

UNITED STATES OF AMERICA

DEPARTMENT OF ENERGY

OFFICE OF FOSSIL ENERGY AND CARBON MANAGEMENT

ALASKA LNG PROJECT LLC

)
)
)

DOCKET NO. 14-96-LNG

ORDER DENYING REQUEST FOR REHEARING OF
DOE/FECM ORDER NO. 3643-C AFFIRMING AND AMENDING
DOE/FE ORDER NO. 3643-A

DOE/FECM ORDER NO. 3643-D

JUNE 14, 2023

TABLE OF CONTENTS

I. INTRODUCTION.....	1
II. BACKGROUND.....	4
A. Application Proceeding Resulting in Alaska LNG Order (Order No. 3643-A).....	4
B. Initial Rehearing Proceeding Resulting in Partial Grant of Rehearing (Order No. 3643-B).....	6
C. NEPA Proceeding Resulting in Issuance of Final SEIS.....	7
D. Conclusion of Initial Rehearing Proceeding Resulting in Order No. 3643-C.....	8
E. Intervenor’s Request for Rehearing of Order No. 3643-C.....	10
III. PROCEDURAL MATTERS.....	10
IV. DISCUSSION	11
A. The Purpose and Need Statement in the Final SEIS Complies with NEPA	11
1. Intervenor’s Position	11
2. AGDC’s Answer	12
3. DOE’s Analysis.....	13
B. The No Action Alternative is Reasonable and Complies with NEPA	15
1. Intervenor’s Position	15
2. AGDC’s Answer	16
3. DOE’s Analysis.....	17
C. The Final SEIS Satisfies NEPA’s Incomplete or Unavailable Information Requirements.....	21
1. Intervenor’s Position	21
2. AGDC’s Answer	22
3. DOE’s Analysis.....	22
D. The Final SEIS Does Not Make Unsupported Assertions About Byproduct CO ₂ Injection.....	26
1. Intervenor’s Position	26
2. AGDC’s Answer	27
3. DOE’s Analysis.....	28
E. The Final SEIS Adequately Addresses Potential Seismic Impacts from Proposed Carbon Storage on the North Slope and CO ₂ Pipeline Safety Concerns.....	32
1. Intervenor’s Position	32
2. AGDC’s Answer	33
3. DOE’s Analysis.....	33
F. The Final SEIS Adequately Addresses Methane Leakage.....	35
1. Intervenor’s Position	35
2. AGDC’s Answer	36

3. DOE’s Analysis.....	37
G. The Final SEIS Adequately Addresses Overseas Impacts	40
1. Intervenor’s Position	40
2. AGDC’s Answer	41
3. DOE’s Analysis.....	41
H. DOE Is Not Required to Determine Market Need for the Approved Exports or to Assess Project Viability Under NGA Section 3(a).....	44
1. Intervenor’s Position	44
2. AGDC’s Answer	47
3. DOE’s Analysis.....	48
I. Intervenor’s Remaining NGA Arguments Are Beyond the Scope of This Proceeding Or Are Reframings of Criticisms of the Final SEIS Already Addressed Above	53
1. Intervenor’s Position	53
2. AGDC’s Answer	53
3. DOE’s Analysis.....	54
V. CONCLUSION	59
VI. ORDER	59

FREQUENTLY USED ACRONYMS

AGDC	Alaska Gasline Development Corporation
APA	Administrative Procedure Act
Bcf/yr	Billion Cubic Feet per Year
CCS	Carbon Capture and Sequestration
CO ₂	Carbon Dioxide
DOE	U.S. Department of Energy
EIS	Environmental Impact Statement
EOR	Enhanced Oil Recovery
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
FSEIS	Final Supplemental Environmental Impact Statement
FTA	Free Trade Agreement
GHG	Greenhouse Gas
GTP	Gas Treatment Plant
KRU	Kuparuk River Unit
LCA	Life Cycle Analysis
LNG	Liquefied Natural Gas
NEPA	National Environmental Policy Act
NGA	Natural Gas Act
ROD	Record of Decision
SEIS	Supplemental Environmental Impact Statement

I. INTRODUCTION

This Order marks the culmination of a nearly decade-long administrative process involving an application (Application)¹ to export liquefied natural gas (LNG) filed by Alaska LNG Project LLC (Alaska LNG) in 2014.² Alaska LNG had requested long-term authorization to export Alaskan-sourced LNG from the proposed Alaska LNG Project, being developed by Intervenor Alaska Gasline Development Corporation (AGDC), to non-free trade agreement (non-FTA) countries³ under section 3(a) of the Natural Gas Act (NGA).⁴ In 2020, the Department of Energy's (DOE) Office of Fossil Energy (now the Office of Fossil Energy and Carbon Management)⁵ granted the application in DOE/FE Order No. 3643-A (the Alaska LNG Order),⁶ together with a Record of Decision (ROD) under the National Environmental Policy Act (NEPA).⁷ DOE's decision in granting the Alaska LNG Order was based in part on DOE's adoption of the Federal Energy Regulatory Commission's (FERC) environmental impact statement (EIS) for the Alaska LNG Project prepared under NEPA and an order approving

¹ Alaska LNG Project LLC, Application for Long-Term Authorization to Export Liquefied Natural Gas, Docket No. 14-96-LNG (July 18, 2014).

² Additional background and procedural history are set forth in § II. 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).

³ Non-FTA countries are countries with which the United States has not entered into a FTA requiring national treatment for trade in natural gas, and with which trade is not prohibited by U.S. law or policy. The United States currently has FTAs requiring national treatment for trade in natural gas with Australia, Bahrain, Canada, Chile, Colombia, Dominican Republic, El Salvador, Guatemala, Honduras, Jordan, Mexico, Morocco, Nicaragua, Oman, Panama, Peru, Republic of Korea, and Singapore. FTAs with Israel and Costa Rica do not require national treatment for trade in natural gas.

⁴ 15 U.S.C. § 717b(a). Alaska LNG had also requested long-term authorization to export Alaska-sourced LNG to FTA countries under NGA section 3(c), 15 U.S.C. § 717b(c). In 2014, DOE granted the FTA authorization in DOE/FE Order No. 3554. The FTA order remains in effect and is not at issue.

⁵ The Office of Fossil Energy (FE) changed its name to the Office of Fossil Energy and Carbon Management (FECM) on July 4, 2021. The authority to regulate the imports and exports of natural gas, including LNG, 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-FE1-2023, issued on April 10, 2023.

⁶ *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].

⁷ 42 U.S.C. § 4321 *et seq.*

AGDC’s construction and operation of the Alaska LNG Project under the NGA (FERC Order).⁸ The U.S. Circuit Court of Appeals for the District of Columbia Circuit (D.C. Circuit) upheld the FERC Order less than one month ago, over environmental challenges brought by Center for Biological Diversity and Sierra Club.⁹

In 2020, Sierra Club challenged the Alaska LNG Order in a request for rehearing filed with DOE,¹⁰ as well as in a petition for review filed in the D.C. Circuit.¹¹ In 2021, DOE issued an Order on Rehearing (DOE/FE Order No. 3643-B) in which DOE granted Sierra Club’s request for rehearing in part.¹² In satisfaction of its commitments set forth in that Rehearing Order, DOE issued: (i) on January 6, 2023, a final supplemental EIS (Final SEIS) under NEPA that evaluated the potential environmental impacts associated with exporting LNG from the proposed Alaska LNG Project to non-FTA countries,¹³ and (ii) on April 13, 2023, DOE/FECM Order No. 3643-C, which affirmed and amended the Alaska LNG Order on the basis of the Final SEIS and included an Amended ROD.¹⁴

Specifically, in Order No. 3643-C, DOE concluded that, “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

⁸ *Alaska Gasline Dev. Corp.*, Order Granting Authorization Under Section 3 of the Natural Gas Act, 171 FERC ¶ 61,134 at PP 1-2 [hereinafter FERC Order], *reh’g denied*, 172 FERC ¶ 61,214 (2020).

⁹ *Ctr. for Biological Diversity v. FERC*, 67 F.4th 1176 (D.C. Cir. 2023) (*CBD*); *see infra* § II.A.

¹⁰ Sierra Club, Request for Rehearing, Docket No. 14-96-LNG (Sept. 21, 2020).

¹¹ *See Sierra Club v. U.S. Dep’t of Energy*, No. 20-1503, Order (D.C. Cir. June 30, 2021). This case is currently being held in abeyance. The D.C. Circuit directed DOE to file status reports in 60-day intervals. DOE submitted its most recent status report on April 28, 2023.

¹² *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]; *see infra* § II.B.

¹³ *See U.S. Dep’t of Energy*, Notice of Availability of the Final Supplemental Environmental Impact Statement for the Alaska LNG Project, 88 Fed. Reg. 1571, 1572 (Jan. 11, 2023) (noting that the Final SEIS was signed on Jan. 6, 2023); *see infra* § II.C.

¹⁴ *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, Docket 14-96-LNG, Order Affirming and Amending DOE/FE Order No. 3643-A Following Partial Grant of Rehearing (Apr. 13, 2023), <https://www.energy.gov/sites/default/files/2023-04/ord3643-C.pdf>; *see infra* § II.D.

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).¹⁵ The venting prohibition (or venting condition) refers to a requirement that DOE added to the Alaska LNG Order (as Ordering Paragraph Q), based on a recommendation in the Final SEIS, to reduce emissions of greenhouse gases (GHGs) from the Alaska LNG Project by prohibiting the venting of byproduct carbon dioxide (CO₂) into the atmosphere unless required under limited circumstances.¹⁶ On this basis, DOE affirmed the Alaska LNG Order and ROD, as supplemented by Order No. 3643-C and the Amended ROD.¹⁷ DOE also granted a motion filed by Center for Biological Diversity and Cook Inletkeeper to intervene out of time in the rehearing proceeding.¹⁸

On May 15, 2023, Center for Biological Diversity, Cook Inletkeeper, and Sierra Club (together, Intervenors) jointly filed a Request for Rehearing of Order No. 3643-C.¹⁹ On June 8, 2023, AGDC filed a Motion for Leave to Answer and Answer to Intervenors’ Request for Rehearing.²⁰ For the reasons set forth below, DOE grants AGDC’s Motion for Leave to Answer, denies the Intervenors’ Request for Rehearing, and affirms the findings and conclusions in Order No. 3643-C.

¹⁵ *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 26; *see infra* § II.D.

¹⁶ *See Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 27 (Ordering Para. A, amending Section XI of Order No. 3643-A); *see also infra* § II.D (discussing new venting prohibition).

¹⁷ *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 26.

¹⁸ *See id.* at 21, 27 (Ordering Para. C).

¹⁹ Center for Biological Diversity, *et al.*, Request for Rehearing of Order Granting Authorization of the Alaska LNG Project, Docket No. 14-96-LNG (May 15, 2023) [hereinafter Rehearing Request].

²⁰ Alaska Gasline Dev. Corp., Motion for Leave to Answer and Answer to Intervenors’ Request for Rehearing, Docket No. 14-96-LNG (June 8, 2023) [hereinafter AGDC Answer]; *see also infra* §§ III, VI.A.

II. BACKGROUND

A. Application Proceeding Resulting in Alaska LNG Order (Order No. 3643-A)

AGDC, an independent, public corporation of the State of Alaska, plans to site, construct, and operate the Alaska LNG Project.²¹ As approved in the FERC Order issued in 2020,²² the Alaska LNG Project includes the following three elements:

- (i) A natural gas treatment plant (often referred to as the Gas Treatment Plant or GTP) to be located in the Prudhoe Bay Unit on the North Slope of Alaska;²³
- (ii) An approximately 800-mile-long pipeline to extend from the Gas Treatment Plant and terminate at the liquefaction facilities to be located on the Kenai Peninsula (the Liquefaction Facility); and
- (iii) The Liquefaction Facility, to be located on the eastern shore of Cook Inlet in the Nikiski area of the Kenai Peninsula, with a planned liquefaction capacity of 20 million metric tons per year of LNG, equivalent to approximately 929 billion cubic feet per year (Bcf/yr) of natural gas.²⁴

To fulfill its obligations under NEPA, DOE participated as a cooperating agency in FERC's review of the Alaska LNG Project.²⁵ FERC issued the final EIS for the Alaska LNG Project on March 6, 2020,²⁶ which DOE adopted.²⁷ The final EIS contained 164 site-specific environmental mitigation measures, which FERC staff recommended that FERC attach as conditions to any authorization of the Alaska LNG Project.²⁸

²¹ The Alaska State Legislature provided AGDC with the authority and primary responsibility for developing a LNG project on the State's behalf. *See* Alaska LNG Order at 1 n.6 (citing Alaska Stat. § 31.25.005).

²² *See supra* note 8.

²³ 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* Alaska LNG Order at 28.

²⁴ *See* FERC Order at PP 2-3.

²⁵ *See* Alaska LNG Order at 23, 32.

²⁶ Fed. Energy Regulatory Comm'n, *Alaska LNG Project Final Environmental Impact Statement*, Docket No. CP17-178-000 (Mar. 6, 2020), *available at* <https://www.ferc.gov/industries-data/natural-gas/final-environmental-impact-statement-0> [hereinafter final EIS].

²⁷ *See* Alaska LNG Order at 5.

²⁸ *See id.* (citing final EIS at 5-50 to 5-77).

On May 21, 2020, FERC issued the FERC Order, authorizing AGDC to site, construct, and operate the Alaska LNG Project under NGA section 3 subject to 165 environmental conditions—the recommended 164 environmental mitigation measures, plus one additional condition.²⁹ As noted above, the D.C. Circuit recently upheld the FERC Order and dismissed Center for Biological Diversity’s and Sierra Club’s joint petition for review, holding in relevant part that “FERC’s decision to authorize the Alaska [LNG] Project was lawful and reasonable” under NEPA, the NGA, and the Administrative Procedure Act (APA).³⁰

On August 20, 2020, DOE issued the Alaska LNG Order (Order No. 3643-A). After reviewing an extensive record examining both environmental and non-environmental factors,³¹ DOE found that “the opponents of the Application have failed to overcome the statutory presumption that Alaska LNG’s proposed exports are consistent with the public interest under NGA section 3(a).”³² DOE conditioned the Alaska LNG Order on Alaska LNG’s compliance with the 165 environmental conditions adopted in the FERC Order, among other requirements.³³ As an appendix to the Alaska LNG Order, DOE issued a ROD under NEPA.³⁴

Under Order No. 3643-A, Alaska LNG is authorized to export LNG by vessel from the proposed Project in a volume equivalent to 929 Bcf/yr (2.55 Bcf per day) of natural gas 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.³⁵ Additionally, Alaska LNG is required to commence export operations from the Project to non-FTA countries within

²⁹ See FERC Order at PP 249-250, 253; *see also* Alaska LNG Order at 24-27.

³⁰ *CBD*, 67 F.4th at 1180; *see also id.* at 1188 (“In approving the Alaska [LNG] Project, the Commission complied with the NGA, NEPA, and the APA. [Center for Biological Diversity] fails to provide any reason for this court to disturb the Commission’s reasonable determinations.”).

³¹ *See, e.g.*, Alaska LNG Order at 20, 27 (summarizing the record).

³² *See id.* at 35-36.

³³ *See id.* at 42 (Ordering Para. H).

³⁴ *See id.* at 46 (Appendix).

³⁵ *See id.* at 41 (Ordering Paras. A, C).

12 years of the date that the Order was issued, *i.e.*, by August 20, 2032, or the non-FTA authorization will expire.³⁶

AGDC has stated that it is in negotiations with producer members of Alaska LNG to obtain an option to purchase Alaska LNG.³⁷ Currently, however, AGDC holds the FERC authorization (for the Alaska LNG Project), and Alaska LNG holds the DOE authorization (for exports from the Alaska LNG Project).

B. Initial Rehearing Proceeding Resulting in Partial Grant of Rehearing (Order No. 3643-B)

On September 21, 2020, intervenor Sierra Club timely filed a Request for Rehearing of the Alaska LNG Order.³⁸ In response, DOE issued a Notice Providing for Further Consideration of Request for Rehearing and Motion for Leave to Answer on October 20, 2020,³⁹ followed by the Rehearing Order on April 15, 2021.⁴⁰ As noted above, Sierra Club also filed a petition for review challenging the Alaska LNG Order in the D.C. Circuit.⁴¹

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.⁴² 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

³⁶ See *id.* (Ordering Para. D).

³⁷ See Alaska LNG Order at 1 n.7 (citing FERC Order at P 5).

³⁸ Sierra Club, Request for Rehearing, Docket No. 14-96-LNG (Sept. 21, 2020). AGDC (also an intervenor) filed a Motion for Leave to Answer and Answer to Sierra Club’s Request for Rehearing, which DOE granted.

³⁹ *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)).

⁴⁰ See *supra* note 12.

⁴¹ See *supra* note 11.

⁴² See Rehearing Order at 2, 13-15, 18.

Order.”⁴³ 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.⁴⁴

C. NEPA Proceeding Resulting in Issuance of Final SEIS

On July 2, 2021, DOE provided notice in the *Federal Register* that it intended to prepare a SEIS for the Alaska environmental study proceeding under NEPA (DOE/EIS-0512-S1).⁴⁵

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.⁴⁶

DOE also announced that it had commissioned DOE’s National Energy Technology Laboratory to conduct both studies.⁴⁷

On June 29, 2022, DOE published a Notice of Availability for the Draft SEIS in the *Federal Register* and invited public comment on the Draft SEIS for a 45-day period that began on July 1, 2022, and ended on August 15, 2022.⁴⁸

⁴³ *Id.* at 18 (citing 15 U.S.C. § 717r(a)).

⁴⁴ *See id.* at 15-18.

⁴⁵ *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) [hereinafter NOI].

⁴⁶ *See id.* at 35,281. DOE 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.

⁴⁷ *See* NOI, 86 Fed. Reg. at 35,281.

⁴⁸ *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> (inviting public comment and announcing virtual public meeting).

On January 6, 2023, following DOE’s review of the comments received in response to the Draft SEIS and its consideration of additional technical analysis, DOE issued a Notice of Availability for the Final SEIS.⁴⁹

D. Conclusion of Initial Rehearing Proceeding Resulting in Order No. 3643-C

Consistent with its commitments in the Rehearing Order, DOE issued Order No. 3643-C on April 13, 2023, together with an Amended ROD as an appendix to the order. The Amended ROD presented 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 informed DOE’s decision in Order No. 3643-C.⁵⁰

Specifically, in Order No. 3643-C, DOE found that the environmental impacts presented in the Final SEIS were not sufficient to alter DOE’s determination 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.⁵¹ Accordingly, DOE affirmed the conclusions in the Alaska LNG Order (and the ROD) with one modification—an amendment recommended by Sierra Club in joint comments submitted with Intervenor Cook Inletkeeper and Center for Biological Diversity (and other environmental organizations) on the Draft SEIS and included as a recommendation in the Final SEIS.⁵²

⁴⁹ See U.S. Dep’t of Energy, Alaska LNG Project, Final Environmental Impact Statement (Jan. 2023), <https://www.energy.gov/nepa/articles/doeis-0512-s1-final-supplemental-environmental-impact-statement-january-6-2023> [hereinafter Final SEIS]; see also U.S. Dep’t of Energy, Notice of Availability of the Final Supplemental Env’t Impact Statement for the Alaska LNG Project, 88 Fed. Reg. 1571 (Jan. 11, 2023).

⁵⁰ See *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 28-51.

⁵¹ See *id.* at 6.

⁵² See *id.* (citing Sierra Club, *et al.* Comments on Draft SEIS at 14-15). Sierra Club and its joint commenters recommended 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.”

This amendment—in the form of a new requirement set forth in the Alaska LNG Order (Ordering Paragraph Q)—states as follows:

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.⁵³

DOE stated that it “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.”⁵⁴ DOE further stated that, “[i]n all other respects, the Ordering Paragraphs in the Alaska LNG Order (Order No. 3643-A) remain unchanged.”⁵⁵

Additionally, DOE granted a late-filed motion to intervene filed by Cook Inletkeeper and Center for Biological Diversity (Movants).⁵⁶ After considering the unique posture of the proceeding and the potential impact of granting the motion on AGDC and other parties, DOE found that Movants had shown good cause for seeking to intervene out of time “under 10 C.F.R. § 590.303(d), subject to the limitation set forth in 10 C.F.R. § 590.303(h).”⁵⁷ Specifically, DOE stated that it “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 ... pertains to the environmental analysis

⁵³ *Id.* at 27 (Ordering Para. A) (citing FERC Order).

⁵⁴ *Id.* at 7 (citing Final SEIS at 4.19-12).

⁵⁵ *Id.* (referencing Ordering Para. B).

⁵⁶ *See Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 7-12 (summarizing arguments by Movants and AGDC).

⁵⁷ *Id.* at 21; *see also id.* at 16-21. 10 C.F.R. § 590.303(h) requires that, if DOE grants a motion for late intervention, the intervenor “shall accept the record of the proceeding as it was developed prior to the intervention.”

presented in DOE’s Final SEIS and the related environmental findings in this Order and Amended Record of Decision.”⁵⁸

E. Intervenor’s Request for Rehearing of Order No. 3643-C

Intervenors timely filed the Request for Rehearing on May 15, 2023, seeking rehearing of Order No. 3643-C.⁵⁹ AGDC submitted its Motion and Answer on June 8, 2023.⁶⁰ We summarize and address their arguments below.

III. PROCEDURAL MATTERS

On June 8, 2023, AGDC submitted a Motion for Leave to Answer the Request for Rehearing, together with the Answer. AGDC correctly notes that DOE’s regulations generally do not permit answers to requests for rehearing.⁶¹ AGDC states, however, that DOE has accepted answers to requests for rehearing for good cause when the answers are likely to assist with its decision-making process.⁶² AGDC thus asserts that DOE should grant its Motion where its Answer is relevant to the issues raised in Intervenor’s Rehearing Request, will assist DOE in its decision-making process, and will enable DOE to compile a complete record.⁶³

In the Rehearing Order of April 2021, we accepted an answer filed by AGDC in response to Intervenor Sierra Club’s request for rehearing.⁶⁴ We stated that, because AGDC was the FERC authorization holder for the Alaska LNG Project, its answer was relevant to DOE’s consideration of the issues raised in that rehearing request.⁶⁵ This rationale continues to apply in the current rehearing proceeding, where AGDC not only offers a unique perspective as the

⁵⁸ *Id.* at 20; *see infra* § III.

⁵⁹ *See supra* note 19.

⁶⁰ *See supra* note 20.

⁶¹ *See* 10 C.F.R. § 590.505; *see also* AGDC Answer at 1.

⁶² *See* AGDC Answer at 1-2 (citations omitted).

⁶³ *Id.* at 2.

⁶⁴ *See* Rehearing Order at 11.

⁶⁵ *Id.*

project sponsor and FERC authorization holder for the Alaska LNG Project, but also has been an active participant in the DOE proceedings (including the SEIS proceeding) and is an intervenor in the pending D.C. Circuit litigation. For these reasons, we grant AGDC’s Motion for Leave to Answer under 10 C.F.R. § 590.505.⁶⁶

IV. DISCUSSION

As a preliminary matter, we note that the majority of Intervenors’ arguments under the NGA challenging Order No. 3643-C are a reframing of their NEPA arguments challenging the Final SEIS on which Order No. 3643-C was based.⁶⁷ Because this rehearing proceeding is focused on the SEIS and, specifically, how the SEIS informed DOE’s decision in Order No. 3643-C, we begin with Intervenors’ NEPA arguments.

A. The Purpose and Need Statement in the Final SEIS Complies with NEPA

1. Intervenors’ Position

Intervenors argue that DOE’s characterization of the purpose and need improperly adopts Alaska LNG’s characterization of the purpose and need for the proposed Project, as opposed to “independently evaluating the Project’s purpose in light of the Natural Gas Act.”⁶⁸ They argue that the purpose and need statement “drives the selection of alternatives” and should not be so narrow in purpose as to prevent DOE from considering reasonable alternatives, even outside DOE’s jurisdiction, that may diverge from Alaska LNG’s goals but that would successfully address NEPA requirements, agency goals, and reduce the likelihood of severe environmental impacts.⁶⁹ Intervenors allege DOE failed to consider reasonable alternatives, such as a

⁶⁶ See *infra* § VI (Ordering Para. A).

⁶⁷ See, e.g., Rehearing Request at 2-3.

⁶⁸ *Id.* at 19.

⁶⁹ *Id.* at 20.

renewable energy alternative, that they allege would provide similar benefits with different, and potentially less severe, environmental impacts.⁷⁰

Because of DOE's alleged narrow purpose and need, Intervenor's argue that DOE rejected alternatives that are "more likely to serve the public interest than the Project," and failed to consider studies critical of Arctic fossil fuel projects.⁷¹ Intervenor's assert that DOE's NEPA review is not siloed from its decision-making under the Natural Gas Act but is meant to ensure DOE makes "fully informed decisions under the NGA."⁷² They allege that, by "unquestionably adopting an applicant's objective as the purpose and need"⁷³ DOE excluded discussion of alternatives that would inform the decision under the NGA, which undercuts "NEPA's important informational role" and turns environmental review into a "formalistic check-the-box exercise."⁷⁴

2. AGDC's Answer

AGDC contends that the purpose and need for the Project itself "is the same purpose and need for LNG exports."⁷⁵ AGDC states that, because the purpose and need was already at issue in the context of FERC's EIS, it is not appropriate to reconsider the purpose and need in this proceeding.⁷⁶

⁷⁰ *Id.* at 19, 20.

⁷¹ *Id.*

⁷² *Id.*

⁷³ Rehearing Request at 21.

⁷⁴ *Id.*

⁷⁵ AGDC Answer at 9.

⁷⁶ *See id.* More broadly, AGDC argues that most of Intervenor's arguments "represent an impermissible collateral attack on orders affirming that FERC's EIS complies with NEPA," and thus are barred by the doctrines of collateral estoppel and *res judicata*. Rehearing Request at 4; *see also id.* at 5-9. Specifically, AGDC asserts that, because the D.C. Circuit has affirmed that FERC's environmental review complies with NEPA, Intervenor's are collaterally estopped from challenging DOE's compliance with NEPA on all issues that FERC reviewed (or could have reviewed) for the Alaska LNG Project—meaning all issues except "whether DOE's analysis of downstream impacts comports with NEPA." *Id.* at 9.

3. DOE's Analysis

Intervenors incorrectly characterize what is required for an agency's purpose and need statement under NEPA. The NEPA regulations issued by the Council on Environmental Quality (CEQ) direct that an EIS "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action."⁷⁷ A court reviews an agency's statement of purpose and need for reasonableness, giving considerable discretion to the agency to define the purpose of its action.⁷⁸ When the agency action consists of a decision whether to issue a permit or approval for an undertaking by a private entity, the stated purpose of the agency's action properly may account for the private goals of the applicant, while also considering the agency's own objectives in exercising its authority.⁷⁹

DOE's statement of purpose and need more than meets the standard of reasonableness, and Intervenors mischaracterize this requirement to fit their aims, not that of NEPA. Further, as AGDC points out, the purpose and need has not changed between FERC's EIS (which DOE adopted and the D.C. Circuit recently found complied with NEPA) and the Final SEIS. In the Final SEIS, DOE clearly describes the purpose and need for DOE's action: "DOE must meet its obligation under Section 3(a) of the NGA to authorize the import and/or export of natural gas, including LNG, unless it finds that the proposed import or export would not be consistent with the public interest.... DOE prepared this Final SEIS in furtherance of its Rehearing Order, and to more fully evaluate the potential environmental impacts associated with natural gas production on the North Slope and consider a [LCA] for GHG emissions of exporting LNG from the

⁷⁷ 40 C.F.R. § 1502.13.

⁷⁸ See *Alaska Survival v. Surface Transp. Bd.*, 705 F.3d 1073, 1084 (9th Cir. 2013).

⁷⁹ *Id.* at 1085 ("Congress did not expect agencies to determine for the applicant what the goals of the applicant's proposal should be.") (quoting *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 199 (D.C. Cir. 1991)).

proposed Project to non-FTA countries.”⁸⁰ The Final SEIS then properly recounts that AGDC’s purpose and need for the proposed Project is to commercialize the natural gas resources of Alaska’s North Slope, primarily by converting the existing natural gas supply to LNG for export by Alaska LNG and providing natural gas to users within Alaska.⁸¹ Thus, the Final SEIS plainly states the purpose of DOE’s action of exercising its authority under section 3(a) of the NGA while also considering AGDC’s (and Alaska LNG’s) goals for the Project.⁸² DOE’s preparation of the SEIS did not change the purpose and need of the proposed action, first reviewed and analyzed thoroughly in the EIS, nor should it.

In Intervenor’s view, DOE too narrowly defined the purpose and need, which prevented DOE from including a renewable energy alternative or seriously considering a no action alternative,⁸³ either of which they claim is far more likely to serve the public interest than the Project itself. First, as discussed more fully in the following section, notwithstanding Intervenor’s assertion, DOE did include and seriously consider a no action alternative. By considering the environmental impacts of a decision to deny authorization of exports from the Alaska LNG facility to non-FTA countries, DOE appropriately accounted for DOE’s own objectives in exercising its authority under section 3 of the NGA to approve only those exports that are not inconsistent with the public interest.

Second, with respect to other alternatives, an agency is not required to analyze every possible alternative, only those deemed “reasonable.”⁸⁴ In the related FERC lawsuit concerning the Alaska LNG Project, the D.C. Circuit recently explained that, “because some alternatives

⁸⁰ Final SEIS at 1-6.

⁸¹ *Id.* at 1-7.

⁸² *See Alaska Survival*, 705 F.3d at 1085 (purpose and need statement in connection with approval of private rail line was proper where it reflected both the agency’s “enabling statute and the applicant’s needs”).

⁸³ Intervenor’s arguments on the no action alternative are addressed in subsection B, *infra*.

⁸⁴ The term “reasonable alternatives” is defined as “a reasonable range of alternatives that are technically and economically feasible and meet the purpose and need for the proposed action.” 40 C.F.R. § 1508.1(z).

will be impractical or fail to further the proposed action’s purpose, agencies may reject unreasonable alternatives after only brief discussion.”⁸⁵ To meet the stated objective of the SEIS “to more fully evaluate the potential environment impacts associated with natural gas production on the North Slope and to consider a [LCA] for GHG emissions of exporting LNG from the proposed Project to non-FTA counties,”⁸⁶ DOE did not identify any additional alternatives, beyond the No Action Alternative, to those analyzed under the 2020 EIS.⁸⁷ Although renewable energy has many notable benefits, a renewable energy alternative is not a reasonable alternative to DOE’s proposed action. DOE’s proposed action serves to fulfill its responsibilities under section 3(a) of the NGA while considering Alaska LNG’s goals for the Project. Unlike the No Action Alternative that DOE considered, a renewable energy alternative as proposed by Intervenor, is not one that DOE could effectuate under the NGA, and so was an alternative that neither accounted for the private goals of the applicant nor was relevant to DOE’s consideration of its own objectives in exercising its NGA authority.⁸⁸ The statement of purpose and need was therefore reasonable and provided a proper basis for DOE to exclude renewable energy as an alternative for detailed analysis.

B. The No Action Alternative is Reasonable and Complies with NEPA

1. Intervenor’s Position

Intervenor asserts that the Final SEIS omits a “true no action alternative” in violation of NEPA.⁸⁹ Instead, the Final SEIS “only presents as ‘different perspectives’ the two most extreme

⁸⁵ *CBD*, 67 F.4th at 1182.

⁸⁶ Final SEIS at 1-6.

⁸⁷ *Id.* at 2-20.

⁸⁸ See *Theodore Roosevelt Conservation P’ship v. Salazar*, 661 F.3d 66, 74-75 (D.C. Cir. 2011) (noting that agencies define their purpose and need in the context of Congressional direction and statutory authority and holding that the Department of Interior selected a reasonable range of alternatives addressing a proposal to expand natural gas development in light of the limitations in the agency’s purpose.)

⁸⁹ Rehearing Request at 21.

possible no action scenarios,” No Action Alternative 1 and No Action Alternative 2, neither of which is likely to occur.⁹⁰ Intervenor state that instead of a single no action alternative, DOE posits two implausible actions, and fails “to identify any realistic no action alternative, or to adequately explain why one could not be identified,” in violation of NEPA.⁹¹ They argue DOE’s two unrealistic alternatives go “no further than identifying the best and worst imaginable scenarios,” which does not provide a basis to weigh the Project’s climate impacts against its purported benefits.⁹² Intervenor reject DOE’s assertion that there is too much uncertainty surrounding the energy market to provide a realistic no action alternative as sufficient rationale. They propose instead that DOE could use the NERA modeling the Applicant submitted,⁹³ which they argue could be used to more accurately estimate the Project’s GHG emissions.⁹⁴ Intervenor argue that DOE’s No Action Alternative 1 violates NEPA because it assumes perfect substitution of other LNG for the Project’s natural gas, and, to the extent relied upon by DOE, would inappropriately minimize the Project’s climate impacts.⁹⁵ Finally, Intervenor claim DOE’s explanation in Order 3643-C that the GHG and climate impacts “are likely to be closer to the difference between No Action Alternative 1 and the Project scenarios” is inconsistent with the analysis in the Final SEIS.⁹⁶

2. AGDC’s Answer

AGDC disputes Intervenor’s contention “that DOE provided two No Action Alternatives that provide a range of downstream impacts” and that “the FSEIS lacks a ‘true’ No Action

⁹⁰ *Id.*

⁹¹ *Id.* at 23.

⁹² *Id.*

⁹³ *Id.* at 24.

⁹⁴ *Id.* at 16-17.

⁹⁵ Rehearing Request at 23.

⁹⁶ *Id.* at 17 (quoting DOE Order 3643-C at 24-25).

Alternative.”⁹⁷ AGDC states that the “argument ignores DOE’s rationale for providing the range and is based on the same demand for more precision that the Courts have already held would be speculative and DOE does not have to provide.”⁹⁸ DOE concluded that a range of impacts was appropriate for evaluation, and “[t]he specificity demanded by Intervenor is neither possible nor required by NEPA.”⁹⁹ AGDC stresses that “DOE’s decision not to provide greater specificity is not that information is missing, it is that any study that would attempt to provide greater specificity would be too speculative and unreliable due to changing market conditions, including fuel switching.”¹⁰⁰

3. DOE’s Analysis

As a follow-on to Intervenor’s claims that DOE took an overly narrow view of the proposed action and reasonable alternatives to it, Intervenor confusingly then argue that DOE’s broad consideration of two scenarios of a no action alternative are not “true” alternatives and preclude DOE “from reaching a meaningful conclusion about the Project’s impacts on the climate.”¹⁰¹ This is simply not the case. And, as AGDC argues, any greater specificity would be “too speculative and unreliable,”¹⁰² and not more meaningful to DOE or the public. As Intervenor state, and DOE agrees, NEPA regulations require agencies to consider and evaluate a no action alternative, which serves as a baseline against which the impacts of the proposed action are compared and contrasted.¹⁰³ As we explained in Order No. 3643-C, the Final SEIS identifies two No Action Alternatives, instead of the typical one, to provide different perspectives for assessing cumulative GHG effects in comparison to the estimated GHG emissions from the

⁹⁷ AGDC Answer at 19.

⁹⁸ *Id.*

⁹⁹ *Id.* at 20.

¹⁰⁰ *Id.*

¹⁰¹ Rehearing Request at 21-22.

¹⁰² AGDC Answer at 20.

¹⁰³ 40 C.F.R. § 1502.14(c); *see* Rehearing Request at 22.

proposed Project.¹⁰⁴ While they are labeled as two No Action Alternatives, both are evaluations of the same DOE action that the Alaska LNG Project would not be constructed because DOE denied authorization for export to non-FTA countries from the Alaska LNG Project. Without the assumption of the impacts of construction and operation of the Project, DOE appropriately recognizes in the SEIS that ongoing energy production activities on the North Slope would continue and that there may still be foreign market demand for LNG that could be met by other sources of supply. These anticipated conditions are accounted for in 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 be provided by another source of LNG (and crude oil).¹⁰⁵

These two No Action Alternatives are included “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.”¹⁰⁶ In spite of the uncertainty, and as a means to reasonably address it, in the Final SEIS DOE appropriately quantifies estimated projections of life cycle GHG emissions data for both No Action Alternatives and presents alternative views of potential GHG emissions impacts, both marginal and substantial.¹⁰⁷ In fact, DOE accounted for and acknowledged that projected life cycle GHG emissions from the Project

¹⁰⁴ Final SEIS at 2-23 to 2-24.

¹⁰⁵ *Id.*

¹⁰⁶ *Id.* at 2-20, 2-24, and 4.19-5 to 4.19-6.

¹⁰⁷ *Id.* at 2-20, 2-23, and 4.19-5.

would likely be substantially greater than the estimated life cycle emissions in No Action Alternative 2.¹⁰⁸ Intervenor raise no new or compelling reason why their proposed NERA modeling for this proposed action—which they claim would represent a truer middle ground between the two No Action Alternatives¹⁰⁹—would mitigate this uncertainty and provide a more realistic no action scenario. Contrary to the Intervenor’s unsupported assertion concerning the lack of a “true” no action alternative, DOE’s analysis of two no action alternatives is meaningful and reasonable as a baseline for comparison to the proposed action.¹¹⁰

More significantly and on point, the reasonableness of this approach was affirmed by the D.C. Circuit for FERC’s EIS on the Alaska LNG Project.¹¹¹ AGDC similarly points to the fact that Intervenor’s positions calling for greater specificity and precision are not required by NEPA or supported by case law.¹¹² Intervenor’s arguments are no more accurate or persuasive in this instance than before FERC or the D.C. Circuit.

Intervenor also state that DOE’s No Action Alternative 1 incorrectly relies on perfect substitution. This argument is misplaced. No Action Alternative 1 is premised on the need to meet global energy demand as a requirement of proper life cycle analysis (LCA). The LCA Study applied the existing knowledge base for production and liquefaction of natural gas originating from the lower-48 states (sometimes referred to as the Lower 48) as a representative environmental profile to satisfy the global energy demand for natural gas in No Action Alternative 1.¹¹³ This choice was not intended to imply that the lower-48 states are a direct

¹⁰⁸ Amended Record of Decision at 41.

¹⁰⁹ Rehearing Request at 16, 25.

¹¹⁰ As noted by AGDC, “the notion that DOE violated NEPA by analyzing a second No Action Alternative that provided *more* information is ludicrous.” AGDC Answer at 20.

¹¹¹ See *CBD*, 67 F.4th at 1182 (FERC reasonably analyzed the relevant no action alternatives in environmental analysis of the Alaska LNG project, which included two no action alternatives: “something like the Project” being built and “nothing like the Project” being built.)

¹¹² AGDC Answer at 19, 20.

¹¹³ Final SEIS at 4.19-4.

substitution for Alaska LNG production, although it is appropriate as explained in the Final SEIS that “[i]n accordance with International Standards Organization 14040 and 14044 for life cycle analysis, DOE’s LCA Study considers that end use of LNG would be equivalent, under the No Action and Proposed Action scenarios (ISO 2006a; ISO 2006b).”¹¹⁴

Addressing the subject of substitution more generally, DOE expressly stated and acknowledged in the LCA Study that “[t]he analysis presented holds basic macroeconomic and industrial structures static and does not attempt to account for future energy market changes and non-LNG or oil market substitution energy effects. The actual market substitution effects are unknown and could be met by non-LNG sources.”¹¹⁵ In sum, DOE did not rely on perfect substitution as the Intervenor contend, took the requisite “hard look” at the no-action alternative in its resource-by-resource discussion in section 4 of the Final SEIS with respect to No Action Alternative 1, and added No-Action Alternative 2 explicitly to present a different perspective with respect to GHG emissions.¹¹⁶ Contrary to the Intervenor’s assertion that this approach prevented DOE from reaching any meaningful conclusion about the Project’s potential impacts on the climate, the two no action alternatives together more fully informed DOE’s decision by capturing and disclosing for decisionmakers and the public the full breadth of potential impacts that could result from the denial of an authorization for exports from the Alaska LNG Project.

¹¹⁴ *Id.*

¹¹⁵ DOE further explains that “Global energy systems are dynamic and are currently in transition, with carbon reduction policies in place or under consideration in many countries, including the destination markets analyzed, creating uncertainty. Different energy source substitutions could either increase or decrease GHG emissions to provide the same service to society.” *Id.*, Appendix C, at 2.

¹¹⁶ NEPA requires agencies to “take a ‘hard look’ at the environmental consequences before taking a major action.” *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 97 (1983).

C. The Final SEIS Satisfies NEPA’s Incomplete or Unavailable Information Requirements

1. Intervenor’s Position

Intervenors argue that the Final SEIS does not comply with NEPA regulations concerning “incomplete or unavailable information.”¹¹⁷ Specifically, Intervenor’s contend that DOE neglected to follow the CEQ procedural requirements regarding incomplete or unavailable information, noting a lack of specific projection of market demand for LNG exports, as well as a lack of site-specific surveys of water resources, wetlands or wildlife or floodplain mapping.¹¹⁸ Intervenor’s repeat prior arguments that DOE impermissibly failed to make, or attempt to make “specific projections about market demand for LNG exports from the Project,” and DOE should have, according to the Intervenor’s, used the NERA modeling provided by the Applicant to project market demand for LNG exports, or complete its own modeling to gather informed estimates of GHG emissions that the Project may induce.¹¹⁹ Without it, Intervenor’s contend DOE’s Final SEIS did not contain adequate analysis of impacts to support reasoned decision-making.¹²⁰

Intervenors also critique DOE’s reliance on uncertainty as justification for failing to address in greater detail the possible impacts of upstream development along the North Slope and the magnitude of black carbon emissions resulting from the Project.¹²¹ Intervenor’s argue that, while DOE acknowledged the harmful impacts of black carbon, the mere existence of uncertainty about black carbon does not excuse DOE from analyzing the potential magnitude of the reasonably foreseeable Project impacts from black carbon.¹²² Intervenor’s therefore maintain

¹¹⁷ Rehearing Request at 25.

¹¹⁸ *Id.* at 25-26.

¹¹⁹ *Id.* at 25-26.

¹²⁰ *Id.* at 26-27.

¹²¹ *Id.* at 27-28.

¹²² *Id.* at 28.

that DOE did not take a hard look at black carbon as required based on the studies and analyses presented.¹²³

2. AGDC's Answer

AGDC rejects Intervenor's argument that "DOE's order 'summarily dismisses' upstream impacts on the North Slope due to a lack of specific information[,] . . . impacts from the construction of upstream production facilities were [already] described and analyzed in FERC's EIS."¹²⁴ Additionally, AGDC stresses that "DOE's detailed analysis of upstream impacts provided in the FSEIS is in addition to the analysis provided in FERC's EIS, which DOE has adopted."¹²⁵ In addition, according to AGDC, "Intervenors argue . . . that DOE's FSEIS [Final SEIS] does not adequately disclose or analyze the significant black carbon emissions associated with the Project, including upstream infrastructure."¹²⁶ AGDC responds that the Final SEIS does evaluate black carbon impacts in multiple sections.¹²⁷ Further, answering Intervenor's claim "that the FSEIS does not separately quantify black carbon emissions," AGDC points out that the same argument was made on FERC's EIS, but "FERC fully addressed this argument." FERC found that the Intervenor did not "demonstrate how the claimed traits of black carbon make it necessary to conduct an additional, tailored evaluation of impacts and mitigation measures," and AGDC argues that "[t]he same conclusion is appropriate here."¹²⁸

3. DOE's Analysis

Intervenors overstate and misstate what DOE was required to consider and analyze under NEPA in the face of incomplete or unavailable information. Compliance with CEQ regulations

¹²³ Rehearing Request at 29.

¹²⁴ AGDC Answer at 10.

¹²⁵ *Id.* at 11.

¹²⁶ *Id.* at 15.

¹²⁷ *Id.* at 15-16.

¹²⁸ *Id.* at 16.

requires DOE to affirmatively disclose that such information is unavailable; explain the relevance of the unavailable information; summarize existing credible scientific evidence that is relevant to the agency's evaluation of significant adverse impacts on the human environment; and evaluate the impacts based upon theoretical approaches or research methods generally accepted in the scientific community.¹²⁹ All of these steps were followed in the Final SEIS.

Intervenors claim that DOE “does not even attempt to make specific projections of the market demand for LNG exports from the Project which could serve as the basis for more precise GHG emissions estimates” and “ignored the option of relying on the NERA modeling submitted by the applicant,” resulting in an arbitrary consideration of available options and a failure to conduct its own modeling in the alternative.¹³⁰ Contrary to Intervenors' claims, DOE effectively disclosed, examined, and evaluated market demand and GHG estimates in the face of incomplete or missing information in compliance with CEQ requirements. In the Final SEIS and Order 3643-C, DOE acknowledged 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, the adoption of policies and measures to limit GHG emissions, and the penetration of low-carbon energy sources.”¹³¹ DOE did not sidestep the issue and instead undertook significant examination and technical effort to account for incomplete information, in part by adding in the Final SEIS a second No Action Alternative scenario for the life cycle GHG analysis. No Action Alternative 2 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—and therefore enables a perspective on high emissions from the proposed

¹²⁹ 10 C.F.R. § 1502.21(c).

¹³⁰ Rehearing Request at 25, 26.

¹³¹ Order No. 3643-C at 22-23; Final SEIS at S-7, 2-16, 2-20, 2-24, and 4.19-5 to 4.19-6.

Project, so that very different perspectives on potential impacts would be presented.¹³² Given the circumstance of this supplemental review—incomplete or unavailable information concerning the nature, extent, and location of production activities on the North Slope—the Final SEIS makes reasonable assumptions and evaluates realistic hypothetical scenarios to inform decision makers and the public about the potential impacts of the Alaska LNG project and alternatives.

Intervenors also contend that DOE “does not adequately discuss the relevance” of the lack of specific information about planned upstream development on the North Slope, nor provide DOE’s evaluation of these impacts based on theoretical approaches or generally accepted research methods.¹³³ Again, Intervenors’ claims are without merit. The upstream impacts to the North Slope comprise one of two categories of impacts DOE reviewed to supplement - not supplant - existing information and analyses.¹³⁴ In its Answer, AGDC criticizes Intervenors for “flyspecking the one statement concerning a lack of exact locations for certain pads, wells and access roads,” and ignoring DOE’s “robust discussion of the upstream facilities that will be needed on the North Slope as part of the Project”—specifically, the detailed descriptions in Section 2.2 of the Final SEIS.¹³⁵ In preparing the Final SEIS, DOE reviewed and examined a wealth of information and, where appropriate and in compliance with NEPA acknowledged information that is incomplete or unavailable¹³⁶ the relevance of that

¹³² Final SEIS at 2-20, 2-24, and 4.19-5 to 4.19-6.

¹³³ Rehearing Request at 26.

¹³⁴ Final SEIS at 1-7. We note that AGDC argues that the impacts of upstream development have been addressed by FERC and DOE in the 2020 EIS.

¹³⁵ AGDC Answer at 11.

¹³⁶ Final SEIS at 2-23. “These activities [under Scenarios 2 and 3 for upstream development] are based on North Slope development activities identified in the 2020 EIS (see Section 2.2.1) and the potential scenarios presented in the North Slope Production Study (see Section 2.2.2). These scenarios do not represent specific actions that have been planned or proposed by the Applicant or others but are considered to represent a reasonable range of outcomes for the purpose of environmental impact analysis. Ultimately, the North Slope oil field operators, Alaska LNG, or other entities would select development and management options that best meet their operational requirements and economic criteria.”

information¹³⁷ and its approach to evaluating impacts.¹³⁸ DOE explained that the development activities considered are reasonable projections of what might occur and that, in the absence of specific planning or design information, DOE conducted qualitative analysis where possible.¹³⁹ Further, in satisfying the requirement to provide a summary of credible scientific evidence, we note, as an example, that Appendix B of the Final SEIS includes three reports assessing energy and infrastructure requirements for Project-related natural gas production and carbon dioxide management.¹⁴⁰ Each of these studies includes a list of references summarizing the existing credible scientific evidence on which the report relies to inform its analysis.

With respect to Intervenor's claims of inadequate disclosure and analysis of the climate forcing effect of black carbon emissions from the Project, Intervenor admits that DOE recognizes "that black carbon is harmful to human health and the climate," but that DOE "does not analyze the magnitude of its impacts in relation to this Project."¹⁴¹ In response to comments on the Draft

¹³⁷ *Id.* at 4.21-1. "This section discloses areas where information was unavailable or incomplete during preparation of the Final SEIS and discusses its relevance to the range of potential environmental impacts. As stated throughout this document, the additional development activities under Scenarios 2 and 3 provide a basis for the evaluation of representative potential environment effects that could occur on the North Slope due to the proposed Project and are a focus of this Final SEIS."

¹³⁸ *Id.* "To account for uncertainties caused by incomplete and unavailable information, DOE developed bounding conditions and assumptions based on the most current and available data and project plans in evaluating the range of potential impacts that could occur under the proposed project, consistent with the regulations cited above [40 C.F.R. § 102.21(c)]."

¹³⁹ *Id.* at 2-23. Where possible, [the SEIS] provides quantitative information based on the best existing and available information for the purpose of identifying the range of environmental effects that may occur under the Proposed Action. In the absence of specific planning or design information, DOE has also conducted qualitative analysis where appropriate to describe the types and range of impacts anticipated.

¹⁴⁰ Together, these three reports comprise the "Upstream Study" of oil and natural gas resources and CO₂ utilization and storage potential at the Prudhoe Bay Unit (PBU) and surrounding areas. The first report, "Establishing the Sources of Natural Gas Supply for the Alaska LNG Project," evaluates the capacity of natural gas supply from the PBU and the Point Thomson Unit (PTU) on the North Slope of Alaska to support the Alaska LNG Project for a 30-year period. The second report, "Impacts of PBU Major Gas Sales on Oil Production and CO₂ Storage Potential," examines the impacts of the Alaska LNG Project on oil production at the PBU and discusses options for utilizing the byproduct CO₂ stream from the Alaska LNG GTP for CO₂ enhanced oil recovery (EOR) operations on the North Slope. The third report, "Storing Byproduct CO₂ from the Alaska LNG Gas Treatment Plant at the Prudhoe Bay Unit," identifies and assesses the viability of storing byproduct CO₂ from the GTP in a deep saline reservoir at the PBU. See Final SEIS, Appendix B.

¹⁴¹ Rehearing Request at 28.

SEIS, DOE included information on black carbon to the extent available. The Final SEIS states that “[b]lack carbon emissions were not separately quantified due to the lack of available emission factors specific to black carbon”¹⁴²; however, black carbon emissions “are included within the PM_{2.5} emissions estimates presented in the SEIS.”¹⁴³ DOE’s evaluation and analysis of this potential emissions impact in the Final SEIS is reasonable, especially given the “considerable uncertainty” within the scientific community on the climate forcing impacts specific to black carbon.¹⁴⁴

Likewise, AGDC recounted how black carbon was analyzed and accounted for in FERC’s EIS, which DOE adopted, in a manner fulfilling NEPA requirements, and that Intervenor make no new arguments not already addressed.¹⁴⁵ In sum, Intervenor’s concerns on the lack of detailed analysis are not new, were raised in response to FERC’s EIS and were rejected, and are equally unavailing in this instance.

D. The Final SEIS Does Not Make Unsupported Assertions About Byproduct CO₂ Injection

1. Intervenor’s Position

Intervenor allege that the Final SEIS “makes unsupported assertions about byproduct CO₂ injection” that “conceal and understate the potential for additional emissions resulting from byproduct CO₂.”¹⁴⁶ DOE analyzes two long-term sequestration methods—geologic sequestration (CO₂ injection with no production wells for secondary material recovery) and enhanced oil recovery (EOR) (CO₂ injection with production wells for oil recovery)—both of

¹⁴² Final SEIS at 4.15-6.

¹⁴³ *Id.*

¹⁴⁴ *Id.* at 4.19-5 (“[T]here is considerable uncertainty regarding the climate forcing effects of black carbon, and the IPCC and USEPA have not published global warming potential values for black carbon to allow these effects to be quantified.”).

¹⁴⁵ AGDC Answer at 15, 16.

¹⁴⁶ Rehearing Request at 29.

which result in the long-term storage of the injected CO₂, but Intervenor's allege that DOE overestimates the effectiveness of both of these remedies, since neither method permanently stores injected CO₂.¹⁴⁷ Intervenor's claim DOE's figures on the effectiveness of sequestration and EOR are "optimistic and unsupported."¹⁴⁸

In Intervenor's view, DOE's attempt to alleviate byproduct concerns by requiring regular certification of natural gas export to ensure no byproduct CO₂ is vented into the atmosphere (with minimal exceptions) does not address the concern.¹⁴⁹ Intervenor's argue that this approach is insufficient because it is unclear whether this requirement applies at all steps in the process, or merely at the beginning stages.¹⁵⁰ Intervenor's assert that if venting occurs at later stages in the process not subject to the certification requirement, *e.g.*, transport, injection, and long-term geologic storage of CO₂, then "the Project's climate impacts could be greater than DOE assumes."¹⁵¹

2. AGDC's Answer

According to AGDC, Intervenor's believe the prohibition on venting of byproduct CO₂ should apply not only during the treatment of feed gas, but also in later steps, including transportation, injection, and storage. Intervenor's claim that the prohibition was "unclear," but AGDC contends that "the venting of *byproduct* CO₂ clearly applies only to the gas treatment process of separating CO₂ from the feed gas stream."¹⁵² AGDC argues that "[a]n expansion of [the venting] condition to facilities downstream of the gas treatment plant . . . is unwarranted,

¹⁴⁷ *Id.*

¹⁴⁸ *Id.* at 30.

¹⁴⁹ *Id.* at 30-31.

¹⁵⁰ *Id.* at 31.

¹⁵¹ *Id.*

¹⁵² AGDC Answer at 13-14 (emphasis in original).

would duplicate and overlap existing regulatory requirements, and in some cases would be entirely infeasible.”¹⁵³

AGDC adds that other Federal and state government controls already address carbon capture procedures, and that “[a] no venting requirement applied beyond the activity of separating byproduct CO₂ from feed gas would impose burdensome requirements that greatly exceed conditions imposed on other projects.”¹⁵⁴ Finally, AGDC disputes Intervenor’s claim that the venting exception for “operational exigencies” is too vague.¹⁵⁵ AGDC states that DOE is capable of determining an appropriate exigency and emphasizes that, despite Intervenor’s warning that CO₂ could be vented while equipment was offline, both permitting restrictions and technical limitations would prevent that from happening.¹⁵⁶

3. DOE’s Analysis

Intervenor’s claim that the estimates in the Final SEIS of byproduct CO₂ that would be stored are flawed, understating and ignoring actual storage amounts, making it “impossible for the public to understand the true extent that either geologic sequestration or sequestration through EOR can mitigate the Project’s emissions.”¹⁵⁷ In fact, the Final SEIS and its underlying studies reflect an expert understanding of the difference in potential storage rates. This comment was raised and responded to by DOE in its response to comments, Appendix D.¹⁵⁸ Further, Intervenor’s criticize other technical aspects as to the effectiveness of sequestration and EOR.

¹⁵³ *Id.* at 14.

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *See id.* at 14-15.

¹⁵⁷ Rehearing Request at 29-30.

¹⁵⁸ “During geologic CO₂ sequestration, CO₂ is injected into underground formations where, given the quality of the reservoir seal, it is permanently stored. Rigorous verification of geologic seals is performed during the selection of the storage formation to ensure containment. During CO₂ EOR the produced CO₂ remains in a closed system from the production well, through the processing facility, and back to the injection well for reinjection. The LCA calculated a total of 0.08 percent of the injected CO₂ would be emitted during EOR operations (0.03 percent due to fugitive emissions during compression and 0.05 percent due to reservoir leakage.)” Final SEIS at D-20.

Intervenors allege that for the emission rate for EOR, DOE uses a default rate in the model without an adequate explanation of the basis for the rate; for assumptions about oil produced per kg of CO₂ injected, DOE uses an analysis that “appear[s]” more optimistic than other work by the same author; that some estimates of the amount of CO₂ that will return to the surface appear to “simply be a guess;” and that DOE presents inconsistent CO₂-EOR values in the tables for the Japan, South Korea, China and India analyses.¹⁵⁹ From these purported deficiencies in the DOE analyses Intervenors conclude that DOE “continues to rely on optimistic and unsupported figures regarding the effectiveness of sequestration and EOR.”¹⁶⁰ None of these examples, however, provide any overriding evidence of significant flaws in data or analyses that would cause DOE to reconsider the figures and estimates provided in the Final SEIS.¹⁶¹ Even if Intervenors were correct in some respect on these technical points (which DOE does not concede), overall it would not change the alternatives analysis for CO₂ storage, since a substantial quantity of the CO₂ would be stored. As the Final SEIS explains, “[t]he total volume of CO₂ that will be captured at the GTP over the 30-year project is 190 million metric tons. Including the optional 3 years of operation at the end of the project adds an additional 12 million metric tons for a total captured CO₂ volume of 202 million metric tons of CO₂ over the 33-year project.”¹⁶² A small decrease in this large volume would have only a marginal effect on the overall quantity of stored CO₂.

¹⁵⁹ Rehearing Request at 30.

¹⁶⁰ *Id.*

¹⁶¹ For instance, regarding the CO₂-EOR values in Appendix C to the Final SEIS, the Appendix C results are calculated on the basis of a megawatt-hour of electricity in the destination country. Because LNG transport uses LNG for fuel, different destinations will require different amounts of LNG to be produced to meet the same fuel demand per megawatt-hour in the destination country. When more LNG is produced for a longer transport distance, there is more CO₂ produced and thus differing amounts of oil produced. *See, e.g.*, Final SEIS, Appendix C, Exhibits C-1 through C-4 (reflecting differences in CO₂-EOR values), and sections 2.6 (p. 9) and 5 (p. 70) (explaining the effect of shipping distances in the LCA).

¹⁶² Final SEIS, Appendix D, at D-19.

Even where DOE has added a venting prohibition to the Alaska LNG Order to curtail byproduct CO₂ emissions, Intervenor argues that this action does not alleviate their concerns. Specifically, in response to Intervenor's comments on the Draft SEIS, DOE imposed the venting prohibition as a new ordering paragraph set forth in the Alaska LNG Order (as amended by Order No. 3643-C). Yet Intervenor argues that it is "unclear" whether the venting prohibition applies to later steps in the process, *e.g.*, "the transport, injection, and long-term geologic storage of CO₂," beyond separating the CO₂ from the methane and routing it to the pipeline.¹⁶³ They further argue that, "[i]f venting occurs at those later stages and is not subject to the certification requirement, the Project's climate impacts could be greater than DOE assumes."¹⁶⁴ We note, however, that Intervenor had stated in their comments on the Draft SEIS that "DOE could use this authority to provide, for example, that AGDC may only export [natural] gas if it ensures and demonstrates that *the byproduct CO₂ produced alongside this gas* was not vented."¹⁶⁵ In Order No. 3643-C, DOE explained the purpose of the venting condition by using similar language: the condition "prohibit[s] the venting into the atmosphere of CO₂ produced with natural gas and separated from it at the Alaska LNG Project."¹⁶⁶

Therefore, we believe that Order No. 3643-C, including the venting prohibition (now Ordering Paragraph Q of the Alaska LNG Order, as amended), provides sufficient direction for Alaska LNG as the authorization holder to comply with this mitigation measure. Consistent with AGDC's Answer that "the venting of *byproduct CO₂* clearly applies only to the gas treatment process of separating CO₂ from the feed gas stream,"¹⁶⁷ we clarify here that the venting

¹⁶³ Rehearing Request at 30-31.

¹⁶⁴ *Id.* at 31.

¹⁶⁵ Sierra Club, et al. Comments on Draft SEIS at 14-15 (emphasis added).

¹⁶⁶ *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 16; *see also id.* at 26 (explaining that the venting prohibition seeks to directly mitigate "the potential for venting of byproduct CO₂ into the atmosphere from the Alaska LNG Project").

¹⁶⁷ *See* AGDC Answer at 13-14 (emphasis in original).

prohibition applies at the proposed Gas Treatment Plant (or GTP) on the North Slope—specifically, to the natural gas process of separating CO₂ from the feed gas stream at the Gas Treatment Plant—and not to other phases of CO₂ management. As AGDC points out, DOE should allow the agencies with the authority and expertise over CO₂ emissions to regulate them in order to avoid inconsistent, overlapping, and infeasible requirements

Intervenors also express concern that the term “operational exigencies” used in the venting prohibition is “so vague that it is impossible to determine how broadly DOE will interpret the exception.”¹⁶⁸ They speculate that DOE could use this “exception [to] allow venting *for years* while sequestration or EOR [enhanced oil recovery] equipment is offline without requiring Project proponents to make necessary repairs.”¹⁶⁹

First, we believe that the plain meaning of the phrase “operational exigencies” is not vague simply because it allows DOE to determine, based on relevant facts, whether AGDC was “required” to vent CO₂ due to urgencies demanded by a particular operational situation.¹⁷⁰

Additionally, Intervenors fail to acknowledge the rest of the clause in the venting prohibition—“and in compliance with the FERC Order”¹⁷¹—meaning that any “emergency, maintenance, or operational exigencies” under the venting condition must remain within the operating conditions imposed on the Alaska LNG Project by FERC (including all air permits) and adopted by DOE in the Alaska LNG Order.¹⁷² DOE may, as necessary, consult with FERC in evaluating AGDC’s actions under this venting prohibition. Thus, contrary to Intervenors’ suggestion, the phrase “operational exigencies” does not create an open-ended exception that

¹⁶⁸ Rehearing Request at 31.

¹⁶⁹ *Id.* (emphasis added).

¹⁷⁰ *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 27 (Ordering Para. A).

¹⁷¹ *Id.*

¹⁷² See Alaska LNG Order at 42 (Ordering Paragraph H stating, in relevant part, that “Alaska LNG shall ensure compliance with all terms and conditions established by FERC in the final EIS, including the 165 environmental conditions adopted in the FERC Order issued on May 21, 2020.”); see also AGDC Answer at 15.

could be used to thwart the purpose of the venting prohibition.

Finally, as a technical matter, we refer to AGDC's explanation as to why the scenario that Intervenor describe—whereby the Alaska LNG Project could be permitted to vent CO₂ “for years”—is not possible as a technical matter. According to AGDC:

GTP [Gas Treatment Plant] plant design and operating configuration is based on separating the CO₂ stream for compression into an outlet pipeline that will be tied into a CO₂ pipeline for transmission to the injection location. The CO₂ offtake pipeline and injection facilities must be in place for the GTP to operate as designed.¹⁷³

Thus, as AGDC states, the venting of CO₂ “can only occur during plant startup, emergency shut-down/blow down upset events or major maintenance/repair,” and thus “CO₂ cannot be vented for years while sequestration or enhanced oil recovery ... equipment is offline.”¹⁷⁴ Intervenor have provided no evidence that would call into question AGDC's statements about the project design.

E. The Final SEIS Adequately Addresses Potential Seismic Impacts from Proposed Carbon Storage on the North Slope and CO₂ Pipeline Safety Concerns

1. Intervenor's Position

Intervenor argue that the Final SEIS inadequately addresses the risks posed by seismic activity along the North Slope.¹⁷⁵ Intervenor assert that DOE treats seismic impacts from carbon storage in a cursory manner, dismissing evidence “showing correlation between CO₂ injection for EOR and seismic activity or earthquakes.”¹⁷⁶ Specifically, Intervenor claim that DOE dismisses as irrelevant studies Intervenor cited in the Draft SEIS and ignores studies Intervenor pointed to focusing on induced seismicity in Japan and around the globe.¹⁷⁷ Intervenor also point to recent studies from the North Slope showing it as a seismically active

¹⁷³ AGDC Answer at 15.

¹⁷⁴ *Id.*

¹⁷⁵ Rehearing Request at 31.

¹⁷⁶ *Id.* at 31-32.

¹⁷⁷ *Id.*

region. As a consequence, Intervenor argue that the Final SEIS does not support the conclusion that the potential to induce seismic activity in the Kuparuk River Unit [KRU] is low.¹⁷⁸

Intervenors further allege DOE inadequately addressed safety issues that may emerge from carbon dioxide pipelines and potential leaks.¹⁷⁹ Noting these safety issues, Intervenor criticize DOE for its conclusion that the “risk of a pipeline rupture is low” and because of the remoteness of the area, there is also a “low likelihood that humans or animals would be affected if a leak occurs” to be an optimistic assessment of risk that is not adequately supported or analyzed by a “hard look” in the Final SEIS.¹⁸⁰ Further, Intervenor criticize DOE for relying on the regulations and the judgment of other agencies, especially PHMSA, to prevent and respond to emergencies related to CO₂ pipelines.¹⁸¹

2. AGDC’s Answer

In response to Intervenor’s claims that DOE failed adequately to consider seismic impacts from carbon storage, AGDC counters that these potential impacts are related to the construction and operation of Alaska LNG Project subject to FERC jurisdiction and were identified and analyzed in FERC’s EIS. Thus, AGDC argues that DOE’s consideration of the impacts was adequate because it adopted the EIS.¹⁸²

3. DOE’s Analysis

As Intervenor point out, DOE has addressed their concerns regarding seismic activity in responding to comments on the Draft SEIS; DOE’s response thoroughly evaluated these impacts in the Final SEIS as described in Section 4.1.4.3 and specifically the seismic activity in the

¹⁷⁸ *Id.*

¹⁷⁹ *Id.* at 33.

¹⁸⁰ *Id.* at 33, 34.

¹⁸¹ Rehearing Request at 34, 35.

¹⁸² AGDC Answer at 15.

KRU¹⁸³ as well as related analysis in the Final SEIS.¹⁸⁴ Likewise, AGDC states that the seismic impacts have been analyzed in the FERC EIS, and that “[b]y adopting FERC’s EIS, DOE adequately considered these impacts.”¹⁸⁵ DOE analyzed seismic activity and CO₂ injection for EOR in the KRU, finding that “while CO₂ EOR injection does have the potential for indirect adverse impact on geological resources and inducing seismic activity, the potential is low in the KRU.” Intervenor deem this conclusion inadequate because it allegedly dismisses Intervenor studies in regions outside Alaska, and in other countries. But these claims overlook the fact that DOE reviewed relevant studies and data specific to the KRU, and reached a considered conclusion as explained in the Final SEIS.¹⁸⁶ Intervenor further cite to recent general studies from the North Slope that it is a seismically active region,¹⁸⁷ purportedly indicating new data and results that DOE should consider, although without presenting any evidence that these studies would significantly change DOE’s analyses or conclusions. As such, DOE reaffirms that it has taken the necessary “hard look” at potential seismic impacts and finds its explanation to be reasonable and appropriate in the Final SEIS.

Intervenor also claim that the Final SEIS does not adequately address the safety issues related to carbon dioxide pipelines and potential leaks, while acknowledging DOE’s consideration of the CO₂ pipeline leak in Satartia, Mississippi.¹⁸⁸ DOE addressed CO₂ pipeline

¹⁸³ Final SEIS, Appendix D, at 29 (“As previously discussed in Section 3.1.4.1, the KRU and the North Slope are characterized as generally inactive in terms of seismicity, with the latest major seismic activity having occurred on August 12, 2018, on previously unknown active right-lateral faults. While a higher seismic risk could be linked to a higher risk of reservoir leakage from an adversely impacted seal capacity, it is not always indicative of high leakage risk....Additionally, data from a 2010 ADNRR report depicts the North Slope as having good CO₂ reservoir and seal potential (Shellenbaum and Clough 2010). Therefore, while CO₂ EOR injection does have the potential for indirect adverse impact on geological resources and inducing seismic activity, the potential is low in the KRU.”).

¹⁸⁴ See, e.g., Final SEIS at 3.1-6, 4.1-2, and 4.1-7

¹⁸⁵ AGDC Answer at 15.

¹⁸⁶ Final SEIS, p. 4.1-5.

¹⁸⁷ Rehearing Request at 32.

¹⁸⁸ *Id.* at 33.

safety in response to comments on the draft SEIS in which it explained DOE’s use of the “sliding scale” approach to NEPA analysis—to discuss potential impacts in proportion to their significance.¹⁸⁹ Factors to consider include the probability of the accident, severity of the consequences, and degree of uncertainty.¹⁹⁰ Issues with clearly small impacts usually require less depth and breadth of analysis than those with impacts of greater significance. Based on analyses in section 4.18.4 of the Final SEIS, DOE concluded a release is unlikely.¹⁹¹ Further applying sliding scale principles, the Final SEIS explains that the potential accident consequences from CO₂ pipelines depend on the location of a release in proximity to receptors, the size of the release and atmospheric conditions,¹⁹² concluding that “DOE considers the potential for adverse consequences from CO₂ exposure from an accidental release to humans or wildlife to be remote.”¹⁹³ We find this explanation, taken together with other relevant analysis in the Final SEIS (*e.g.*, Final SEIS at 3.18-2 and 3.18-5), contains adequate discussion supporting the conclusion that additional study is not required, in compliance with 40 C.F.R. § 1502.2(b).¹⁹⁴

F. The Final SEIS Adequately Addresses Methane Leakage

1. Intervenor’s Position

Intervenors argue that DOE’s analysis of methane leakage in the Final SEIS is inadequate, claiming that DOE relied on EPA data that underestimates methane emissions.

¹⁸⁹ Final SEIS, Appendix D, at D-39.

¹⁹⁰ *Id.*

¹⁹¹ *Id.*

¹⁹² *Id.* “Given the remote nature of the potential CO₂ pipelines and injection wells in the North Slope region, there are limited resident human populations or wildlife to be exposed from an accidental release. Oil and gas workers, who are protected by Occupational Safety and Health Administration and other health and safety requirements, would be the most susceptible to experience exposure from an accidental release of gas from a CO₂ or other hazardous liquid pipeline in the area...DOE expects that the operators, workers, and emergency response personnel in the area would be trained and aware of hazards present from hazardous liquid pipelines and other industrial facilities in the area.”

¹⁹³ *Id.*

¹⁹⁴ 40 C.F.R. § 1502.2(b) (stating that “Environmental impact statements shall discuss impacts in proportion to their significance”).

Further, Intervenor assert that DOE did not account for methane emissions from all life cycle stages and relied on an unrealistic sensitivity analysis to conclude that different methane emission rates have only a modest impact on overall Project GHG emissions.¹⁹⁵

Intervenor assert that DOE did not respond to Intervenor's critique that actual methane emissions could likely be much more than the 5 percent higher number DOE analyzed.¹⁹⁶

Intervenor argue that "just because DOE intended the 5 percent range to be arbitrary does not mean it is a valid basis for DOE to draw conclusions about the real-world impact of variations in the methane leak rate, which might be much greater than 5 percent."¹⁹⁷ Intervenor maintain that DOE did not provide adequate information or clear explanations in the Final SEIS concerning DOE's basis for its methane leakage analysis.¹⁹⁸

2. AGDC's Answer

AGDC states that the "arguments regarding DOE's analysis of methane leakage consist primarily of quibbling over the level of precision included in the study."¹⁹⁹ According to AGDC, Intervenor claim that the SEIS does not identify emissions factors along the supply chain or clearly account for methane emissions, and also uses a problematic +/- 5% sensitivity analysis to examine how changes in methane emissions affect overall lifecycle emissions.²⁰⁰ AGDC contends that the "Intervenor provide no basis for challenging DOE's conclusion that the impact that methane leaks have on total lifecycle emissions is modest," and that NEPA does not require the level of precision they demand.²⁰¹

¹⁹⁵ Rehearing Request at 35-37.

¹⁹⁶ *Id.*

¹⁹⁷ *Id.* at 37.

¹⁹⁸ *Id.* at 35.

¹⁹⁹ AGDC Answer at 16.

²⁰⁰ *Id.*

²⁰¹ *Id.*

3. DOE's Analysis

Intervenors state that DOE relied on EPA's Greenhouse Gas Reporting Program (GHGRP) data to analyze methane leakage and that this data undercounts methane emissions.²⁰² AGDC characterizes Intervenors' claims as "quibbling" over the level of precision in DOE studies.²⁰³ While Intervenors are correct that DOE relied on EPA's GHGRP data to model GHG emissions, including methane, from the LNG supply chain, as DOE explained in the response to comments on the draft SEIS, DOE made updates to the EPA GHGRP data "to ensure that emissions from significant sources [were] not underestimated."²⁰⁴ DOE used new data to close potential gaps between GHGRP data and other measurement campaigns and estimates that point to higher methane emissions rates. For example, DOE used "updated throughput-normalized methane emissions data from current literature" with respect to the liquids unloading process to ensure accurate modeling of GHG emissions.²⁰⁵ While Intervenors point to alternative studies as a basis for GHG estimates from oil and gas supply chain emissions, they do not demonstrate why DOE's estimates based on the EPA study as updated in the Final SEIS are unreasonable. The bulk of top-down studies have found a discrepancy with GHGRP-reported emissions in the lower-48 states (onshore and offshore). DOE is not aware of any such studies showing similar discrepancies for Alaska that would allow a more reasonable assessment of the range of emissions possible there. Additionally, Intervenors argue that because the Final SEIS does not discuss the potential for fugitive methane emissions at each stage in the life cycle analysis, the analysis does not clearly account for methane emissions from the full life cycle. As DOE stated in response to comments on the draft SEIS, DOE's modeling included GHG emissions across the

²⁰² Rehearing Request at 35.

²⁰³ AGDC Answer at 16.

²⁰⁴ Final SEIS, CRD, at D-26.

²⁰⁵ *Id.*

full LNG supply chain, encompassing emissions “from production, processing, transport, liquefaction, export, and overseas delivery, and end-use (combustion).”²⁰⁶ The Final SEIS provides a comparison of the methane emission rates between Scenario 1 (Lower 48 production, used as global proxy) and Scenarios 2 and 3 (North Slope LNG production).²⁰⁷ While methane leakage was not an explicit parameter in models used to develop the GHG emissions estimates from the North Slope or from the Lower 48 LNG production used as a proxy for global LNG, the Final SEIS modeled and thus accounted for the emissions of methane from various processes in the upstream natural gas life cycle.

Section 3 of the Final SEIS LCA Study describes in detail the modeling approach DOE used to analyze the life cycle GHG emissions from the Project and adequately discloses the basis for DOE’s estimates, including for methane emissions. As DOE stated in response to comments on the Draft SEIS, the uncertainty analysis in the LCA Study encompassed uncertainty in methane emissions.²⁰⁸ As stated previously, DOE’s model and results did not explicitly include methane leakage as a parameter; it modeled the emissions of methane from various processes in the upstream natural gas life cycle. As DOE states in the Final SEIS, and the Intervenor acknowledge, the purpose of the methane sensitivity analysis was to “understand the effect of a change in methane emissions on the results,” and the choice of a 5 percent plus-or-minus change as a reference figure was “not intended to imply a known range of direct methane emissions uncertainty within the study.”²⁰⁹ AGDC also makes the point that Intervenor provide no basis to challenge this 5 percent figure, or deem it to be arbitrary.²¹⁰ AGDC argues, and we agree, that

²⁰⁶ *Id.*, CRD, at D-48.

²⁰⁷ *See id.*, Appendix C, Exhibit 4-18.

²⁰⁸ *Id.*, CRD, at D-24.

²⁰⁹ *Id.*, Appendix C, at 68.

²¹⁰ AGDC Answer at 16.

Intervenors present no basis to contest “DOE’s conclusion that the impact of methane leaks on total lifecycle emissions is modest.”²¹¹

DOE added language to the Final SEIS to explicitly describe that the methane analysis showed results and sensitivities on the relative emissions of methane as normalized by the amount of natural gas used (*e.g.*, in power plants). The basis for DOE’s selection of the 5 percent range was to test the model’s sensitivity to life cycle methane emissions to determine if the study conclusions would change if total life cycle methane emissions were greater than modeled. The choice of 5 percent is not based on known methane emissions performance on the North Slope. The results presented in the Final SEIS justified DOE’s conclusion that an increase of 5 percent of total methane emissions had a marginal effect on the total carbon dioxide equivalent emissions. The Final SEIS also explained that the base plus-or-minus 5 percent values could be extrapolated to higher or lower values, all of which provided meaningful information to the public about the potential effects of a change in methane emissions on the results of the LCA. Based on the current state of data and methods on methane emissions relevant to the LCA, the conclusions of the sensitivity analysis are supported by the study.

As discussed above, the NEPA implementing regulations recognize that there may be “incomplete or unavailable information” on effects the agency is evaluating in an EIS and specifies required components of the EIS agencies must include if the means of obtaining the incomplete or unavailable information are not known.²¹² The regulations further specify that agencies may “make use of any reliable data sources” in developing an EIS and requires agencies to “identify any methodologies used” and to “make explicit reference to the scientific

²¹¹ *Id.*

²¹² 40 C.F.R. § 1502.21(c).

and other sources relied upon for conclusions” contained in the document.²¹³ DOE’s analysis of methane leakage in the Final SEIS complies with these requirements. DOE explained in the Final SEIS the uncertainties associated with GHG emissions, including methane emissions, and identified the scientific sources DOE relied upon for its conclusions. Intervenor has not demonstrated that DOE’s reliance on these sources and methodology were unreasonable or inadequate under NEPA or that DOE failed to disclose this information in the SEIS.

G. The Final SEIS Adequately Addresses Overseas Impacts

1. Intervenor’s Position

Finally, Intervenor takes issue with DOE’s analysis in the Final SEIS of overseas impacts. Intervenor argues that DOE’s analysis of overseas impacts in the evaluation of lifecycle emissions was inadequate in that it relied on unfounded assumptions about the identity of destination countries, and about whether those countries would use LNG with or without the Project.²¹⁴ Specifically, Intervenor contends that the Final SEIS does not support the assumption that only Japan, South Korea, China and India would receive exports from the Project, citing data that in 2022, the U.S. exported LNG to 38 countries.²¹⁵ Intervenor takes issue with the assumption in No Action Alternative 1 that if these countries did not import Alaskan LNG, they would import natural gas from the lower-48 states or a location sufficiently similar that the lower-48 states are a reasonable proxy and claim this unsupported assumption skewed DOE’s decision-making.²¹⁶

Intervenor also argues that the Final SEIS uses unrealistic scenarios relevant to the end use of carbon capture and sequestration (CCS), citing among other things DOE’s “wildly

²¹³ *Id.* § 1502.23.

²¹⁴ Rehearing Request at 37.

²¹⁵ *Id.* at 37-38.

²¹⁶ *Id.*

optimistic views about deployment of CCS in destination countries.”²¹⁷ Intervenor claim that a proper accounting of emissions would account for full life cycle emissions, which they claim DOE does not appear to have done. Moreover, Intervenor argue it is unrealistic to assume full deployment of CCS in the near term, even though the Final SEIS bases its low-end estimates for lifecycle GHCs from all three scenarios on this assumption, thereby underestimating the Project’s emissions impacts.²¹⁸

2. AGDC’s Answer

AGDC states that “it does not appear that Intervenor contest the life-cycle analysis performed by DOE in its FSEIS, including its analysis of global emissions,” probably because of court decisions that “have affirmed DOE’s rationale that the more detailed analyses and quantifications Intervenor constantly demand are not required by NEPA because such global impacts are not reasonably foreseeable.”²¹⁹

3. DOE’s Analysis

Intervenor argue that the Final SEIS “does not support the assumption that only Japan, South Korea, China, and India would receive exports from the Project.”²²⁰ Contrary to Intervenor’s claim, DOE does not assert in the Final SEIS that exports from the Project would go exclusively to the four identified countries. Rather, as Intervenor acknowledge, DOE selected those countries as a representation of “geographically proximate delivery destinations from Alaska.”²²¹ DOE addressed in its response to comments on the Draft EIS the inherent challenges and uncertainty in predicting future global LNG markets, noting that “[t]he complexity in

²¹⁷ *Id.* at 39.

²¹⁸ *Id.* at 40, 41.

²¹⁹ AGDC Answer at 18 (citing, as an example, *Sierra Club v. DOE*, 867 F.3d 189 (D.C. Cir. 2017)).

²²⁰ *Id.*

²²¹ Final SEIS at 4.19-2.

sourcing is country-specific and depends on numerous factors, including temporally-dynamic to short- and long-term contract pricing, environmental performance, country policies, delivery security and reliability, international relationships, and other drivers.”²²² For additional clarity, DOE added text to the Final SEIS to more clearly communicate the basis for selecting Japan, South Korea, China, and India as representative of potential importers and acknowledged in the Final SEIS that these countries were selected on the basis of assessments about which countries were, at the point the LCA was initiated, “known or expected to be significant LNG importers.”²²³ While there are other countries that could potentially be importers of LNG from the Project, given the uncertainties and the information available at the time of the LCA Study, DOE’s decision to use Japan, South Korea, China, and India as representative destinations was reasonable.

Intervenors also claim that the Final SEIS does not support DOE’s assumption that if the four identified countries did not import LNG from the Project those countries would import from another location in the lower-48 states, or from a similar location. DOE explained its rationale for using the Lower 48 as a proxy for the assumption, in No Action Alternative 1, that LNG demand from foreign markets would remain and that an alternative source would fulfill that demand.²²⁴ DOE clarified in the Final SEIS that the purpose of this proxy was to create a “benchmark” that enhances data quality and consistency within the modeling and explained further that the approach avoided “using far more aggregated data from other regions that would lead to additional uncertainty.”²²⁵ DOE further clarified its approach in its response to public comments, stating that the choice of using the Lower 48 “as a representative environmental

²²² *Id.*, CRD, at D-23.

²²³ *Id.* at 4.19-2.

²²⁴ *Id.*, CRD, at D-22.

²²⁵ *Id.* at 4.19-4.

profile... was not intended to imply the Lower 48 as a direct substitution for Alaska LNG production.”²²⁶ DOE did not claim in the Final SEIS that the Lower 48 is a perfect stand-in for the assumptions concerning future global demand for LNG, but that DOE used the Lower 48 as a reasonable proxy in light of the fact that changes in the global LNG market directly induced solely by the existence of the Project “cannot be definitively determined.”²²⁷

Finally, Intervenor argues that DOE’s life cycle estimates using CCS are unreliable and claim that DOE’s conclusion concerning the extent to which using CCS would cut total life cycle emissions is based on these unreliable estimates.²²⁸ Intervenor points to alternative estimates of carbon capture rates and alternative methods of accounting for emissions from carbon capture but do not demonstrate why DOE’s methodology is unreasonable. DOE acknowledged in the Final SEIS that there is uncertainty in the CCS estimates. Rather than making specific CCS estimates, which are uncertain at this time, the LCA study states that it “brackets a range of GHG effects both with and without carbon capture and sequestration.”²²⁹ The Final SEIS recognized that because commercial deployment of CCS technology is new, “end use results without CCS are more likely to reflect existing electricity generating plants today, and the results with CCS are likely to be more representative of future electricity generation, with lower GHG emissions.”²³⁰ DOE further acknowledged that many factors would drive the future net global changes in GHG emissions associated with the Project, including “the adoption of policies and measures to limit GHG emissions and the penetration of low-carbon energy sources.”²³¹ DOE fully acknowledged the difficulties in estimating the effects of CCS on the action alternative

²²⁶ *Id.*, CRD, at D-22.

²²⁷ *Id.*

²²⁸ Rehearing Request at 37-42.

²²⁹ Final SEIS, Appendix C, at 2.

²³⁰ *Id.* at 4.19-6.

²³¹ *Id.*

scenarios and disclosed its basis for conclusions concerning the potential impacts of CCS. While the Intervenor may not agree with DOE's estimates or conclusions, they have not demonstrated that DOE's basis for these estimates and conclusions are unreasonable.

As discussed above, DOE's analysis of overseas impacts in the Final SEIS complies with NEPA requirements in addressing incomplete or unavailable information. The methodologies, studies, and other sources DOE identified in the Final SEIS discussion of life cycle GHG emissions impacts in Chapter 4 and in the LCA Study support DOE's analysis of overseas impacts. The document includes multiple references to the various challenges and uncertainties inherent in estimating overall life cycle emissions, discloses the manner in which DOE addressed these challenges and uncertainties, and provides a reasonable scientific basis for DOE's analysis of overseas impacts.

H. DOE Is Not Required to Determine Market Need for the Approved Exports or to Assess Project Viability Under NGA Section 3(a)

1. Intervenor's Position

Turning to Intervenor's NGA arguments, Intervenor first assert that DOE's public interest determination in Order No. 3643-C "is unjustifiably one-sided" and arbitrary because "DOE's analysis of the benefits of the Project ignores the lack of any real market need for additional LNG exports."²³²

Specifically, Intervenor argue that "the record fails to establish that there will be any real need for the additional exports" from the Alaska LNG Project because (in their view) DOE has already authorized "a far greater volume of exports" than is needed to cover international LNG demand through the year 2050, as projected by the U.S. Energy Information Administration

²³² Rehearing Request at 3.

(EIA).²³³ They further assert that even EIA’s projections may be high due to a number of factors that may reduce the long-term global demand for U.S. LNG—including that: (i) European countries are accelerating their deployment of renewables and low-emitting technologies in light of the Russian invasion of Ukraine; (ii) importing countries such as Japan, South Korea, India, and China have announced plans to increase their renewable energy usage; and (iii) the International Energy Agency’s (IEA) “Net Zero by 2050” recommendations are likely to be implemented.²³⁴ Thus, Intervenor claim that LNG demand is likely to decline, both globally and in the countries likely to receive exports from the Alaska LNG Project.²³⁵ They further contend that Alaska LNG’s analysis submitted with the Application in 2014 (which they refer to as AGDC’s analysis)—a report prepared by NERA Economic Consulting evaluating the socio-economic impact of the Alaska LNG Project—“does not dispute” these alleged future market conditions.²³⁶

Next, Intervenor acknowledge DOE’s position stated in Order No. 3643-C that DOE “does not need to find there is a market need for a project’s exports to approve them, and that it will let the market, rather than DOE, decide which projects move forward.”²³⁷ Intervenor maintain that this position is an “inappropriate and unlawful abdication” of DOE’s responsibilities under the NGA.²³⁸ Pointing to a policy statement recently issued by DOE concerning extensions to the deadline to commence exports of LNG in non-FTA

²³³ *Id.* at 4 (citing EIA’s *Annual Energy Outlook 2023*); *see also id.* at 6.

²³⁴ *Id.*

²³⁵ *Id.* at 6-7.

²³⁶ *Id.* Intervenor refer to “AGDC’s” analysis, but AGDC was not the applicant in this proceeding. The Application and report cited by Intervenor were submitted by Alaska LNG. *See id.* at 7 n.21.

²³⁷ *Id.* at 7 (citing *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 22 n.106).

²³⁸ Rehearing Request at 7.

authorizations,²³⁹ Intervenor claim that it “makes no sense for DOE to acknowledge . . . that it has a role to play in preventing an overly-large export [authorization] overhang” through the Policy Statement, but for DOE to deny that “it has any role to play in refusing to grant [authorizations to] unviable projects.”²⁴⁰

Finally, Intervenor assert that DOE’s alleged refusal to engage in a “meaningful inquiry” on the market need for a project’s exports presents avoidable and potentially unnecessary environmental and community risks.²⁴¹ According to Intervenor, DOE’s approval of a non-FTA application sends a “powerful signal that may induce construction of supporting infrastructure” that could harm the environment (such as tree felling), even if the associated LNG terminal ultimately is never built or is built but underused.²⁴² Additionally, Intervenor state that FERC “consistently argues that need and market demand are demonstrated by DOE’s [LNG export] approvals.”²⁴³ In this regard, Intervenor assert that DOE has “culpably failed” to make a “[market] need determination sufficient to inform FERC’s decisionmaking on whether construction of LNG infrastructure would be in the public interest.”²⁴⁴ In sum, Intervenor argue that “DOE’s approval of exports from an unneeded source”—*e.g.*, the proposed Alaska LNG Project—will spur construction of infrastructure impacting the surrounding community and environment, amounting to “a dereliction of DOE’s duty” under NGA section 3(a), “including the duty to achieve environmental justice as part of its mission.”²⁴⁵

²³⁹ U.S. Dep’t of Energy, Policy Statement on Export Commencement Deadlines in Authorizations To Export Natural Gas to Non-Free Trade Agreement Countries, 88 Fed. Reg. 25,272 (Apr. 26, 2023) [hereinafter Policy Statement]. The Policy Statement was issued on April 21, 2023, but was not published in the *Federal Register* until April 26, 2023.

²⁴⁰ Rehearing Request at 8.

²⁴¹ *Id.*

²⁴² *Id.*

²⁴³ *Id.* at 9.

²⁴⁴ *Id.*

²⁴⁵ *Id.* at 9-10.

2. AGDC's Answer

Addressing Intervenor's assertion that there is no demonstrated market need for the Project's LNG, AGDC argues that "[n]either AGDC nor DOE need respond to this speculative argument because a showing of need in the form of global demand is not required for DOE to conclude that LNG exports are not inconsistent with the public interest."²⁴⁶ AGDC points to "DOE's longstanding policy" that LNG export approval does not require a showing of market need "because the market will decide which projects move forward," and states that the Intervenor gave "no basis for DOE to reverse [that] policy."²⁴⁷

AGDC also challenges Intervenor's arguments about environmental justice considerations. First, AGDC states that Intervenor pointed to environmental justice concerns related to the construction and operation of the Project's facilities—not the export of the LNG—and those concerns "were fully analyzed in FERC's EIS."²⁴⁸ Second, according to AGDC, Intervenor exaggerated DOE's statement about impacts on environmental justice communities.²⁴⁹ AGDC stresses that, contrary to Intervenor's claims, DOE only "noted the *potential* for such [environmental justice] impacts," adding that appropriate mitigation measures would help to reduce these potential impacts.²⁵⁰ Finally, AGDC represents that certain local Alaska communities that Intervenor defended as needing protection actually supported the Project, as indicated in comments filed on the draft SEIS.²⁵¹

²⁴⁶ AGDC Answer at 17.

²⁴⁷ *Id.* at 17-18.

²⁴⁸ *Id.* at 11.

²⁴⁹ *Id.* at 12.

²⁵⁰ *Id.* at 12 (emphasis AGDC's).

²⁵¹ *See id.* at 12-13.

3. DOE's Analysis

In granting Cook Inletkeeper's and Center for Biological Diversity's late-filed motion to intervene in Order No. 3643-C, DOE made clear that "neither [those parties] 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," due to the limitation set forth in 10 C.F.R. § 590.303(h).²⁵² DOE's regulations require that an application for rehearing "state concisely the alleged errors in the final opinion and order ... [and] set forth specifically the ground or grounds upon which the application [for rehearing] is based." 10 C.F.R. § 590.501(b). Accordingly, new issues raised by Intervenors in their Rehearing Request are beyond the scope of this rehearing proceeding.²⁵³ Yet, Intervenors' principal argument under NGA section 3(a) raises both new and unrelated issues, in disregard of DOE's regulations and admonition in Order No. 3643-C.

First, Intervenors' detailed arguments concerning whether there is a "demonstrated global market need for the Project's exports"—and how that demand might change over time—are beyond the scope of this rehearing proceeding.²⁵⁴ Contrary to Intervenors' suggestion, DOE did not attempt to quantify global demand for the approved exports in either the Alaska LNG Order (Order No. 3643-A) or Order No. 3643-C, nor did DOE reanalyze the economic and international security benefits already evaluated in the Alaska LNG Order. The stated purpose of

²⁵² *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 20; *see also id.* at 21 (granting "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)," which requires a late intervenor to accept the record of the proceeding as it was developed prior to the intervention); *see also supra* § II.D.

²⁵³ We note that FERC, under its similar regulation governing rehearing, "routinely excludes issues raised for the first time in requests for rehearing," as this is "disruptive to the administrative process." *Enron Power Mktg., Inc., et al.*, 122 FERC ¶ 61,015 at P 64 & n.98 (2008) (internal quotation and citation omitted); *see also, e.g., PJM Interconnection, L.L.C.*, 126 FERC ¶ 61,030 at P 15 & n.10 (2009) (rejecting arguments because "[a] request for rehearing is not the appropriate venue to bring up ... issues in the first instance"); *Midwest Indep. Transmission Sys. Operator, Inc.*, 117 FERC ¶ 61,113 at P 188 (2006) (denying rehearing of new issues that had not been raised previously, and thus were "beyond the proper scope of rehearing").

²⁵⁴ Rehearing Order at 4 (Heading A).

Order No. 3643-C was for DOE to evaluate the environmental impacts presented in the Final SEIS to determine if they were “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.”²⁵⁵ This focus was consistent with Intervenor Sierra Club’s initial request for rehearing (which DOE granted in part)—in which Sierra Club sought rehearing of the Alaska LNG Order on NEPA grounds, and did not ask DOE to evaluate the market need for Alaska LNG’s exports or otherwise raise this argument.²⁵⁶

Indeed, in both the Final SEIS and Order No. 3643-C, DOE stated that it “*takes no position on whether there will be a market demand* for the LNG produced by the Alaska LNG Project.”²⁵⁷ Rather, DOE explained that “the Final SEIS examined the impacts that could occur if market demand exists for Alaska LNG’s approved exports.”²⁵⁸ The Final SEIS further observed 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. These statements in the Final SEIS and Order No. 3643-C do not provide an opportunity for Intervenor to challenge Order Nos. 3643-A and 3643-C on the basis of wholly new arguments—such as whether the Alaska LNG Order is lawful based on new EIA data on global LNG demand, DOE’s approved volumes of LNG exports to non-FTA countries, and Intervenor’s speculation about what “remaining capacity” will (or will not) come online.²⁵⁹

²⁵⁵ *Id.* at 6.

²⁵⁶ See Sierra Club, Request for Rehearing, Docket No. 14-96-LNG (Sept. 21, 2020).

²⁵⁷ *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 22 (citing Final SEIS at S-7) (emphasis added).

²⁵⁸ *Id.*

²⁵⁹ Rehearing Request at 6.

On the merits, Intervenor (and AGDC) correctly note that DOE has never evaluated as part of its NGA section 3(a) analysis whether a particular LNG export application—including Alaska LNG’s Application—is guaranteed to have “real market need” for any or all of the requested export volumes.²⁶⁰ This, however, is not a “failure” of the record supporting Order No. 3643-C or an “abdication” of DOE’s role under the NGA, as Intervenor contend.²⁶¹ Rather, a “market need” inquiry is not required by the NGA or DOE’s regulations (and Intervenor point to no legal authorities suggesting otherwise),²⁶² is not compelled by DOE’s NGA section 3(a) precedent,²⁶³ and is at odds with principles established in DOE’s 1984 Policy Guidelines that DOE continues to apply.²⁶⁴

Similarly, Intervenor provide no legal support for their argument—made for the first time here—that DOE should refuse to grant export approvals under NGA section 3(a) involving “unviable projects.”²⁶⁵ Intervenor cite DOE’s recent Policy Statement to argue that DOE “should be evaluating applications at the outset” to determine if there is market need for the project’s export capacity.²⁶⁶ But this Policy Statement pertains to applications for extensions to commencement deadlines for exports that DOE has already approved. Intervenor are attempting to conflate DOE’s approval of export authorizations under NGA section 3(a) with the very different factual circumstances and policy objectives identified in the Policy Statement.²⁶⁷

²⁶⁰ *Id.* at 3; *see* AGDC Answer at 17-18.

²⁶¹ *See* Rehearing Request at 4.

²⁶² *Id.* at 7.

²⁶³ *See also* AGDC Answer at 17-18 & n.32 (citing DOE authorities).

²⁶⁴ U.S. Dep’t of Energy, New Policy Guidelines and Delegations Order Relating to Regulation of Imported Natural Gas, 49 Fed. Reg. 6684 (Feb. 22, 1984), *discussed in* Alaska LNG Order at 10-11. One of the stated goals of the 1984 Policy Guidelines—which continues to guide DOE’s decision-making under NGA section 3(a)—is to minimize federal control and involvement in energy markets. *See* Alaska LNG Order at 10-11 (citing 49 Fed. Reg. at 6685).

²⁶⁵ Rehearing Request at 8.

²⁶⁶ *Id.*

²⁶⁷ DOE expressly states in the Policy Statement that “DOE will consider any new export application under NGA section 3(a) without prejudice,” should authorization holders fail to meet the specified criteria. *See* Policy

Even if the Policy Statement were relevant here, it is designed to follow—not predict—the market need, the very approach emphasized in the 1984 Policy Guidelines. Specifically, when a lack of commercial progress on an export project demonstrates actual weak market need DOE will act on that evidence. The Policy Statement is therefore consistent with the 1984 Policy Guidelines and DOE’s longstanding approach, and in any event is not relevant to the matter at issue in this proceeding.

Intervenors also point to the NERA report submitted as an appendix to Alaska LNG’s Application in 2014 to bolster its argument that there is an “over-saturated global market for LNG exports.”²⁶⁸ It defies explanation how a report issued nine years ago—when the U.S. and global LNG market were far less developed—could provide factual support for Intervenors’ arguments about global market demand for U.S. LNG today. More importantly, Intervenor Sierra Club has not argued that DOE must demonstrate global market demand in its prior filings (including in its request for rehearing of the Alaska LNG Order), and Intervenors are not permitted to raise these issues for the first time now.

Likewise, Intervenors’ arguments concerning the practical impact of DOE’s non-FTA authorizations—including whether such approvals cause harm by “induc[ing] construction of supporting infrastructure” and whether DOE has an obligation to “correct” FERC in its assessment of the market impact of DOE’s export approvals—are beyond the scope of this rehearing proceeding. As the D.C. Circuit has repeatedly explained—most recently in upholding FERC’s authorization of the Alaska LNG Project—DOE and FERC have reasonably limited

Statement, 88 Fed. Reg. at 25,278. Additionally, Alaska LNG is not ripe for action under the Policy Statement at this time.

²⁶⁸ Rehearing Request at 6-7 & n.21.

their public interest evaluations to distinct spheres consistent with their roles under the NGA.²⁶⁹ In that decision, the D.C. Circuit rejected Center for Biological Diversity’s and Sierra Club’s “attempt[] to avoid these clear jurisdictional lines” between FERC and DOE.²⁷⁰ Here, too, Intervenor’s argument that DOE has a legal obligation to “make a [LNG project] need determination sufficient to inform FERC’s decisionmaking on whether construction of LNG infrastructure would be in the public interest”²⁷¹ reflects a failure to recognize FERC’s and DOE’s distinct roles under the NGA. In addition, Intervenor Sierra Club has not raised these arguments before now. But even if these issues were properly at issue, they are overgeneralized, speculative, and lack necessary legal or factual support. As just one example, DOE does not make legal decisions under NGA section 3(a) based on “powerful signals” or “cautionary tales,” as the Intervenor urge.²⁷²

Finally, to the extent global demand for U.S. LNG declines as importing countries transition to renewables, as Intervenor argue, this should result in fewer environmental impacts. In evaluating different energy source substitutions as part of the LCA, for example, the Final SEIS observed that “renewable power, low GHG hydrogen or ammonia can lead to further reductions in GHG emissions.”²⁷³

In sum, Intervenor may disagree with DOE’s policy considerations under NGA section 3(a), but they have failed to show that DOE’s evaluation in Order No. 3643-C is unreasonable or arbitrary.

²⁶⁹ See *CBD*, 67 F.4th at 1185 (FERC reasonably analyzed the relevant no action alternatives in environmental analysis of the Alaska LNG project, which included two no action alternatives: “something like the Project” being built and “nothing like the Project” being built.).

²⁷⁰ *Id.*

²⁷¹ Rehearing Request at 9.

²⁷² *Id.* at 8.

²⁷³ See final EIS, Appendix C (LCA), at 10.

I. Intervenors' Remaining NGA Arguments Are Beyond the Scope of This Proceeding Or Are Reframings of Criticisms of the Final SEIS Already Addressed Above

1. Intervenors' Position

In their remaining NGA arguments, Intervenors present several NEPA-based arguments to assert that DOE's public interest analysis in Order No. 3643-C, which reaffirmed the Alaska LNG Order, was "highly skewed" towards economic benefits rather than climate impacts and is therefore biased, arbitrary and capricious, and an abdication of DOE's legal responsibility under the NGA.²⁷⁴ Intervenors assert that:

- DOE ignored the uncertainty about the proposed Project's fate in evaluating its economic and national security benefits but relied on this same uncertainty to discount the Project's climate harms;²⁷⁵
- DOE failed to appropriately weigh the environmental and community harms that would occur if the Project were constructed;²⁷⁶
- DOE failed to adequately justify its inability to produce a meaningful estimate of the climate impacts;²⁷⁷ and
- Even if the Project's natural gas exports would substitute for foreign fossil fuels, DOE still needed to account for current global energy trends that increasingly emphasize renewable energy, as well as the Project's upstream GHG emissions.²⁷⁸

2. AGDC's Answer

AGDC contends that "DOE's environmental analysis, compromised of the adopted FERC EIS, as supplemented by DOE's [Final SEIS], fully complies with NEPA," and thus "no changes to DOE's export authorization or its byproduct CO₂ venting certification requirement are warranted."²⁷⁹ AGDC further argues that Intervenors misstate the standard of review for

²⁷⁴ Rehearing Request at 10; *see also id.* at 3-4.

²⁷⁵ *Id.* at 10.

²⁷⁶ *Id.* at 12.

²⁷⁷ *Id.*

²⁷⁸ *Id.*

²⁷⁹ AGDC Answer at 21.

NGA section 3(a). AGDC asserts that the standard is not whether the exports are consistent with the public interest. Rather, according to AGDC, the statute provides that DOE “shall authorize exports” to non-FTA nations “*unless* ... it finds that the proposed exportation ... will *not* be consistent with the public interest”—thus creating a presumption favoring export authorization.²⁸⁰

Next, AGDC asserts that Intervenor fail to recognize the statutory and procedural posture of this proceeding. In particular, AGDC maintains that DOE conducted the two additional environmental studies that comprise the Final SEIS to supplement the record created by the 2020 EIS prepared by FERC for the Alaska LNG Project.²⁸¹ AGDC states that these “additional studies and analyses performed by DOE in the [Final SEIS] buttress the NEPA analysis performed by FERC and adopted by DOE,” and “do not provide any justification for challenging DOE’s determination that [the] export authorization is not inconsistent with the public interest.”²⁸²

3. DOE’s Analysis

In arguing that DOE failed to satisfy NGA section 3(a) in Order No. 3463-C, Intervenor reformulate many of same criticisms of DOE’s technical analysis in the Final SEIS addressed above. In the preceding sections, DOE refutes Intervenor’s arguments that the Final SEIS fails to comply with NEPA, and neither their arguments nor DOE’s responses are materially different when evaluated under the NGA’s public interest framework. Further, as set forth below, Intervenor fail to demonstrate that DOE erred or acted arbitrarily in concluding in Order No.

²⁸⁰ *Id.* at 3 (quoting 15 U.S.C. § 717b(a)) (emphasis added by AGDC).

²⁸¹ *See id.* at 4.

²⁸² *Id.* Insofar as Intervenor’s NGA claims are based on DOE’s alleged failure to comply with NEPA, AGDC asserts (as noted above) that the bulk of these arguments are barred by the doctrines of collateral estoppel and *res judicata*. *See supra* note 76.

3643-C 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).”²⁸³

As AGDC notes, and as the D.C. Circuit recently affirmed, “the NGA ‘sets out a general presumption favoring ... authorization.’”²⁸⁴ We have observed that this standard governs DOE’s ultimate judgment whether to grant or deny an export application, but it does not affect DOE’s obligations under NEPA. As discussed herein, NEPA places an independent obligation on DOE to present information relating to the environmental impacts that may result from its decisions and to take a “hard look” at those impacts. And, as DOE’s substantial record demonstrates, DOE took the “hard look” at the potential impacts identified in the Final SEIS in Order No. 3643-C. Therefore, DOE properly evaluated whether the environmental impacts *presented in the Final SEIS* were sufficient to alter DOE’s existing 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—and concluded that they were not.²⁸⁵

DOE explained that, “[b]ecause of the uncertainties in the global energy markets and the extent to which the Project may substitute for other emitting power generation,” DOE determined that it could not “draw a definitive conclusion about the magnitude of climate impacts associated with Alaska LNG’s exports.”²⁸⁶ DOE, however, thoroughly analyzed the potential environmental impacts and exercised its judgment in reaching this conclusion; it did not “weight” these climate impacts with any less consideration in terms of the broader public interest analysis. Indeed, Intervenor fail to show how DOE’s analysis of climate impacts were

²⁸³ *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 26.

²⁸⁴ *CBD*, 67 F.4th at 1188 (citing *W. Va. Pub. Servs. Comm’n v. Dep’t of Energy*, 681 F.2d 847, 856 (D.C. Cir. 1982)).

²⁸⁵ See *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 26.

²⁸⁶ *Id.* at 22.

undervalued or “skewed” where DOE’s judgment was based on an extensive SEIS resulting in an amended order with a new ordering paragraph that directly addresses climate impacts raised by Intervenor as part of the SEIS proceeding.²⁸⁷

Further, in evaluating Sierra Club’s arguments opposing the Alaska LNG Order, DOE explicitly recognized the “compelling public benefits” associated with Alaska LNG’s exports,²⁸⁸ which DOE had summarized and evaluated in granting the Alaska LNG Order in 2020.²⁸⁹ Sierra Club (then the only intervenor among the current Intervenor) did not challenge these benefits in its initial rehearing request.²⁹⁰ These benefits include:

1. Benefits to U.S. energy security by improving energy security for many U.S. allies and trading partners;
2. 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;
3. Improvements in consumer welfare in Alaska;
4. Lower natural gas prices in Alaska;
5. Overall “significant” economic benefits for the United States as a whole, as represented by gross domestic product; and
6. Benefits to free trade.²⁹¹

Intervenor’s principal argument is that these public benefits are “at least as uncertain” as the potential climate impacts associated with Alaska LNG’s exports, yet “DOE principally relies on economic benefits.”²⁹² But this argument arises from the same error described above—

²⁸⁷ See *supra* § IV.D (discussing the venting condition).

²⁸⁸ *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 25.

²⁸⁹ See *Alaska LNG Order* at 30-31.

²⁹⁰ For this reason, we do not address many of Intervenor’s arguments that belatedly take issue with the economic and other public benefits associated with Alaska LNG’s exports, such as Intervenor’s claim that “DOE has not offered any argument or explanation as to how shifting exports from the Gulf Coast to Alaska, without any net increase in U.S. LNG exports, would benefit the national economy.” Rehearing Request at 11.

²⁹¹ See *Alaska LNG Order* at 17-19, 28-31; *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 25.

²⁹² Rehearing Request at 11.

Intervenors’ assertion that the public interest analysis must consider whether “the [Alaska LNG] Project will ever actually export LNG.”²⁹³ Specifically, Intervenors contend that “[t]here is nothing in the record that demonstrates that any economic benefit will result from a project that is never actualized.”²⁹⁴ But as we have said, DOE’s evaluation of the economic benefits under NGA section 3(a) is not tied to a short-term or long-term assessment of whether a particular project (in this case, the Alaska LNG Project) will, in fact, become “actualized” or operational.

DOE acknowledges that there are uncertainties associated with Alaska LNG’s exports on both sides of the public interest “scale”—neither the potential economic benefits nor the climate impacts of Alaska LNG’s exports (nor all the other public interest factors considered by DOE) can be demonstrated with precision today over the 30-year export term²⁹⁵—but DOE did not tip the scale towards economic benefits, as Intervenors claim. Rather, DOE determined that the SEIS does not provide evidence sufficient for DOE to conclude that the Alaska LNG exports will be inconsistent with the public interest.²⁹⁶ These are complex and dynamic issues, including both potentially competing and complementary factors, that DOE has carefully weighed and reasonably evaluated in Order No. 3643-C on the basis of the additional environmental information provided in the Final SEIS.

Similarly, Intervenors claim that DOE cannot weigh energy security benefits against the potential climate impacts associated with Alaska LNG’s exports under NGA section 3(a) unless DOE shows that exports from the Alaska LNG Project both will occur *and* will increase the overall level of U.S. exports (as opposed to substituting for other U.S. exports that would not

²⁹³ *Id.*

²⁹⁴ *Id.*

²⁹⁵ As we have observed, the Alaska LNG Project is unique due to its size, scope, costs, and project development timeline—which are all more significant than any LNG project in the lower-48 states. As one indicator of the scale involved, the cost of the Alaska LNG Project was originally estimated to be between \$45 and \$65 billion, but more recently has been estimated to be approximately \$38 billion. *See* Rehearing Order at 16.

²⁹⁶ *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 6, 26.

cause a net increase).²⁹⁷ DOE has long taken the position that U.S. LNG exports in general will improve energy security for many U.S. allies and trading partners. DOE has emphasized the importance of diverse sources of natural gas supply (noting that exports from the Alaska LNG facility would uniquely be located on the west coast of the United States), in addition to increased volumes of U.S. LNG in the global LNG marketplace. Both contribute to the strategic benefits of U.S. LNG. DOE pointed to this reasoning in upholding the Alaska LNG Order in Order No. 3643-C.²⁹⁸ But DOE has never directly tied exports from an individual LNG project to incremental “improvements” in energy security across the world, nor would that be feasible.

Finally, Intervenor argues that DOE has a duty under Executive Order 14096 to advance environmental justice, but that DOE “summarily conclude[d]” that potentially high adverse impacts to affected Native communities “do not matter.”²⁹⁹ This is not accurate. DOE applies this Executive Order in the context of its legal obligations under NGA section 3(a), and thus DOE took into account the information about affected Native communities set forth in the Final SEIS. Specifically, as AGDC points out, the Final SEIS found that “any potential adverse subsistence impacts from the Project may be reduced with appropriate mitigation measures,”³⁰⁰ and DOE concluded that the communities affected by cumulative impacts from regional projects likely would use other areas within the region for subsistence activities.³⁰¹ DOE considered these environmental justice issues in Order No. 3643-C as part of its public interest determination.

²⁹⁷ Rehearing Request at 11.

²⁹⁸ *Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 25.

²⁹⁹ Rehearing Request at 9, 13.

³⁰⁰ Final SEIS at 4.14-6.

³⁰¹ *See Alaska LNG Project LLC*, DOE/FECM Order No. 3643-C, at 15.

V. CONCLUSION

Upon review of Intervenor's arguments, DOE affirms the conclusions set forth in the Supplemental Alaska LNG Order (DOE/FECM Order No. 3643-C) and the Amended ROD issued on April 13, 2023, which, in turn, affirmed and supplemented the Alaska LNG Order (Order No. 3643-A) and ROD issued on August 20, 2020.

VI. ORDER

Pursuant to sections 3 and 19 of the Natural Gas Act, and for the reasons set forth above and in DOE/FECM Order No. 3643-C, it is ordered that:

A. Alaska Gasline Development Corporation's Motion for Leave to Answer and Answer to Intervenor's Request for Rehearing is granted.

B. The Request for Rehearing filed by Intervenor Center for Biological Diversity, Cook Inletkeeper, and Sierra Club is denied.

Issued in Washington, D.C., on June 14, 2023.



Brad Crabtree
Assistant Secretary
Office of Fossil Energy and Carbon Management