for the Draft SEIS (or DSEIS) in the *Federal Register* and invited public comment on the Draft SEIS for a 45-day period that commenced on July 1, 2022, and ended on August 15, 2022.²² On August 15, 2022, Cook Inletkeeper and Center for Biological Diversity (collectively, Movants) mailed DOE a motion to

¹⁹ 42 U.S.C. § 4321 *et seq.*; see U.S. Dep't of Energy, Notice of Intent to Prepare a Supplemental Environmental Impact Statement for the Alaska LNG Project, 86 Fed. Reg. 35,280 (July 2, 2021), <https://www.energy.gov/sites/default/files/2021-07/noi-eis-0512-s1-alaska-lng-seis-2021-07-02.pdf> [hereinafter NOI].

²⁰ See *id.* at 35,281. DOE previously has explained that a LCA is a method of accounting for cradle-to-grave GHG emissions over a single common denominator. DOE considers GHG emissions from all processes in the LNG supply chains—from the “cradle” when natural gas is extracted from the ground, to the “grave” when electricity is used by the consumer. See Rehearing Order at 14 n.90.

²¹ See NOI at 35,281. On August 24, 2021, DOE issued a Notice of Schedule (as subsequently amended) setting forth DOE's projected schedule for completing the SEIS and issuing a final order and record of decision in response to Sierra Club's Rehearing Request. See *Alaska LNG Project LLC*, Notice of Schedule for Supplemental Environmental Impact Statement, Docket 14-96-LNG (Aug. 24, 2021) (amended on Feb. 25, 2022, Oct. 28, 2022, and Mar. 29, 2023).

²² See U.S. Dep't of Energy, Notice of Availability for the Draft Supplemental Environmental Impact Statement for the Alaska LNG Project, 87 Fed. Reg. 38,730 (June 29, 2022), <https://www.govinfo.gov/content/pkg/FR-2022-06-29/pdf/2022-13869.pdf> [hereinafter Notice of Availability for Draft SEIS] (inviting public comment and announcing virtual public meeting).

intervene in the Alaska LNG docket.²³ Movants concurrently submitted comments on the Draft SEIS—filed jointly with Sierra Club and Earthjustice—in accordance with the instructions set forth in the Notice of Availability.²⁴ In the motion, Movants request leave to intervene “in the proceedings for the Alaska LNG Project” to address issues raised by the Draft SEIS—specifically, to argue that the Draft SEIS does not satisfy NEPA.²⁵ On August 30, 2022, AGDC submitted an “Answer in Opposition to Motion for Late Intervention of Cook Inletkeeper and Center for Biological Diversity,” urging DOE to reject the Movants’ motion.²⁶ After considering the impact of granting the motion on AGDC and other parties, DOE finds that Movants have shown good cause for seeking to intervene out of time. Therefore, as explained below, DOE grants Movants’ motion to intervene under 10 C.F.R. §§ 590.303(d) and (h).²⁷

On January 6, 2023, following DOE’s review of the comments received in response to the Draft SEIS and its completion of additional technical analysis, DOE issued a Notice of Availability for the Final SEIS.²⁸ The Final SEIS supplemented the EIS that FERC had prepared

²³ See Cook Inletkeeper and Center for Biological Diversity, Motion to Intervene, Docket No. 14-96-LNG, at 1 (Aug. 19, 2022) [hereinafter Cook Inletkeeper and Center for Biological Diversity Mot.]; see also U.S. Dep’t of Energy, Supp. Info. Concerning Cook Inletkeeper and Center for Biological Diversity Motion to Intervene, Docket No. 14-96-LNG (Sept. 26, 2022) (Docket Index #31, summarizing facts regarding DOE’s receipt of Movants’ motion to intervene with supporting correspondence).

²⁴ See Sierra Club, *et al.*, Comments on the Draft Supplemental Environmental Impact Statement for the Alaska LNG Project (Aug. 15, 2022), <https://www.regulations.gov/comment/DOE-HQ-2022-0019-0172> [hereinafter Sierra Club, *et al.* Comments on Draft SEIS]. As stated above, Sierra Club previously intervened in this proceeding. Earthjustice is not a party to this proceeding.

²⁵ See Cook Inletkeeper and Center for Biological Diversity Mot. at 3-4.

²⁶ Alaska Gasline Dev. Corp., Answer in Opposition to Motion for Late Intervention of Cook Inletkeeper and Center for Biological Diversity, Docket No. 14-96-LNG (Aug. 30, 2022) [hereinafter AGDC Answer].

²⁷ See *infra* §§ II, IV.A, V (Ordering Para. C). DOE’s regulation at 10 C.F.R. § 590.303(d) allows the Assistant Secretary to accept late-filed motions to intervene “for good cause shown and after considering the impact of granting the late motion [on] the proceeding,” and 10 C.F.R. § 590.303(h) requires that a movant granted late intervention “shall accept the record of the proceeding as it was developed prior to the intervention.”

²⁸ See U.S. Dep’t of Energy, Alaska LNG Project, Final Environmental Impact Statement (Jan. 2023), <https://www.energy.gov/nepa/articles/doeeis-0512-s1-final-supplemental-environmental-impact-statement-january-6-2023> [hereinafter Final SEIS].

for the Alaska LNG Project in 2020, which DOE had adopted on March 16, 2020, to inform its decision in the Alaska LNG Order and to meet its obligations under NEPA.²⁹

Consistent with its statements in the Rehearing Order, DOE is issuing this Order following its publication of the Final SEIS. As an Appendix to this Order, DOE is issuing an Amended Record of Decision (ROD) under NEPA for the proposed Alaska LNG Project. The Amended ROD presents in more detail the relevant factual and procedural background for the Alaska LNG Project, the SEIS analysis and public process, comments submitted on the Final SEIS by the U.S. Environmental Protection Agency (EPA) and DOE's responses thereto, and other information considered by DOE pursuant to NEPA that informs DOE's decision in this Order.

Upon review, DOE finds that the environmental impacts presented in the Final SEIS are not sufficient to alter DOE's determination under NGA section 3(a) that exports of LNG from the proposed Alaska LNG Project to non-FTA countries are not inconsistent with the public interest, as set forth in the Alaska LNG Order (Order No. 3643-A) issued on August 20, 2020. Accordingly, DOE affirms the conclusions in the Alaska LNG Order (and the supporting Record of Decision) with one modification—an amendment recommended by Sierra Club in their joint comments submitted with Earthjustice and Movants on the Draft SEIS.³⁰ Specifically, DOE is imposing a new requirement—Ordering Paragraph Q—that directs Alaska LNG to certify to DOE, as part of its monthly report, that natural gas produced for export in the form of LNG in the prior month did not result in the venting of byproduct carbon dioxide (CO₂) into the

²⁹ Fed. Energy Regulatory Comm'n, *Alaska LNG Project Final Environmental Impact Statement*, Docket No. CP17-178-000 (Mar. 6, 2020), <https://www.ferc.gov/industries-data/natural-gas/final-environmental-impact-statement-0> [hereinafter EIS]; see Alaska LNG Order at 5.

³⁰ Sierra Club, *et al.* Comments on Draft SEIS at 14-15 (recommending that DOE impose a requirement that “AGDC [sic] may only export [natural] gas if it ensures and demonstrates that the byproduct CO₂ produced alongside this gas was not vented.”).

atmosphere, unless required for emergency, maintenance, or operational exigencies and in compliance with the FERC Order for the Alaska LNG Project.³¹ DOE believes that this venting prohibition will reduce emissions of GHGs from the Alaska LNG Project beyond what may have occurred under the Alaska LNG Order.³² In all other respects, the Ordering Paragraphs in the Alaska LNG Order (Order No. 3643-A) remain unchanged.³³

II. MOTION TO INTERVENE FILED OUT OF TIME

A. Cook Inletkeeper and Center for Biological Diversity's Motion to Intervene

The Notice of Availability for the Draft SEIS stated that “DOE will consider all comments postmarked or received during the public comment period [*i.e.*, by the August 15, 2022 deadline] when preparing the Final SEIS.”³⁴ Movants postmarked their motion to intervene to DOE on August 15, 2022, the last day of the comment period for the Draft SEIS and the same day that Movants submitted joint comments on the Draft SEIS with Sierra Club and Earthjustice.³⁵

Movants state that their interests are affected by the proposed Alaska LNG Project. Cook Inletkeeper states that it is “a private community-based nonprofit organization dedicated to protecting the vast Cook Inlet watershed [in Alaska] and the life it sustains.”³⁶ Cook Inletkeeper further states that it “has thousands of members and supporters throughout the Cook Inlet watershed who depend on healthy fisheries and tourism businesses in Cook Inlet.”³⁷ The Center for Biological Diversity states that it is a non-profit group with more than 89,610 active members

³¹ See *infra* § V (Ordering Para. A).

³² See Final SEIS at 4.19-12.

³³ See *infra* § V (Ordering Para. B).

³⁴ See Notice of Availability for Draft SEIS, 87 Fed. Reg. at 38,730.

³⁵ See *supra* notes 23-24.

³⁶ Cook Inletkeeper and Center for Biological Diversity Mot. at 1.

³⁷ *Id.*

who live in Alaska and throughout the United States, as well as in other countries.³⁸ The Center for Biological Diversity states that it works to ensure the long-term health of animal and plant communities and to protect the habitats species need to survive.³⁹ Together, Movants assert that they and their members have “direct interests in avoiding the environmental harms the Alaska LNG Project will cause.”⁴⁰ Among other alleged harms, Movants maintain that their members’ use and enjoyment of Cook Inlet, the North Slope, and other parts of the project area across Alaska “would be harmed by the environmental and aesthetic impacts” of the Alaska LNG Project.⁴¹

According to Movants, “the analyses and disclosures in [DOE’s] DSEIS [Draft Supplemental EIS] do not satisfy NEPA and, if corrected, would demonstrate that the proposal is contrary to the public interest.”⁴² To support their motion, Movants cite DOE’s regulation governing intervention, 10 C.F.R. § 590.303, which states that motions to intervene may be filed “no later than the date fixed for filing such motions or notices in the applicable [FECM] notice or order, unless a later date is permitted ... for good cause shown and after considering the impact of granting the late motion of the proceeding.”⁴³

Movants assert that good cause exists for their late intervention “because it was submitted during the DSEIS comment period and was prompted by issues and positions raised for the first time in the DSEIS.”⁴⁴ According to Movants, “on November 17, 2014, when motions to intervene were initially due in this proceeding, DOE had not prepared or foreshadowed any

³⁸ *See id.* at 1-2.

³⁹ *Id.* at 2.

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² Cook Inletkeeper and Center for Biological Diversity Mot. at 3 (referencing their joint comments filed on the Draft SEIS for greater detail).

⁴³ 10 C.F.R. § 590.303(d); *see* Cook Inletkeeper and Center for Biological Diversity Mot. at 3.

⁴⁴ Cook Inletkeeper and Center for Biological Diversity Mot. at 3.

analysis purporting to evaluate the Alaska LNG Project’s life cycle greenhouse gas emissions.”⁴⁵

Movants assert that granting their motion to intervene would serve NEPA’s purposes “by protecting [their] full participation in the NEPA process, including, if appropriate, the opportunity to request rehearing by the Department.”⁴⁶

Next, Movants argue that their late intervention “would have no undue impact on the proceedings because [they] only seek to pursue issues raised in the NEPA process.”⁴⁷ Movants maintain that, “[w]henver possible,” they “will endeavor to coordinate joint filings with Sierra Club—who is already a party—further reducing any impact on the proceedings.”⁴⁸ Movants also cite a FERC regulation, 18 C.F.R. § 380.10(a)(1)(i)), which (according to Movants) specifies that “intervention is not late when prompted by an EIS.”⁴⁹ Movants ask DOE to grant their requested intervention here under the same reasoning as the FERC regulation.⁵⁰

B. AGDC’s Answer in Opposition to Motion to Intervene Out of Time

On August 30, 2022, AGDC filed a timely Answer opposing Movants’ motion to intervene.⁵¹ First, AGDC argues that Movants “have not shown good cause to intervene in this proceeding nearly eight years after it began.”⁵² AGDC contends that Movants “had ample opportunity to intervene to protect its interests not only eight years ago”—when DOE established November 17, 2014, as the deadline for interventions on Alaska LNG’s Application⁵³—“but at

⁴⁵ *Id.*

⁴⁶ *Id.* (citing 10 C.F.R. § 590.501).

⁴⁷ *Id.*

⁴⁸ *Id.* at 3.

⁴⁹ *Id.* DOE takes administrative notice of this FERC regulation, which states, in relevant part: “Any person who files a motion to intervene on the basis of a draft environmental impact statement will be deemed to have filed a timely motion ... as long as the motion is filed within the comment period for the draft environmental impact statement.” 18 C.F.R. § 380.10(a)(1)(i)); *see also infra* § IV.A.2.

⁵⁰ Cook Inletkeeper and Center for Biological Diversity Mot. at 3.

⁵¹ *See supra* note 26.

⁵² Cook Inletkeeper and Center for Biological Diversity Mot. at 1 (citing 10 C.F.R § 590.303).

⁵³ *Id.* at 2-3 (citing U.S. Dep’t of Energy, Alaska LNG Project LLC; Application for Long-Term Authorization to Export Liquefied Natural Gas Produced from Domestic Natural Gas Resources to Non-Free Trade Agreement Nations for a 30-Year Period, 79 Fed. Reg. 55,764 (Sept. 17, 2014)).

numerous stages of DOE’s review process during the last eight years.”⁵⁴ In support of its argument, AGDC points to DOE’s orders “reject[ing] late-filed intervention based on the requirements of [DOE’s] regulation [10 C.F.R § 590.303(d)] in similar circumstances.”⁵⁵ AGDC cites, for example, an order issued by DOE in 2012, in which DOE denied Sierra Club’s motion to intervene out of time (filed 16 months after the deadline for interventions) after finding that Sierra Club was informed by the notice of application published in the *Federal Register* that DOE would consider the environmental effects of its proposed decision.⁵⁶

In particular, AGDC disputes Movants’ claim that they had no notice DOE would consider life cycle GHG emissions associated with the Alaska LNG Project until the Draft SEIS comment period began. According to AGDC, as early as the intervention deadline for Alaska LNG’s Application in 2014, Movants should have been aware that “life cycle GHG issues could be raised in a NEPA review,” particularly where the Center for Biological Diversity “has specifically advocated that DOE is required to analyze these impacts.”⁵⁷

AGDC also notes that Movants submitted joint comments on the Draft SEIS with Sierra Club and Earthjustice.⁵⁸ AGDC asserts that Movants’ comments will be considered by DOE in issuing the final order in this proceeding, and thus Movants will not be prejudiced by a denial of their motion. On the other hand, AGDC contends, “[t]he purpose of Movants’ motion is to

⁵⁴ AGDC Answer at 3.

⁵⁵ *Id.*

⁵⁶ *Id.* (citing *Sabine Pass Liquefaction, LLC*, DOE/FE Order No. 2961-A, 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, at 24-26 (Aug. 7, 2012)).

⁵⁷ *See id.* at 2-3; *see also id.* at 4-5.

⁵⁸ *Id.* at 1, 3.

provide it with the right and opportunity to seek rehearing of a final order and subsequently seek judicial review,” and “[t]his is precisely the type of delay and harm that will prejudice AGDC.”⁵⁹

Additionally, AGDC disputes Movants’ argument that DOE should follow the same reasoning as FERC’s regulation governing intervention during the comment period for a draft EIS.⁶⁰ AGDC states that, under the FERC regulation and related precedent, “a party may not automatically obtain late intervention in a *supplemental* environmental assessment context after the initial draft EIS, and instead must show good cause.”⁶¹ AGDC thus asserts that, even if this FERC rule were to be applied by DOE to this proceeding, “it should not apply to a draft supplemental EIS issued years after the intervention deadline, especially when Movants had for some time sufficient notice that their interests could be affected.”⁶² AGDC adds that FERC has “adopted a more restrictive approach toward late interventions” in NGA section 3 LNG license proceedings, citing FERC’s regulation governing the granting of late intervention, 18 C.F.R. § 385.214(d).⁶³

AGDC asserts that Movants’ interests “are already more than adequately represented by Sierra Club—an organization with fundamentally similar goals, and similar, if not identical, positions in opposition to the sufficiency of the [Draft SEIS] in this proceeding.”⁶⁴ AGDC also argues, however, that Movants’ statement that it will coordinate joint filings with Sierra Club

⁵⁹ *Id.* at 3; *see also id.* at 1 (“The granting of the Movants’ motion to intervene would negatively impact the proceeding by introducing delay, and would prejudice AGDC and other parties by requiring them to ... address the positions of additional adverse parties on rehearing and on judicial review after the proceeding has already been underway for the better part of a decade.”)

⁶⁰ 18 C.F.R. § 380.10(a)(1)(i).

⁶¹ AGDC Answer at 4 (emphasis in original and citation omitted).

⁶² *Id.*

⁶³ *Id.* at 5-6. DOE takes administrative notice of this FERC regulation, which sets forth factors for FERC to consider when acting on a late-filed motion to intervene, including whether the movant had good cause for failing to file the motion on time, any disruption that might result from permitting intervention, whether the movant’s interest “is not adequately represented by other parties,” and any prejudice to, or additional burdens upon, the existing parties that might result from permitting the late intervention. *See* 18 C.F.R. § 385.214(d).

⁶⁴ AGDC Answer at 6.

“‘[w]henever possible’” only “reinforces the notion that Movants may ... seek to raise issues and arguments that Sierra Club does not, rendering it ‘not possible’ for Movants to join a Sierra Club pleading.”⁶⁵ AGDC states that such additional pleadings will increase the complexity and volume of filings in this proceeding, and impose a burden on other parties, including AGDC, to respond to them.⁶⁶ AGDC also counters Movants’ statement that they seek only to pursue issues raised in the NEPA process, stating that such a limitation “will not prevent harm to existing parties because it will allow Movants to revisit issues already decided and/or to raise new ones.”⁶⁷

Finally, AGDC contends that any delay it encounters in “obtaining final approvals” creates the potential for “real and substantial” harm, as such delay will adversely affect AGDC’s ability to obtain needed customer and financing commitments for the Alaska LNG Project.⁶⁸ For these reasons, AGDC asks DOE to deny Movants’ motion to intervene out of time.

III. SUMMARY OF THE FINAL SEIS FOR THE ALASKA LNG PROJECT

To address the issues raised in Sierra Club’s Request for Rehearing, the Final SEIS supplemented the EIS to consider additional potential impacts associated with LNG exported from the Alaska LNG Project over the term of DOE’s authorization.⁶⁹ Specifically, the Final SEIS both analyzed the potential environmental impacts associated with Project-related natural gas production on the North Slope of Alaska, and included a life cycle analysis (LCA) calculating the GHG emissions for LNG exported from the proposed Alaska LNG Project to markets in Asia and potentially other regions.⁷⁰ The Final SEIS assessed local impacts in areas

⁶⁵ *Id.* (quoting Cook Inletkeeper and Center for Biological Diversity Mot. at 3).

⁶⁶ *Id.* at 7.

⁶⁷ *Id.* at 3.

⁶⁸ *Id.* at 8.

⁶⁹ *See* Final SEIS at 1-1, 1-4.

⁷⁰ *Id.* at 1-6.

that would be affected by natural gas production in the development and operations of the Alaska LNG Project.⁷¹ Additionally, the Final SEIS analyzed GHG emissions with respect to the Project's development and operations for each stage of the natural gas supply chain, from production through end use, and for alternative upstream scenarios.⁷²

Notably, the Final SEIS identified two No Action Alternatives, which provided different perspectives for assessing cumulative GHG effects in comparison to the estimated GHG emissions from the proposed Project. "No Action Alternative 1" represented the same amount of LNG being supplied to the market by other LNG production capacity that is not located in Alaska (using LNG export capacity located in the lower-48 states as a proxy).⁷³ "No Action Alternative 2" presented GHG emissions associated with the continued production of oil from the North Slope and the associated emissions from the transport, refining, and use of that oil, but without an assumption that the energy services provided by the Alaska LNG Project would instead be provided by another source of LNG (and crude oil).⁷⁴ The SEIS presented these two No Action Alternatives in light of the "inherent uncertainty regarding the particular present or future supply and demand responses that would lead to net changes in production and consumption, and associated emissions, of LNG and oil that would be produced on the North Slope in association with the Project."⁷⁵

⁷¹ See *id.*, section 2.2, at 2-9 to 2-20. Areas within the North Slope evaluated for potential local impacts were related to development and operations of the Alaska LNG Project in the Point Thomson Unit (PTU), the Prudhoe Bay Unit (PBU), and the Kuparuk River Unit (KRU) of the North Slope of Alaska.

⁷² See *id.* at Appendix C.

⁷³ *Id.* at 4.19-6.

⁷⁴ *Id.* at 4.19-6 to 4.19-7. No Action Alternative 2 accounted only for the life cycle GHG emissions directly attributed to the energy production from the North Slope that would be impacted by the Alaska LNG Project (*i.e.*, excluding GHG emissions from energy production from non-North Slope operations to meet equivalent LNG and crude oil services that would be provided by the Project).

⁷⁵ Final SEIS at 4.20-14.

The Final SEIS also considered Project alternatives for storing produced CO₂.⁷⁶ Although carbon management for produced CO₂ (*i.e.*, carbon dioxide produced from wells and separated from natural gas, other hydrocarbons, and other components) has been part of the design for the Alaska LNG Project, specific approaches to upstream carbon management had not been identified or analyzed until the SEIS process. To properly evaluate potential GHG emissions related to carbon management scenarios (including natural gas production, carbon dioxide storage, and oil production), the Final SEIS considered alternative scenarios.

The Final SEIS examined potential impacts of the Alaska LNG Project in resource areas including: geologic resources and geologic hazards; soils and sediments; water resources; wetlands; vegetation; wildlife resources; aquatic resources; threatened, endangered, and other special status species; land use, recreation, and special interest areas; visual resources; socioeconomics (including environmental justice); transportation; cultural resources; subsistence; air quality; noise; public health and safety; reliability and safety; and GHGs and climate change. These evaluations included the potential impacts of Project scenarios both in isolation and as part of possible cumulative impacts. The Final SEIS determined that, for most resource areas, the adverse potential effects of the Project ranged from “negligible” to “less than significant.” In addition, some socioeconomic impacts were identified as potentially beneficial.

The Final SEIS determined that some impacts either would be or could be “significant,” with mitigation possible in many instances. For example, cumulative impacts on permafrost degradation from the Alaska LNG Project, in combination with other projects in the region, could be significant, leading to increased soil erosion and sedimentation.⁷⁷ Such impacts, however, could be mitigated to a level of “less-than-significant” with implementation of

⁷⁶ See *id.* at Appendix B.

⁷⁷ *Id.* at 4.20-10.

construction mitigation measures and environmental plans. The Final SEIS also found that the combined effects of projects in the region could result in significant cumulative impacts stemming from permanent loss of wetlands, but that implementation of construction best management practices and mitigation measures should offset these potential impacts.⁷⁸ Although mitigation measures and best practices are not incorporated directly into this Order (other than the venting prohibition described herein), DOE stated in the final SEIS that it “expects compliance with any such plans that are developed by the project sponsors, to the extent they are additional to those recommended in the [final] EIS and FERC Order (or extensions of those plans to cover upstream activities), to be the responsibility of the appropriate local or state agencies.”⁷⁹

For both Project-related and cumulative impacts, the Final SEIS identified the “potential for disproportionately high and adverse impacts on environmental justice communities, primarily due to potential for impacts to subsistence users of the Kaktovik and Nuiqsut communities.”⁸⁰ However, any potential adverse subsistence impacts from the Project may be reduced with appropriate mitigation measures.⁸¹ The Final SEIS further noted that cumulative impacts from regional projects could result in significant adverse impacts to specific subsistence users in the region, but that “DOE assumes that the communities ... would use other areas within the region for subsistence activities, away from oil and gas development work.”⁸²

In the area of GHG emissions and climate change, the Final SEIS did not characterize impacts as to their level of significance for either Project-level or potential regionally cumulative

⁷⁸ See *id.* at 4.20-11.

⁷⁹ *Id.* at 6-1.

⁸⁰ *Id.*, Table S-4, at S-19 to S-20.

⁸¹ Final SEIS at 4.14-6.

⁸² *Id.*, Table S-4, at S-23.

impacts. Rather, the Final SEIS observed that “[c]umulative impacts from development of projects would contribute incrementally to global climate change, which is a significant phenomenon that is inherently cumulative in nature and is occurring as a result of human activities across the globe.”⁸³ The Final SEIS further noted potential impacts of climate change, and presented modeled GHG life cycle emissions for each scenario.

Finally, as a mitigation measure for the Alaska LNG Project, the Final SEIS recommended that any DOE order reaffirming Alaska LNG’s export authority include a condition prohibiting the venting into the atmosphere of CO₂ produced with natural gas and separated from it at the Alaska LNG Project.⁸⁴

IV. DISCUSSION AND CONCLUSIONS

A. Procedural Matters - Cook Inletkeeper and Center for Biological Diversity’s Motion for Leave to Intervene Out of Time

1. DOE’s Practice for Motions to Intervene Out of Time

Movants’ motion to intervene out of time presents a question of first impression for DOE in a LNG export proceeding, where Movants filed this motion during an ongoing rehearing proceeding granted to conduct additional environmental analysis, where Movants seek to address this new environmental analysis prepared in a Draft SEIS issued under NEPA, and where Movants filed the motion on the last day of the public comment period established by DOE for the Draft SEIS. Further, DOE’s export authorization subject to rehearing—the Alaska LNG Order—is already the subject of an ongoing lawsuit brought by Sierra Club on environmental grounds.⁸⁵ Although AGDC is correct that DOE has previously denied late-filed motions to intervene submitted after the due date published in the *Federal Register* for the notice of

⁸³ *Id.*, Table S-4, at S-27.

⁸⁴ *Id.* at 4.19-12.

⁸⁵ *See supra* note 15.

application (*i.e.*, before DOE issued a final order), we find that the facts in the instant situation are unique and thus do not present “similar circumstances” to DOE’s prior denials of intervention, as AGDC contends.⁸⁶

For example, DOE recently denied Sierra Club’s motion to intervene out of time in two different LNG export proceedings—nearly two years after the deadline established in the *Federal Register* for such filings and before DOE had issued a final order on each pending export application.⁸⁷ Although Sierra Club had argued that an environmental assessment conducted by DOE after the intervention deadline in each proceeding violated NEPA, DOE found that Sierra Club neither attempted to establish good cause for its delay in moving to intervene nor sought to address the impact of granting the late motion on the applicants or other parties.⁸⁸ Instead, Sierra Club took the erroneous position that DOE’s rules do not articulate a standard for timely intervention, and as such, intervention should be granted liberally.⁸⁹ DOE also concluded in both proceedings that accepting Sierra Club’s motion to intervene would be prejudicial to the applicants, contrary to DOE precedent, and disruptive to the proceedings and DOE’s administrative process.⁹⁰ By contrast, and as discussed below, we find that Movants

⁸⁶ AGDC Answer at 3.

⁸⁷ See *Energía Costa Azul, S. de R.L. de C.V.*, DOE/FECM Order No. 4365-B, Docket No. 18-145-LNG, Order Amending Long-Term Authorization to Re-Export U.S.-Sourced Natural Gas in the Form of Liquefied Natural Gas from Mexico to Non-Free Trade Agreement Countries (ECA Large-Scale Project), at 50-53 (Dec. 20, 2022); *Vista Pacífico LNG, S.A.P.I. de C.V.*, DOE/FECM Order No. 4929, Docket No. 20-153-LNG, Order Granting Long-Term Authorization to Re-Export U.S.-Sourced Natural Gas in the Form of Liquefied Natural Gas from Mexico to Non-Free Trade Agreement Nations, at 50-53 (Dec. 20, 2022).

⁸⁸ See *Energía Costa Azul, S. de R.L. de C.V.*, DOE/FECM Order No. 4365-B, at 52; *Vista Pacífico LNG, S.A.P.I. de C.V.*, DOE/FECM Order No. 4929, at 52 (concluding, in both orders, that Sierra Club “provide[s] no grounds for DOE to consider the late filing”).

⁸⁹ See *Energía Costa Azul, S. de R.L. de C.V.*, DOE/FECM Order No. 4365-B, at 36-37, 50; *Vista Pacífico LNG, S.A.P.I. de C.V.*, DOE/FECM Order No. 4929, at 36-37, 50.

⁹⁰ See *Energía Costa Azul, S. de R.L. de C.V.*, DOE/FECM Order No. 4365-B, at 53; *Vista Pacífico LNG, S.A.P.I. de C.V.*, DOE/FECM Order No. 4929, at 53.

have shown good cause for intervening out of time and that the impact to AGDC and other parties from their intervention is likely to be minimal.⁹¹

2. Movants' Showing of Good Cause for Motion to Intervene Out of Time

Movants maintain that there is good cause for DOE to grant their motion to intervene because the motion “was submitted during the DSEIS comment period and was prompted by issues and positions raised for the first time in the DSEIS.”⁹² According to Movants, when motions to intervene were initially due in response to Alaska LNG’s Application in 2014, DOE had not prepared or foreshadowed a life cycle GHG analysis for the Alaska LNG Project. Therefore, Movants assert that “this is the first opportunity to intervene on the basis of such an analysis.”⁹³

Upon review of the arguments, we agree with Movants and find that they have demonstrated good cause for their motion to intervene out of time. Although AGDC correctly argues that potential environmental issues associated with exports from the Alaska LNG Project (which could include GHG emissions) have long been a part of the proceeding leading to the issuance of the Alaska LNG Order in August 2020, it is also true that the Draft SEIS presented new environmental analyses and findings—including the first-ever life cycle GHG analysis prepared by DOE to assess the impacts of exporting Alaskan-sourced LNG by vessel to Asia and other markets.⁹⁴

Further, Movants urge DOE to adopt similar reasoning to FERC’s regulation, which provides that “[a]ny person who files a motion to intervene on the basis of a draft environmental impact statement will be deemed to have filed a timely motion ... as long as the motion is filed

⁹¹ See 10 C.F.R. § 590.303(d).

⁹² Cook Inletkeeper and Center for Biological Diversity Mot. at 3.

⁹³ *Id.*

⁹⁴ See *supra* § III; *infra* at Appendix (Amended Record of Decision).

within the comment period for the draft environmental impact statement.”⁹⁵ We are persuaded to apply the spirit of this regulation in the context of the Draft SEIS in this proceeding, consistent with NEPA’s emphasis on public involvement in EIS proceedings.

In terms of timing, we agree with AGDC that Movants could have filed their motion to intervene at an earlier time—such as after April 15, 2021, when DOE announced in its Rehearing Order that it was “commissioning a life cycle analysis to calculate the life cycle GHG emissions for LNG exported from Alaska,”⁹⁶ or in July 2021, when DOE issued its Notice of Intent to prepare a SEIS that would include the life cycle GHG analysis.⁹⁷ Nonetheless, we find that because Movants mailed their motion to intervene to DOE on August 15, 2022—within the public comment period prescribed by DOE—the filing was timely for purposes of intervening in this proceeding to address the Draft SEIS.

3. Impact of Granting the Motion to Intervene

Upon review of Movants’ and AGDC’s arguments, we find that the potential impact of granting Movants’ late motion to intervene should be minimal due in large part to the unique posture of this proceeding.

First, AGDC raises concern that, if DOE grants Movants’ motion, Movants will be allowed “to raise a wide variety of issues, including ones not already raised in the proceeding.”⁹⁸ AGDC adds that Movants’ stated limitation of its intervention to ““issues raised in the NEPA process”” will not prevent harm to existing parties because it will allow Movants to revisit issues already decided and/or to raise new ones.”⁹⁹

⁹⁵ 18 C.F.R. § 380.10(a)(1)(i).

⁹⁶ Rehearing Order at 13.

⁹⁷ See NOI, 86 Fed. Reg. at 35,281.

⁹⁸ AGDC Answer at 7.

⁹⁹ *Id.*

We note, however, that DOE's regulation, 10 C.F.R. § 590.303(h), provides that, "[i]n the event that a motion for late intervention is granted, an intervenor shall accept the record of the proceeding as it was developed prior to the intervention." Further, Movants expressly state their position "that the analyses and disclosures in the Department's DSEIS do not satisfy NEPA and, if corrected, would demonstrate that the proposal is contrary to the public interest."¹⁰⁰ Accordingly, DOE will enforce the strictures of 10 C.F.R. § 590.303(h) to ensure that Movants' scope of argument in any future request for rehearing or other filing pertains to the environmental analysis presented in DOE's Final SEIS and the related environmental findings in this Order and Amended Record of Decision. Neither Movants nor any other party will be permitted to revisit unrelated issues already decided in the Alaska LNG Order or to raise issues not previously presented in this rehearing proceeding.

Second, Movants assert that they will endeavor to coordinate joint filings with intervenor Sierra Club where possible to reduce any impact on the proceeding.¹⁰¹ We find this commitment to be credible, given that Movants filed joint comments on the Draft SEIS with Sierra Club (as well as Earthjustice).¹⁰² Even if Movants find it necessary to submit their own separate request for rehearing or other filing in the future, we do not believe that such additional filings at this late stage "would increase the complexity and volume of filings in this proceeding" by any significant amount.¹⁰³

¹⁰⁰ Cook Inletkeeper and Center for Biological Diversity Mot. at 3; *see also id.* at 1 ("Cook Inletkeeper and Center for Biological Diversity ... move to intervene out of time to address issues raised by the U.S. Department of Energy's ... draft supplemental environmental impact statement (DSEIS) for the Alaska LNG Project.").

¹⁰¹ *Id.* at 3.

¹⁰² *See supra* note 24.

¹⁰³ AGDC Answer at 7. AGDC also asserts that Movants' interests are adequately represented by intervenor Sierra Club and, therefore, their late intervention is "not necessary." *Id.* at 6-7. Although the environmental interests of Movants and their members appear to overlap with Sierra Club's interests, we note that Cook Inletkeeper has a local focus on preventing impacts to the Cook Inlet watershed in Alaska and thus may provide a distinctive perspective. *See* Cook Inletkeeper and Center for Biological Diversity Mot. at 1. In any event, DOE's regulations do not preclude intervention due to common interests among intervenors. *See* 10 C.F.R. § 590.303.

Third, we take seriously AGDC's arguments that potential investors and customers rely on the existence of regulatory approvals needed for the Alaska LNG Project, and that any delay in obtaining final approvals may adversely affect AGDC's ability to obtain customer and financing commitments.¹⁰⁴ Here again, however, we find that the unique posture of this proceeding weighs against AGDC's arguments. Unlike other LNG export proceedings involving a late-filed motion to intervene, DOE has already issued a final order and a rehearing order in this proceeding *and* completed a nearly two-year SEIS process. This rehearing proceeding before DOE is nearing completion (the only remaining step being a potential request for rehearing of this Order, *see infra* note 121). Moreover, Sierra Club has already petitioned for review of the Alaska LNG Order in the D.C. Circuit on environmental grounds (a case in which AGDC is also an intervenor), meaning that litigation over exports from the Alaska LNG Project may continue for the foreseeable future. In light of these circumstances, we find that Movants' intervention will have limited additional impact on AGDC and, in particular, is unlikely to materially increase the risk of delay of any approvals within DOE's jurisdiction or harm AGDC's business interests in any measurable degree.

For these reasons, we grant Movants' motion to intervene under 10 C.F.R. § 590.303(d), subject to the limitation set forth in 10 C.F.R. § 590.303(h).¹⁰⁵

B. Decision on Basis of SEIS

DOE's publication of the Final SEIS for the Alaska LNG Project marked the completion of a multi-phased analysis and public proceeding under NEPA to assess potential environmental impacts associated with Alaska LNG's approved exports of LNG in a volume equivalent to 929 Bcf/yr of natural gas, to be produced on the North Slope and exported from Alaska over the life

¹⁰⁴ *Id.* at 8.

¹⁰⁵ *See also infra* § V (Ordering Para. C).

of the authorization. Because no changes to the proposed Project had occurred since FERC issued the EIS for the Project in 2020, the Final SEIS did not alter the analysis or conclusions presented in the EIS. Rather, the analysis in the Final SEIS considered the additional impacts from potential upstream development of North Slope natural gas resources for the Project, as well as the global nature of GHG emissions associated with exports of LNG from Alaska from a life cycle perspective.

The Final SEIS found that the approved exports could produce additional environmental impacts as compared to the findings that led to DOE’s public interest conclusion (informed by the EIS) in the Alaska LNG Order issued in August 2020. The Final SEIS also showed, however, that there is substantial uncertainty regarding the magnitude of those environmental impacts, particularly GHG emissions and climate impacts. Because of the uncertainties in the global energy markets and the extent to which the Project may substitute for other emitting power generation, DOE has determined that it cannot draw a definitive conclusion about the magnitude of climate impacts associated with Alaska LNG’s exports.

Specifically, the Final SEIS examined the impacts that could occur if market demand exists for Alaska LNG’s approved exports.¹⁰⁶ The Final SEIS explained, however, that “there is inherent uncertainty regarding the particular present or future supply and demand responses that would lead to net changes in production and consumption, and associated emissions, of LNG and oil” produced on the North Slope in association with the Project.¹⁰⁷ Further, the Final SEIS found that “[f]uture net global changes” in GHG emissions related to the Project “[will] be driven by a range of factors” including, but not limited to, “future oil and gas market conditions,

¹⁰⁶ As set forth in the Final SEIS, DOE takes no position on whether there will, in fact, be market demand for the approved exports. *See* Final SEIS at S-7.

¹⁰⁷ *Id.* at S-1.

the adoption of policies and measures to limit GHG emissions, and the penetration of low-carbon energy sources.”¹⁰⁸

For these reasons, DOE first established the No Action Alternative based on the assumption that the Project would not be constructed and the associated environmental impacts from the proposed Project would not occur.¹⁰⁹ Next, to account for the uncertainty (and in response to comments received on the Draft SEIS), DOE determined that the Final SEIS should present two No Action Alternative scenarios for the life cycle GHG analysis.¹¹⁰

As set forth above, No Action Alternative 1 (DOE LCA Study “Business as Usual” Scenario 1) represented the same amount of LNG being supplied to the market by other LNG production capacity located outside of Alaska (using LNG export capacity located in the lower-48 states as a proxy).¹¹¹ Comparing No Action Alternative 1 to the Project scenarios shows the potential impact of GHG emissions based on the perspective that, if LNG and oil were not produced from the Alaska LNG Project, they would be produced from another global source and thus would produce GHG emissions.¹¹² Indeed, the Final SEIS showed that exports from the proposed Alaska LNG Project likely would not increase, and could marginally reduce GHG emissions as compared to exports from these other sources.¹¹³ Because the Alaska LNG Project would constitute a significant addition to global LNG supply, however, DOE believes that the No Action Alternative 1 likely understates the true impact of the Project from an emissions perspective. In DOE’s view, in the absence of the Project, markets likely would substitute a combination of other LNG and reduced global demand for LNG, including—over the term of the

¹⁰⁸ *Id.* at S-7.

¹⁰⁹ *Id.* at S-6.

¹¹⁰ *See id.* at S-6 to S-7.

¹¹¹ *Id.* at 4.19-6.

¹¹² Final SEIS at S-7; 4.19-6.

¹¹³ *Id.* at 4.19-10 to 4.19-11 (Tables 4.19-3 and 4.19-4); *see also id.* at 4.19-15.

authorization—a range of emitting and non-emitting resources and reduced energy consumption.

By contrast, No Action Alternative 2 (SEIS Non-Equivalent Energy Baseline) accounted only for the life cycle GHG emissions directly attributed to the energy production from the North Slope that would be impacted by the Project (*i.e.*, excluding GHG emissions from energy production from non-North Slope operations to meet equivalent LNG and crude oil services provided by the Project).¹¹⁴ Because No Action Alternative 2 intentionally excludes GHG emissions from alternative sources of energy production—even though there likely would be substitution of other emitting resources for LNG from the Project —DOE believes that No Action Alternative 2 likely significantly overstates the true GHG emissions impact of the Alaska LNG Project.

DOE acknowledges that, given the size of the Project, there are likely to be incremental GHG emissions associated with exports from the Project, as compared to global energy supply in the absence of the Project. But we emphasize, as noted above, that DOE cannot make a definitive conclusion about the magnitude of GHG emissions and resulting climate impacts associated with Alaska LNG’s exports due to the uncertainties inherent in predicting future energy market behavior and energy consumption patterns around the world. While both perfect substitution of LNG (No Action Alternative 1) and no energy market substitution for the Alaska LNG Project with other emitting energy sources (No Action Alternative 2) are unlikely, in DOE’s judgment the GHG emissions and related climate impacts associated with Alaska LNG’s exports—at the very least, those in the near to medium years of the approximately 33-year export

¹¹⁴ *Id.* at S-6 to S-7; 4.19-6 to 4.19-7.

period—are likely to be closer to the difference between No Action Alternative 1 and the Project scenarios.

DOE also recognizes the other compelling public benefits associated with Alaska LNG’s exports, which DOE evaluated in granting Alaska LNG’s application under NGA section 3(a) in the Alaska LNG Order. These benefits (which were not contested) include local, regional, and national economic benefits associated with Alaska LNG’s exports, such as direct and indirect job creation in the exploration, development, production, and transportation of natural gas; improvements in consumer welfare in Alaska; lower natural gas prices in Alaska; and overall economic benefits for the United States as a whole, as represented by gross domestic product.¹¹⁵ On the basis of this record, DOE found that Alaska LNG’s exports are likely to generate “significant economic benefits.”¹¹⁶

Additionally, DOE found that exports from the Alaska LNG Project will provide benefits to free trade and energy security. DOE noted, for example, the importance of both diverse sources of natural gas supply and increased volumes of LNG for the global LNG market in improving energy security for many U.S. allies and trading partners. On the basis of these “strategic benefits,” DOE determined that Alaska LNG’s exports “may advance the public interest for reasons that are distinct from and additional to their economic benefits.”¹¹⁷

In weighing the acknowledged but highly uncertain climate impacts against the economic and international security benefits of Alaska LNG’s approved exports, DOE concludes that the information developed on rehearing does not present a sufficient basis to reach a different conclusion than previously reached by DOE—that “the opponents of the Application have failed

¹¹⁵ See Alaska LNG Order at 30-31 (citations omitted).

¹¹⁶ *Id.* at 31 (affirming DOE’s prior findings in the conditional non-FTA order for Alaska LNG, Order No. 3643).

¹¹⁷ *Id.*

to overcome the statutory presumption that Alaska LNG’s proposed exports are consistent with the public interest under NGA section 3(a).”¹¹⁸

The Amended ROD attached as the Appendix to this Order contains an extensive discussion of the Final SEIS and other relevant information, which has informed DOE’s evaluation in this rehearing process under NGA section 3(a). In particular, where the Final SEIS has identified concrete GHG emissions impacts that can be directly mitigated—specifically, the potential for venting of byproduct CO₂ into the atmosphere from the Alaska LNG Project—DOE is amending the Alaska LNG Order to require such mitigation. As set forth below, DOE is adopting a venting prohibition in the form of a new monthly reporting requirement (Ordering Paragraph Q in Order No. 3643-A, as amended by this Order).¹¹⁹ DOE believes this venting prohibition, which contains limited flexibility for emergencies, maintenance, and operational exigencies, is necessary and appropriate.

In sum, based upon review of Sierra Club’s arguments in its Request for Rehearing, the Final SEIS, the comments received on the Draft SEIS and Final SEIS, other information discussed in the Amended ROD, and the record for the Alaska LNG Order, DOE finds that it has not been shown that the Alaska LNG Order—as amended to include the venting prohibition—is inconsistent with the public interest under NGA section 3(a). DOE therefore affirms the Alaska LNG Order (Order No. 3643-A) and Record of Decision, as supplemented by this Order and the Amended ROD.

¹¹⁸ *Id.* at 35-36 (Conclusion).

¹¹⁹ *See infra* § V (Ordering Para. A).

V. ORDER

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

A. The Alaska LNG Order (DOE/FE Order No. 3643-A) issued on August 20, 2020, is reaffirmed with one amendment. In Section XI (“Order”) of Order No. 3643-A, Ordering Paragraph Q is added to read:

Alaska LNG shall submit to DOE, as part of its monthly report, a statement certifying that the natural gas produced for export in the form of LNG in the prior month did not result in the venting of byproduct carbon dioxide (CO₂) into the atmosphere, unless required for emergency, maintenance, or operational exigencies and in compliance with the FERC Order.¹²⁰

B. All other obligations, rights, responsibilities, and deadlines established by DOE in the Alaska LNG Order remain in effect.¹²¹

C. The motion to intervene filed out of time by Cook Inletkeeper and Center for Biological Diversity is granted.¹²²

Issued in Washington, D.C., on April 13, 2023.



Brad Crabtree
Assistant Secretary
Office of Fossil Energy and Carbon Management

¹²⁰ *Alaska Gasline Dev. Corp.*, Order Granting Authorization Under Section 3 of the Natural Gas Act, 171 FERC ¶ 61,134, *reh'g denied*, 172 FERC ¶ 61,214 (2020).

¹²¹ DOE notes that any party aggrieved by this final Order may seek rehearing pursuant to NGA section 19(a), 15 U.S.C. § 717r(a), and 10 C.F.R. § 590.501.

¹²² *See* 10 C.F.R. §§ 590.303(d), 590.303(h).

APPENDIX: AMENDED RECORD OF DECISION

The Department of Energy's (DOE) Office of Fossil Energy and Carbon Management (DOE/FECM) prepared this Amended Record of Decision (ROD) pursuant to the National Environmental Policy Act of 1969 (NEPA),¹²³ and in compliance with the Council on Environmental Quality (CEQ) implementing regulations for NEPA,¹²⁴ and DOE's implementing procedures for NEPA.¹²⁵

A. Summary

On August 20, 2020, DOE published a ROD (2020 ROD) as an Appendix to its Order No. 3643-A¹²⁶ granting Alaska LNG Project LLC (Alaska LNG) authorization to export LNG to countries with which the United States has not 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 (non-FTA countries). That order was subsequently the subject of a rehearing request filed by Sierra Club,¹²⁷ which DOE granted in part in its Order on Rehearing on April 15, 2021 (Rehearing Order).¹²⁸ In response to Sierra Club, DOE prepared a Supplemental Environmental Impact Statement¹²⁹ (SEIS) in accordance with NEPA, for the purpose of evaluating the potential environmental impacts associated with natural gas production on the North Slope of Alaska (North Slope) and assessing life cycle greenhouse gas (GHG) emissions associated with the export authorization. This ROD states DOE's decision on rehearing.

¹²³ 42 U.S.C. § 4321 *et seq.*

¹²⁴ 40 C.F.R. Parts 1500-08.

¹²⁵ 10 C.F.R. Part 1021.

¹²⁶ *Alaska LNG Project LLC*, DOE/FE Order No. 3643-A, Docket No. 14-96-LNG, Final Opinion and Order Granting Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Nations (Aug. 20, 2020).

¹²⁷ Sierra Club, Request for Rehearing, Docket No. 14-96-LNG (Sept. 21, 2020).

¹²⁸ *Alaska LNG Project LLC, Order on Rehearing*, DOE/FE Order No. 3643-B (Apr. 15, 2021).

¹²⁹ *Alaska LNG Project Final Supplemental Environmental Impact Statement*, DOE/EIS-0512-S1 (Jan. 2023).

B. Background

On April 17, 2017, Alaska Gasline Development Corporation (AGDC)¹³⁰ filed an application with the Federal Energy Regulatory Commission (FERC) under section 3 of the NGA to site, construct, and operate the proposed Alaska LNG Project (Project).¹³¹ In compliance with NEPA, FERC staff issued a Notice of Availability of a Draft Environmental Impact Statement (EIS) on June 28, 2019, and placed the draft EIS into the public record.¹³² On March 6, 2020, FERC staff issued the final EIS for the Project.¹³³ The final EIS responded to comments received on the draft EIS and addressed numerous potential impacts of the Project, including but not limited to wetlands, geological conditions, water resources, air quality, and cumulative impacts.¹³⁴ Based on its environmental analysis, FERC staff concluded in the final EIS that although “Project construction and operation would result in adverse environmental impacts[,]” AGDC’s commitments and FERC’s recommended mitigations “would reduce these effects to less than significant levels” in some cases.¹³⁵ The final EIS contained 164 site-specific environmental mitigation measures, which FERC staff recommended that FERC attach as conditions to any authorization of the Project.¹³⁶ On May 21, 2020, FERC issued its Order authorizing AGDC to site, construct, and operate the Project, subject to 165 environmental

¹³⁰ As noted above, AGDC is an independent, public corporation of the State of Alaska. The State of Alaska, through AGDC, holds a 25% participation interest in the Alaska LNG Project. *See supra* § I.

¹³¹ Alaska Gasline Dev. Corp., Application for Authorization under Section 3 of the Natural Gas Act, FERC Docket No. CP17-178-000 (Apr. 17, 2017).

¹³² Fed. Energy Regulatory Comm’n, Alaska Gasline Dev. Corp.; Notice of Availability of the Draft Environmental Impact Statement for the Proposed Alaska LNG Project, FERC Docket No. CP17-178-000, 84 Fed. Reg. 32,451 (July 8, 2019); *see also* *Alaska Gasline Dev. Corp.*, Order Granting Authorization under Section 3 of the Natural Gas Act, 171 FERC ¶ 61,134 at P 23 (2020) [hereinafter FERC Order], *reh’g denied* 172 FERC ¶ 61,214 (2020).

¹³³ *See* Fed. Energy Regulatory Comm’n, Alaska Gasline Dev. Corp.; Notice of Availability of the Final Environmental Impact Statement for the Proposed Alaska LNG Project, FERC Docket No. CP17-178-000, 85 Fed. Reg. 14,470 (Mar. 12, 2020); *see also* FERC Order at P 24.

¹³⁴ *See* Fed. Energy Regulatory Comm’n, Alaska LNG Project Final Environmental Impact Statement, FERC Docket No. CP17-178-000, at ES-2 to ES-6 (Mar. 6, 2020) [hereinafter Final EIS], <https://www.ferc.gov/industries-data/natural-gas/final-environmental-impact-statement-0>; FERC Order at P 24.

¹³⁵ Final EIS at 5-1.

¹³⁶ *Id.* at 5-50 to 5-77 (list of mitigation measures).

conditions—the recommended 164 environmental mitigation measures, plus one additional condition (FERC Order).¹³⁷

DOE participated as a cooperating agency with FERC in preparing the EIS, analyzing the potential environmental impacts of the proposed Project that would be used to support a decision on the export authorization sought from DOE.¹³⁸ In accordance with 40 C.F.R. § 1506.3, DOE adopted the final EIS on March 16, 2020 (DOE/EIS-0512),¹³⁹ and the U.S. Environmental Protection Agency (EPA) published a notice of the adoption on March 27, 2020.¹⁴⁰ In Order No. 3643-A, DOE incorporated all the terms and conditions in the final EIS, including the 165 environmental conditions adopted in the FERC Order. Additionally, DOE conditioned its authorization on Alaska LNG’s ongoing compliance with any other preventative and mitigative measures at the proposed Project imposed by federal or state agencies.

As an Appendix to Order No. 3643-A, DOE issued a ROD under NEPA concerning the Project, stating its decision to issue Order No. 3643-A. In the ROD, DOE summarized the alternatives to the Project that were considered in the final EIS, including the identification of the Environmentally Preferred Alternative, DOE’s decision, and mitigation conditions imposed in Order No. 3643-A. It also included a Floodplain Statement of Findings. DOE stated in the 2020 ROD that its authorizing decision in Order No. 3643-A was based on: “(i) the analysis of potential environmental impacts presented in the [final] EIS; and (ii) DOE’s determination in the Order that the protestors and commenters in opposition have failed to show that Alaska LNG’s proposed exports will be inconsistent with the public interest, as would be required to deny the

¹³⁷ See FERC Order at PP 249-250, 253; *see also* Alaska LNG Order at 24-27.

¹³⁸ Final EIS at ES-1 and 1-3.

¹³⁹ Letter from Amy Sweeney, DOE/FE, to Julie Roemele, U.S. Env’tl. Prot. Agency (Mar. 16, 2020) (adoption of Final EIS).

¹⁴⁰ U.S. Env’tl. Prot. Agency, Environmental Impact Statements; Notice of Availability, 85 Fed. Reg. 17,327 (Mar. 27, 2020).

Application under NGA section 3(a).”

On September 21, 2020, Sierra Club filed a Request for Rehearing of Order No. 3643-A. On April 15, 2021, DOE issued the Rehearing Order, granting rehearing for the purpose of conducting the Alaska environmental study proceeding, which was to include two Alaska-specific environmental studies: (i) a life cycle analysis calculating the GHG emissions for LNG exported from Alaska and transported by vessel to markets in Asia and potentially other regions, and (ii) an upstream study examining aspects of natural gas production on the North Slope of Alaska. On June 28, 2021, DOE issued a Notice of Intent to Prepare a Supplemental Environmental Impact Statement for the Alaska LNG Project, which stated that DOE intended to prepare a SEIS for the Alaska environmental study proceeding.

In the Rehearing Order, DOE identified the reasons for its decision to conduct additional environmental analyses. DOE noted that, subsequent to the issuance of the Alaska LNG Order, the President had issued two Executive Orders (E.O.s) relevant to the Alaska LNG proceeding:

- E.O. 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*. E.O. 13990 directs agencies to “immediately review” all regulations, orders, and other actions issued after January 20, 2017, that may increase GHG emissions or have other impacts on climate change.

- E.O. 14008, *Tackling the Climate Crisis at Home and Abroad*. E.O. 14008 sets forth additional policies to address climate change, specifically to “organize and deploy the full capacity of [Federal] agencies to combat the climate crisis.” E.O. 14008 further requires the “Federal Government [to] drive assessment, disclosure, and mitigation of climate pollution and climate-related risks in every sector” of the U.S. economy.

DOE determined that an Alaska-specific life cycle GHG emissions study was necessary to enable DOE to fully address Sierra Club’s arguments on rehearing, and that it was appropriate to conduct an Alaska-specific study of potential upstream effects, because “the natural gas for

liquefaction and export will be produced at limited and identifiable areas on... [Alaska's] North Slope.”¹⁴¹

DOE conducted research and analysis for the SEIS and, on June 24, 2022, released a Draft SEIS for a 45-day public comment period. DOE held a virtual public meeting on July 20, 2022 to collect verbal comments on the Draft SEIS and to provide an opportunity for the public to learn more about the proposed Project. During the public comment period, agencies, tribal governments, non-governmental organizations, and members of the public submitted verbal comments during the public meeting and written comments via mail, email, and through electronic submission. DOE considered all comments received during the public comment period in preparation of the Final SEIS. Comments received after the close of the public comment period were considered to the extent practicable. The Final SEIS, released on January 6, 2023, included revisions – in some cases significant revisions – in response to the public comments, where appropriate, as well as a Comment Response Document that summarized the public notification process and the public comments received on the Draft SEIS, along with DOE's responses.

C. Project Description

The 2020 ROD describes the proposed Project, including the liquefaction facility, pipeline, gas treatment plant on the North Slope, and transmission lines between the treatment plant and producing fields on the North Slope.

¹⁴¹ Rehearing Order at 14.

In addition to the facilities and operational aspects of the Project analyzed in the final EIS and described in the 2020 ROD, the Project would include related development and operational activities within the North Slope of Alaska that were analyzed in the Final SEIS:

Point Thomson Unit (PTU): expansion of the Central Pad by 7 acres; construction of a 7-acre multi-season ice pad adjacent to the Central Pad; four new production wells drilled at the Central Pad; conversion of an existing gas injection well on the Central Pad to a production well and drilling of a new Underground Injection Control (UIC) Class I disposal well at the same location; dredging approximately 5,000 cubic yards of material to enable barges to reach the Central Pad for unloading equipment and modular facilities; ice road construction; and operation of these facilities.

Prudhoe Bay Unit (PBU): 5-acre expansion of the existing Central Gas Facility (CGF) Pad; drilling of up to 10 new production and injection wells within the PBU to enhance gas recovery at the PBU; drilling of up to 7 new lateral injection wells from the existing Well Pad 18 with a maximum lateral distance of 2.5 miles; installation of three new feed gas pipelines and a propane gas pipeline from the PBU CGF to the new valve module on the CGF Pad; installation of a short, larger diameter pipeline to connect the new valve module with the new metering module on the CGF Pad; installation of four new by-product pipelines measuring 25, 3, 8, and 8 miles in length to send Gas Treatment Plant (GTP) by-product to existing well pads for reinjection into the field; a 5-mile-long gas pipeline from the Lisburne Production Center to the PBU CGF; ice road construction; and operation of these facilities.

Kuparuk River Unit (KRU): installation of an approximately 30-mile pipeline to transport carbon dioxide (CO₂) from the proposed GTP at PBU to KRU for geologic sequestration; installation of CO₂ distribution pipelines (approximately 19 miles in total) within KRU to transport CO₂ to individual injection wells; and operation of these facilities.

D. Alternatives

The 2020 ROD summarized the alternatives analyzed in the final EIS. These alternatives included the No-Action Alternative, system alternatives, gas treatment facilities alternatives, PTU gas transmission line (PTTL) alternatives, PBU gas transmission line (PBTL) alternatives, Mainline Pipeline route alternatives, Mainline Pipeline aboveground facility alternatives, liquefaction facility alternatives, and additional work area alternatives.¹⁴² The final EIS included consideration of a No Action Alternative, in which the Project would not be constructed. The final EIS stated that environmental impacts would still occur, however, from the likely development of other LNG projects seeking to transport gas from the North Slope for export in foreign commerce and for in-state deliveries.

Concerning the No Action Alternative, DOE reevaluated this conclusion in the Final SEIS and instead determined that, if the Project were not constructed, it is unlikely that another project would be constructed to export natural gas from the North Slope as LNG. This is because:

“[t]he commercial prospects of an alternative project to the Alaska LNG Project are unclear. North Slope natural gas is challenged by the remote location of the gas supply and high estimated cost of bringing the gas to market.... if the Alaska LNG Project was not constructed, DOE considers it unlikely that an alternative LNG export project would be constructed to access natural gas reserves on the North Slope in the foreseeable future.”¹⁴³

The Final SEIS identifies two No Action Alternatives, which provide different perspectives for assessing cumulative GHG effects in comparison to the estimated GHG

¹⁴² Final EIS at 3-1 to 3-49.

¹⁴³ Final SEIS at 2-23.

emissions from the proposed Project. These alternatives are presented as No Action Alternative 1, which represents the same amount of LNG being supplied to the market by other LNG production capacity not located in Alaska, and No Action Alternative 2, which presents GHG emissions associated with the estimated (continued) production of oil from the North Slope and the associated emissions from the transport, refining, and use of that oil, but without an assumption that the energy services provided by the Alaska LNG Project would instead be provided by another source of LNG (and crude oil). In other words, No Action Alternative 2 accounts for only the life cycle GHG emissions directly attributed to the energy production from the North Slope that would be impacted by the Alaska LNG Project (*i.e.*, excluding GHG emissions from energy production from non-North Slope operations to meet equivalent LNG (and crude oil) services that would be provided by the Project). The Final SEIS presents these two No Action Alternatives “because there is inherent uncertainty regarding the particular present or future supply and demand responses that would lead to net changes in production and consumption, and associated emissions, of LNG and oil that would be produced on the North Slope in association with the Project.”¹⁴⁴

The Final SEIS also considered Project alternatives for storing produced carbon dioxide. While carbon management for produced CO₂ (carbon dioxide produced from wells and separated from natural gas, other hydrocarbons, and other components) has been part of the Project’s design, specific approaches to upstream carbon management had not been identified or analyzed prior to the SEIS process. To properly evaluate potential GHG emissions related to carbon management scenarios, including natural gas production, carbon dioxide storage, and oil production, the Final SEIS considered alternative “scenarios” that could bracket a range of

¹⁴⁴ *Id.* at 4.20-14.

potential approaches the Project developer could take. In addition to Scenario 1, which is a “business as usual” baseline scenario that evaluates oil production without the Project and is used as a basis for comparison (and is No Action Alternative 1); Scenario 2 considers oil production effects if by-product CO₂ produced is not used for enhanced oil recovery (EOR), but is stored in saline formations beneath the PBU; and Scenario 3 considers oil production effects if by-product CO₂ is used for EOR outside of the Prudhoe Oil Pool. These three scenarios are described below, along with an additional scenario, No Action Alternative 2.

Scenario 1 “Business as Usual” (No Action Alternative 1). This scenario examined the remaining oil production potential from the PBU without the Project. The natural gas produced along with oil, as well as co-produced CO₂, would continue to be reinjected into the PBU for pressure maintenance and miscible injection. This scenario served as the basis for comparison in the LCA Study (Appendix C to the Final SEIS),¹⁴⁵ with no development of a pipeline or other means to export gas from the PBU and PTU. Without construction of the Project, the LCA Study recognized the possibility that continued gas demand of foreign markets would remain and could be fulfilled from an alternate source (*i.e.*, an equivalent LNG and oil energy service is provided to society). In the LCA Study, No Action Alternative 1 includes an assumption that LNG and oil production elsewhere in the world would take the place of the Project. This allows the LCA Study to make reasonable comparisons of potential GHG emissions with the proposed Project.

¹⁴⁵ *Life Cycle Analysis Study: Life Cycle Greenhouse Gas Emissions from the Alaska LNG Project.*

SEIS Non-equivalent Energy Baseline (No Action Alternative 2). This scenario only considers the GHG emissions associated with the continued production of oil from the North Slope and the associated emissions from the transport, refining, and use of that oil. No Action Alternative 2 accounts for only the life cycle GHG emissions directly attributed to the energy production from the North Slope that would be impacted by the Alaska LNG Project. This baseline scenario was not part of the LCA Study portion of the Final SEIS, but was presented in response to comments in the Final SEIS as another perspective on GHG emissions in a No Action Alternative.

Scenario 2 “Reduced Gas Reinjection”. This scenario examined the reduction in oil production from the PBU given the decreasing volumes of gas injection and the steady decline in reservoir pressure due to the Project. The start of natural gas production for the Project at the PBU would switch the priority of operations from oil production to gas production. As a result, reservoir pressure would steadily decrease as gas is extracted for the Project, reducing the volume of oil produced from the PBU. This scenario assumes that by-product CO₂ is not used in EOR and is stored in saline formations beneath the PBU.

Scenario 3 “Use and Storage of By-product CO₂”. This scenario examined the potential for utilization and storage of by-product CO₂ using CO₂ for EOR. DOE identified the KRU as a likely candidate for EOR due to its proximity to the PBU and its reservoir capacity for utilizing CO₂. The volume of oil produced from the PBU and from EOR activities at the KRU related to Project-produced CO₂ is modeled to be slightly higher than the amount of oil produced under Scenario 1. However, these estimates suggest that, in practice, the two scenarios have the potential to produce similar volumes of oil based on known variability in future reservoir performance. Scenario 3 would require an approximately 30-mile CO₂ pipeline to transfer the separated CO₂ from the proposed Alaska LNG Project Gas Treatment Plant to the KRU gas-handling operations.

E. Environmentally Preferred Alternative

The 2020 ROD recognized that the final EIS identified the proposed Alaska LNG Project—as modified by the recommended mitigation measures—as the environmentally

preferred alternative to meet the Project’s objectives.¹⁴⁶ The Final SEIS analyzed alternatives that provide different perspectives on potential GHG impacts but did not identify an environmentally preferred alternative.

Because of the inherent uncertainty regarding future energy market conditions discussed above, it is not clear whether, from the sole viewpoint of environmental impacts – and in particular, the potential global climate impacts caused by the Project -- a No Action Alternative or a Project alternative would be preferable. However, DOE has determined that neither No Action Alternative can meet the applicant’s objective to commercialize natural gas resources on the North Slope to bring LNG from Alaska to foreign markets and provide interconnections along the pipeline to allow for in-state gas deliveries. Therefore, DOE has determined that the proposed Project is the environmentally preferred alternative that can meet the applicant’s objective. DOE is not specifying an environmentally preferred scenario for management of produced carbon dioxide, and the Final SEIS does not identify one of the upstream carbon management scenarios as environmentally preferred. Instead, the Final SEIS presents the scenarios to provide a reasonable range of produced carbon management alternatives that the Project developer could pursue.

F. Comments Received from EPA on the Final SEIS

On August 15, 2022, the U.S. Environmental Protection Agency (EPA) submitted extensive and helpful comments on the Draft SEIS. Subsequently, on February 9, 2023, EPA provided DOE with additional comments on the Final SEIS in five areas: CEQ NEPA Interim GHG Guidance, No Action Alternatives, Life Cycle Analysis, GHGs and Climate Change, and Environmental Justice.

¹⁴⁶ Final EIS at 3-49.

CEQ NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change

CEQ's interim guidance had not been published at the time of the public comment period for the Draft SEIS. While EPA's comments on the Draft SEIS addressed aspects of GHG emissions and climate change, they did not specifically cite the interim guidance.

Additional EPA Comment

In its comments on the Final SEIS, EPA noted that the CEQ published interim guidance on January 9, 2023, to assist federal agencies in assessing and disclosing climate change impacts during environmental reviews. EPA stated that the interim guidance took effect immediately, while the CEQ receives public comments on the guidance, and that it should be used for all new proposed actions and may be used for evaluations in progress, as agencies deem appropriate. EPA recommended that this ROD include descriptions of any considerations made regarding the CEQ guidance in DOE's current Alaska LNG proceeding.

DOE Response

The Final SEIS was issued on January 6, 2023, prior to CEQ's issuance of the interim guidance. While the final interim guidance was not available during the development of the SEIS, the Final SEIS does include elements recommended in the guidance. For example:

- The interim guidance recommends that agencies quantify a proposed action's projected GHG emissions for the expected lifetime of the action. The Final SEIS contains an Alaska LNG Project-specific analysis that includes GHG life cycle emissions during the period of DOE's export authorization.
- The interim guidance recommends that agencies use projected GHG emissions to help assess potential climate change effects and provide additional context for GHG emissions. The Final SEIS provides an assessment of incremental climate change impacts through monetization of emission impacts using the social cost of greenhouse gases (SC-GHG), both in aggregated terms and for three GHGs specifically. The SC-

GHG measure is intended as a means of estimating actual climate change impacts, in monetary terms, of a given level of GHG emissions.

- The interim guidance recommends that agencies consider mitigation measures. The Final SEIS recommends that a mitigation measure be included in any reaffirming order, requiring that Alaska LNG submit to DOE, as part of its monthly report, a statement certifying that the natural gas produced for export in the form of LNG did not result in the venting of by-product CO₂ into the atmosphere, unless required for emergency, maintenance, or operational exigencies and in compliance with the FERC Order. DOE/FECM Order No. 3643-C includes such a condition.

No Action Alternatives

In its comments on the Draft SEIS, EPA recommended that DOE “reevaluate the No Action Scenario 1 to represent a true NEPA ‘no action’ alternative by eliminating the presumption that, if the Alaska LNG Project were not to proceed, LNG facilities ...would substitute the same volume of LNG exports to the Asian destination countries.”¹⁴⁷ In response to EPA, DOE developed a No Action Alternative 2 and included it in the Final SEIS. No Action Alternative 2 presented GHG emissions associated with the continued production of oil from the North Slope and the associated emissions from the transport, refining, and use of that oil, but without an assumption that the energy services provided by the Alaska LNG Project would be provided by another source of LNG (and crude oil). In comments on the Draft SEIS, EPA also recommended that the Final SEIS include a comparison table of GHG emissions.¹⁴⁸ The Final SEIS contains annual emissions totals in tables for each scenario that included increased emissions in Alaska.¹⁴⁹

Additional EPA Comment

¹⁴⁷ Letter from EPA to DOE re: Draft SEIS, at 1 (Aug. 15, 2022).

¹⁴⁸ *Id.*

¹⁴⁹ See Final SEIS at Appendix E.

In its comments on the Final SEIS, EPA acknowledged DOE's evaluation, in the Final SEIS, of a No Action Alternative to address its recommendation on the Draft SEIS. EPA nonetheless expressed concern that the Final SEIS has two No Action Alternatives, which EPA believes adds complexity for decision makers and the public in understanding the analysis presented in the Final SEIS, as well as the NEPA decision-making process. Further, EPA stated its concern about the inclusion of No Action Alternative 1 and its assumption that, in the absence of the Project, an equivalent amount of LNG would be provided by global market suppliers. To address these concerns, EPA recommended that 1) DOE specify that No Action Alternative 2 is the basis for NEPA analysis comparisons with Project (Action) scenarios, including comparisons of modeled GHG emissions; and 2) DOE specify that No Action Alternative 1 is the basis for a "substitution analysis" within the LCA Report where comparisons of GHG emissions of the Project scenarios can be made.

DOE Response

DOE decided to include both No Action Alternative 1 and No Action Alternative 2 in the Final SEIS to provide two different perspectives on potential GHG emissions from the Project. This approach provides decision-makers and the public with more information than was presented in the Draft SEIS. Compared to No Action Alternative 1, the LCA Study in the Final SEIS determined that the Project would not likely increase life cycle GHG emissions, and that emissions could be slightly lower. However, projected life cycle GHG emissions from the Project would be substantially greater than the estimated life cycle emissions in No Action Alternative 2. Given the complexity of energy markets and the uncertain substitution effects related to the Project's LNG production capacity that could occur in those markets, DOE is unable to conclude that either one of the No Action Alternatives is more accurate. Rather, the

Final SEIS quantifies estimated projections of life cycle GHG emissions data for both No Action Alternatives to present alternate perspectives on potential GHG emissions impacts. DOE believes this approach provides decision makers and the public with a wider range of useful information in order to assess potential emissions.

Life Cycle Analysis

In its comments on the Draft SEIS, EPA drew DOE's attention to several key recommendations concerning life cycle analysis.¹⁵⁰

- EPA stated DOE should identify and discuss potential sources of methane to provide comparison to other GHGs. The Final SEIS, like the Draft SEIS, provides speciated emissions for methane and two other key GHGs, along with aggregated emissions in equivalent units, in the Life Cycle Analysis. In addition, the Final SEIS includes speciated emissions of GHGs on an annual basis in Appendix E.
- EPA recommended that DOE provide a detailed emissions inventory, including for construction and operations, for each GHG, for each scenario where the Project is constructed. The Final SEIS includes annual emissions estimates for these scenarios, for each GHG, in Appendix E. EPA recommended that DOE provide GHG emissions estimates related to permafrost soils affected by construction activities. DOE was unable to provide quantified estimates of such impacts because there are currently no specific plans for the relevant construction activities that would allow DOE to evaluate specific areas. DOE's Response to Comments in Appendix D of the

¹⁵⁰ Letter from EPA to DOE re: Draft SEIS, at 2.

Final SEIS explains that “[a]s stated in the [sic] Section 4.0, “the potential development activity scenarios are based on informed hypothetical scenarios analyzed in the North Slope Production Study, not actual actions proposed by the Applicant or others. Where possible, this chapter provides quantitative information based on the best existing and available information. However, specific quantification of impacts to certain resources are unknown due to the lack of specific design for the potential development activities. Where impacts cannot be quantified, the analyses present a qualitative assessment of the potential impacts.” EPA stated that DOE should evaluate GHG emissions effects relating to in-state deliveries of natural gas. In the Final SEIS, the LCA Study recognized that small quantities of natural gas would also be used as fuel during operations and for local in-state use along the main pipeline between the North Slope and Nikiski, Alaska. For a conservative (*i.e.*, higher-end) estimate, in-state gas sales were modeled as 100% combusted without explicitly stating where and how the natural gas would be used. The results of this combustion were included in emissions estimates.

- EPA stated that DOE should consider national and global market effects, such as prices changes, for purposes of comparing GHG emissions across scenarios. DOE responded by including an additional No Action Scenario (No Action Scenario 2) in the Final SEIS, to provide a different perspective on possible market effects related to the LNG production capacity of the Project. (see discussion of No Action Alternative 2, above)

Additional EPA Comment

EPA recommended that DOE evaluate all scenarios to “more accurately” reflect cumulative GHG emissions effects, which would include past, present, and reasonably foreseeable actions. EPA noted that “[s]ubsequent to EPA’s comments on the Draft SEIS, several reasonably foreseeable actions have been identified within the upstream, midstream, and downstream Scenarios which were not previously considered in the Final SEIS.”¹⁵¹ EPA recommended that DOE, as part of the cumulative impacts assessment, consider the potential emissions impacts of the following upstream, midstream, and downstream occurrences: a January 2023 agreement for North Slope gas sales; estimates of GHG emissions for in-state gas deliveries and to support long-term development scenarios, such as future ammonia production and/or other possible developments, including evaluation of monetized climate damages; and an evaluation of GHG emissions for LNG exports to destination markets in Europe, as a comparison to the LCA for Project scenario exports to markets in Asia.

DOE Response

Concerning EPA’s comment that DOE consider a gas sales and small-scale liquefaction agreement (unrelated to the Project), DOE notes that the agreement for North Slope natural gas was entered into on January 18, 2023. The Final SEIS was issued on January 6, 2023, nearly two weeks earlier. Thus, DOE cannot accommodate EPA’s request, as a practical matter.

EPA also recommended that DOE evaluate GHG emissions of in-state deliveries of natural gas to Alaskan communities for end users, and to support long-term development scenarios, including, for example, an October 2022 AGDC agreement to assess the potential to produce carbon-free ammonia in the Cook Inlet region, including sequestration of byproduct CO₂. EPA

¹⁵¹ *Id.* at 4.

recommended that these emissions be included within the Project LCA. As explained, the LCA Study recognized that small quantities of natural gas would also be used as fuel during operations and for local in-state use along the main pipeline between the North Slope and Nikiski, Alaska. For a conservative (*i.e.*, higher-end) estimate, in-state gas sales were modeled as 100% combusted without explicitly stating where and how the natural gas would be used. DOE recognizes that this approach may overestimate GHG emissions related to in-state use that is non-combustion related (*e.g.*, chemicals production). The future development of an ammonia project in the Cook Inlet is currently too speculative for meaningful analysis.

Finally, EPA recommended that DOE include destination markets in Europe in its evaluation of GHG emissions in downstream LNG consumption. While DOE recognizes that European imports of LNG have increased since the beginning of the conflict in Ukraine, Asia is the primary target market for the Project due to Asia's geographic proximity to Alaska. In DOE's judgment, LNG from the Project is substantially more likely to be delivered to Asian markets than to European markets, particularly over the term of the Alaska LNG authorization. However, in response to comments on the Draft SEIS, DOE added language to the Final SEIS to explain more fully the justification for the countries selected:

“Within each proposed scenario of LNG export from Alaska, four Asian countries are considered as destinations: Japan, China, South Korea, and India.... These four countries were chosen to represent geographically proximate delivery destinations from Alaska that, at the time of study initiation, were known or expected to be significant LNG importers. Note that the range of shipping distances to these specific countries (5,000 to 10,000 miles from Alaska) closely approximate those to other emerging LNG importers such as in Europe (about 10,000 miles away via the Panama Canal).”

GHGs and Climate Change – Permafrost Soils and Wetlands

In its comments on the Draft SEIS, EPA recommended that the Final SEIS provide estimates for GHG emissions related to permafrost soil impacts from construction activities within the Life Cycle Analysis; that estimates of these types of GHG emissions be evaluated to estimate total GHG emissions; and that the Final SEIS discuss and include estimates from wetland impacts as a net source of GHG emissions. In response, DOE provided qualitative discussion of the importance of permafrost soils and the potential impact of climate change on these soils. As described above, DOE was unable to provide quantified estimates of such impacts, including potential GHG emissions from permafrost impacted by the Project.

DOE's Response to Comments in Appendix D of the Final SEIS explains that Section 3.19 of the Final SEIS includes "a discussion of potential CO₂-e emissions from permafrost disturbance," but that "[a]ctual quantification of impacts to permafrost is not practical due to the lack of specific design for the potential development activities. Actual locations for the proposed facilities have not been identified beyond what is currently presented in the analysis."

Additional EPA Comment

In its comments on the Final SEIS, EPA acknowledged that the Final SEIS provides additional analysis of the estimate of GHG emissions associated with permafrost impacts. However, EPA again recommended that the ROD consider quantification of GHG emissions associated with construction impacts to permafrost soils and wetlands and incorporation of these values into the LCA Report.

DOE Response

As before, and for the reasons explained above, DOE is not able to quantify these emissions at this time. As stated in Section 4.0 of the Final SEIS,

“[T]he potential development activity scenarios are based on informed hypothetical scenarios analyzed in the North Slope Production Study, not actual actions proposed by the Applicant or others. Where possible, this chapter provides quantitative information based on the best existing and available information. However, specific quantification of impacts to certain resources are unknown due to the lack of specific design for the potential development activities. Where impacts cannot be quantified, the analyses present a qualitative assessment of the potential impacts.”

This explanation is also provided in Section 4.2.4 in the methodology discussion for the resource and in Section 4.21, Incomplete and Unavailable Information. Actual locations for the proposed facilities have not been identified beyond what is currently presented in the analysis.

GHGs and Climate Change – Carbon Capture, Utilization, and Sequestration

In its comments on the Draft SEIS, EPA recommended that the Final SEIS include an additional scenario to examine reinjection of byproduct carbon dioxide from the Project’s planned liquefaction facility into geologic formations in the Cook Inlet. DOE explained in Appendix D of the Final SEIS, that “[t]he Applicant has not proposed CCUS outside of the North Slope. In addition, Project activities outside of the North Slope that were evaluated under the [final] EIS are considered out of the scope of the SEIS. Similarly, evaluating the storage of by-product CO₂ in saline formations of the Cook Inlet Basin is considered out of scope.”

Additional EPA Comment

In its comments on the Final SEIS, EPA recommended that the ROD include information about the State of Alaska’s plans to establish carbon capture, utilization, and sequestration

(CCUS) in the Cook Inlet Basin and Prudhoe Bay, and describe the potential for CCUS to reduce GHG emissions associated with this proposed project.

DOE Response

DOE granted rehearing for the purpose of conducting the Alaska environmental study proceeding, which was to include two Alaska-specific environmental studies: (i) a life cycle analysis calculating the GHG emissions for LNG exported from Alaska and transported by vessel to markets in Asia and potentially in other regions, and (ii) an upstream study examining aspects of natural gas production on the North Slope of Alaska. DOE's analysis was limited to assessing, in these two areas, the Project as presented in its application. As DOE previously explained, the Final SEIS considered the most likely scenarios for management of by-product CO₂ generated from the proposed Gas Treatment Plant on the North Slope based on the most recent information available from the Applicant and information related to Alaska Oil and Gas Conservation Commission Conservation (AOGCC) proceedings for major gas sales from the Prudhoe Oil Pool.¹⁵²

Environmental Justice

In its comments on the Draft SEIS, EPA recommended that the Final SEIS “prepare an environmental justice analysis to identify and address the potential disproportionate and adverse impacts associated with public health and subsistence concerns.”¹⁵³ The Final SEIS more closely addressed these concerns, including a determination that there is the potential for significant impacts on EJ communities, particularly relating to subsistence activities.

¹⁵² Final SEIS, Appendix D, at D14-15.

¹⁵³ Letter from EPA to DOE, at 6 (Feb. 9, 2023).

Additional EPA Comment

In its comments on the Final SEIS, EPA acknowledges that the Final SEIS addressed this point, including the finding that “construction and operation of the upstream facilities...could result in disproportionate adverse impacts on communities with EJ concerns, primarily to subsistence users of the Kaktovik and Nuiqsut.”¹⁵⁴ EPA recommended that, in consideration of the identification of communities with environmental justice (EJ) concerns and updated information in the Final SEIS, the ROD consider describing efforts to engage with these communities regarding the updated information in the Final SEIS.

EPA made additional recommendations, for consideration in the ROD, related to the Final SEIS’s recommended mitigation measure of the development of a Local Subsistence Implementation Plan. EPA recommended that such a Plan include a community-based participatory approach for monitoring and engagement about community and safety concerns during construction, including a description of federal agency roles and responsibilities. EPA also recommended collaboration with North Slope communities on EJ concerns in development of such a Plan, including opportunities for the communities to provide comment on the Plan.

DOE Response

DOE issued the Final SEIS on January 6, 2023. The Final SEIS includes formatting to indicate changes from the Draft SEIS, highlighting new information. The Final SEIS was made available through various means, including specifically notifying native communities, in hard-copy letters sent on January 6, 2023, to 78 Alaska Native communities, of its electronic availability, and sending paper copies to local libraries in Alaska. These activities follow up on extensive public engagement by FERC in the development of the EIS and DOE’s outreach to

¹⁵⁴ *Id.*

every native group in the area addressed by the Final SEIS, including invitations to participate in planning the SEIS, opportunity to comment on the Draft SEIS, and opportunity to participate in the public meeting discussing the Draft SEIS.

DOE notes EPA's recognition of the Final SEIS's recommendation that project proponents of upstream development prepare and implement a site-specific Local Subsistence Implementation Plan, which could address both subsistence and public health and safety resource areas. EPA's comments are noted in this ROD, which is being made part of DOE's record in this proceeding.

G. Decision

DOE is issuing DOE/FECM Order No. 3643-C, reaffirming, with modification, its prior order authorizing Alaska LNG to export LNG by vessel from the proposed Project to non-FTA countries in a volume equivalent to 929 Bcf/yr of natural gas for a term of 30 years. As specified in Order No. 3643-A, the LNG may be sourced from natural gas supplies located at the PBU and PTU on the North Slope of Alaska. As part of the Order, DOE is imposing a new condition prohibiting venting of carbon dioxide produced along with natural gas and separated from it, as set forth under "Mitigation" below. DOE's decision to reaffirm the Alaska LNG Order under NGA section 3(a) following rehearing, as modified to include the new venting condition, is informed by the Final SEIS.¹⁵⁵

H. Mitigation

In the 2020 ROD, DOE stated that, as a condition of its decision to issue Order No. 3643-A, DOE imposed requirements that will avoid or minimize the environmental impacts of the Alaska LNG Project, including those specified in the 2020 FERC Order. Specifically, in its Order authorizing the Project on May 21, 2020,¹⁵⁶ FERC adopted the 164 mitigation measures

¹⁵⁵ 15 U.S.C. § 717b(a).

¹⁵⁶ See FERC Order at PP 1, 3-4.

recommended in the final EIS as environmental conditions of that Order (with some slight modifications) and added one condition, for a total of 165 environmental conditions. Mitigation measures beyond those included in Order No. 3643-A that are enforceable by other federal and state agencies continue to be additional conditions of Order No. 3643-A, which remains in effect.

In addition, based on the Final SEIS, in Order No. 3643-C, DOE is requiring the following:

Alaska LNG shall submit to DOE, as part of its monthly report, a statement certifying that the natural gas produced for export in the form of LNG in the prior month did not result in the venting of byproduct carbon dioxide (CO₂) into the atmosphere, unless required for emergency, maintenance, or operational exigencies and in compliance with the FERC Order.

I. Floodplain Statement of Findings

As stated in the 2020 ROD, DOE prepared a Floodplain Statement of Findings in accordance with DOE's regulations, entitled "Compliance with Floodplain and Wetland Environmental Review Requirements."¹⁵⁷ The required floodplain assessment was conducted during development and preparation of the EIS, which determined that portions of the Project would be located in floodplains.¹⁵⁸ While the placement of the Project within floodplains would be unavoidable, DOE determined that the proposed design for the Project minimizes floodplain impacts to the extent practicable.

¹⁵⁷ 10 C.F.R. Part 1022.

¹⁵⁸ Final EIS at 4-164 to 4-166.