

CO23 – Friends of Animals

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October 3, 2019

Via eFiling

Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE, Room 1A
Washington, DC 20426

~~EXPLOITERS~~
FRIENDS
of ANIMALS

RE: Draft Environmental Impact Statement for the Alaska Liquefied Natural Gas Project (CP17-178-000).

Dear Ms. Bose:

Friends of Animals (FoA)¹ submits these comments on the Federal Energy Regulatory Commission's (FERC) Draft Environmental Impact Statement (hereinafter, "Draft EIS") for Alaska Gas Development Corporation's (AGDC) proposed Alaska Liquefied Natural Gas (LNG) Project. The LNG Project will largely take place in the Cook Inlet, Alaska. Cook Inlet is home to many species, including the highly endangered Cook Inlet beluga whale.

FoA is concerned about the myriad of ways the proposed LNG Project will detrimentally impact the Alaskan ecosystem and the wildlife that call it home. In particular, FoA is concerned about the potentially devastating impact to beluga whales, and FERC's failure to fully consider the impact of this Project on beluga whales when considered with other past, present, and reasonably foreseeable future activities.

Despite being listed under the Endangered Species Act, the Cook Inlet beluga whale population continues to decline, and the federal government continues to approve projects that are further pushing the species to extinction. The National Marine Fisheries Service (NMFS) has previously recognized that it should prepare a Programmatic Environmental Impact Statement (PEIS) to analyze the cumulative impacts of issuing Incidental Take Authorizations (ITA) pursuant to the Marine Mammal Protection Act (MMPA) for takes of Cook Inlet belugas. However, neither NMFS, nor any other agency, has completed this analysis.

Because further activities in the Cook Inlet could push the beluga whales to extinction, FERC should not approve the Alaska LNG Project, or any other project impacting Cook Inlet

¹ Friends of Animals is a non-profit international advocacy organization incorporated in the state of New York since 1957. Friends of Animals has nearly 200,000 members worldwide. Friends of Animals and its members seek to free animals from cruelty and exploitation around the world, and to promote a respectful view of nonhuman, free-living, and domestic animals. Friends of Animals has previously commented on numerous federal actions regarding takes of Cook Inlet beluga whales.

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Comment noted.

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Cumulative impacts on Cook Inlet beluga whales are discussed in section 7.4.2.7 of the Biological Assessment, which is provided as appendix O of the final EIS. Our analysis found that increased noise from seismic testing, pile driving, and vessel traffic from other projects and the Project could have a significant impact on Cook Inlet beluga whales if these activities occur concurrently and repeatedly over multiple seasons.

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beluga whales, until the government has completed an analysis of the cumulative impacts of all past, present, and reasonably foreseeable future projects in the Cook Inlet.

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Background

The Cook Inlet is a long, narrow body of water that extends from the Anchorage, Alaska area to the Gulf of Alaska, northeast of the Aleutian Islands. *Beluga Whale*, NOAA Fisheries, <https://www.fisheries.noaa.gov/species/beluga-whale> (last visited July 17, 2019). Cook Inlet is known for its continued industrial development, unpredictable tides and weather, and growing human presence. *Id.* The area is also known for being home to the genetically distinct, small population of Cook Inlet beluga whales, whose numbers have fallen greatly over the years and continue to decrease. *Id.* Cook Inlet is also home to harbor seals, harbor porpoises, and killer whales, amongst other marine life. *Id.*

On April 11, 2011, NMFS designated critical habitat for the Cook Inlet beluga whale. Endangered and Threatened Species: Designation of Critical Habitat for Cook Inlet beluga Whale; Final Rule, 76 Fed. Reg. 20180 (April 11, 2011). The critical habitat consists of two areas containing a total of 3,013 square miles of marine habitat. *Id.* at 20205. Area 1 is comprised of 738 square miles of Cook Inlet northeast of a line from the mouth of Threemile Creek to Point Possession. *Id.* Area 1 has the highest concentration of beluga whales in the spring through the fall and is an important area for foraging, calving, molting, and escape from predators. *Id.* Area 2 is comprised of 2,275 square miles south of Area 1, including nearshore areas along the west side of the Inlet and Kachemak Bay on the east side of the lower inlet. *Id.* Area 2 has less concentration of beluga whales in the spring and summer, but they are known to use it during the fall and winter. *Id.* Beluga whales use Area 2 for feeding and as a transient area. *Id.*

The Cook Inlet beluga whale population has suffered great losses over the past few decades. The Cook Inlet beluga whale population was originally estimated at 1,300 whales in 1979. Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Alaska Liquefied Natural Gas (LNG) Project in Cook Inlet, 84 Fed. Reg. 30991, 30999 (June 28, 2019). Subsistence hunting resulted in a population decline of 47% between 1994 and 1998 alone. *See* Lowry et al., *Delphinapterus leucas Cook Inlet subpopulation*, The IUCN Red List of Threatened Species 3 (2019). Shortly after, NMFS began highly regulating subsistence hunting; as a result, no belugas have been taken due to subsistence hunting since 2005. Recovery Plan at II-48. National Marine Fisheries Service, *Recovery Plan for the Beluga Whale* at II-48 (2016) (hereinafter, “Recovery Plan”). Despite NMFS’s efforts, the beluga population has failed to recover and continues to decline, indicating that other factors are impacting its ability to survive and thrive in the area. Lowry et al. at 3. In 2016, International Union for Conservation of Nature (IUCN) estimated “the size of the mature population in 2016 to be 231 Belugas . . . with an 82% probability that there are fewer than 250 reproductive adults.” *Id.* at 3-4 (internal citations omitted). The most recent abundance survey by NMFS estimates there are 328 belugas left in the

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inlet, notably fewer than the 340 estimated in 2014. *Cook Inlet Beluga Whale*, Marine Mammal Commission, <https://www.mmc.gov/priority-topics/species-of-concern/cook-inlet-beluga-whale/> (last visited July 17, 2019).

Subsistence hunting is cited as the primary cause of the Cook Inlet beluga population decline in previous decades, but NMFS has yet to pinpoint the exact cause of the belugas' present and continued population decline. Recovery Plan at xii, xiv. However, recent research indicates that the cause of the population decline is low birth rates. Lowry et al. at 3. The low birth rates are likely due to the massive amounts of noise, movement, and other disturbances generated by the rapid and vast development of Cook Inlet. *Id.*; *see also* Recovery Plan at III-9. IUCN reports up to a 71% probability that, if present conditions persist, the population cannot withstand any take and will decline further in the future. Lowry et al. at 4. Furthermore, threats to Cook Inlet beluga whales are exacerbated by the whales' already small population size, which makes them more susceptible to depletion or extinction from "random demographic, environmental, and genetic factors." Lowry et al. at 5. For example, a major oil spill in the Cook Inlet has the potential to push depleted populations of belugas to extinction, particularly considering their tendency to congregate in groups. *Id.*

Although there is a general lack of research on beluga whales, recent studies show that belugas primarily reside in the upper parts of the Inlet during the summer months, then shift further south in the fall, winter, and spring. Lammers et al., *Passive acoustic monitoring of Cook Inlet beluga whales (Delphinapterus leucas)*, 143 J. Acoust. Soc. Am. 2497, 2503 (Sept. 2013). Thus, beluga whales may be found throughout the Inlet at any time of year. Recovery Plan at II-8. Some researchers detected the most belugas in the Upper Cook Inlet in the summer, and in the mid-Cook Inlet in fall, winter, and spring; the furthest south the researchers detected them was at Kenai River. *Id.* Beluga River had the most consistent presence of belugas throughout the year. *Id.* Researchers determined that the Beluga River and the Susitna Delta are the belugas' core summertime home range, whereas in the winter, the belugas spend a lot of time near Trading Bay. *Id.*

Discussion

I. FERC failed to take a hard look at the significant negative impacts of the LNG Project on the Cook Inlet beluga whales.

In the Draft EIS, FERC failed to take a hard look at the significant negative impacts the Alaska LNG Project will have on the Cook Inlet beluga whales. The Draft EIS generally concludes that the Alaska LNG Project will likely adversely affect the Cook Inlet beluga whale and its critical habitat, but FERC fails to recognize how significant the impacts will be. Draft EIS, Vol. 1 at ES-7. FERC fails to consider important data about the impacts of the LNG Project. Moreover, the limited analysis that FERC does conduct underestimates the impact of the LNG Project on beluga whales. There are also significant gaps of information about the impacts. Thus, FERC's conclusions are not supported by scientific data.

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Take estimates would be provided by the FWS and/or NMFS in the Biological Opinion(s) issued for the Project. Operational impacts on Cook Inlet beluga whale habitats are discussed in sections 7.4.2.1 and 7.4.2.6 of the Biological Assessment, which is provided as appendix O of the final EIS. An analysis of the risk of strikes, as well as an estimate of the number of strikes on Cook Inlet beluga whales, is provided in section 7.4.2.3 of the Biological Assessment. Impacts on Cook Inlet beluga whales from Project vessels and aircraft are discussed in sections 7.4.2.1 and 7.4.2.2 of the Biological Assessment.

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A. Total Take

The EIS fails to mention any tangible number of Cook Inlet beluga whale takes that would result due to approval of the LNG Project. FERC conducted a biological assessment in June 2019. In that assessment, FERC identified threats to Cook Inlet beluga whales which include “strandings, predation by killer whales, human-induced disturbances including noise and ship strikes, pollutants, climate change, and physical habitat modifications from development.” App. O, Biological Assessment at O-109. FERC predicted that “Cook Inlet beluga whales are most likely to be encountered by vessel traffic in Cook Inlet, and during construction and operational activities of the Mainline Facilities and Liquefaction Facilities.” *Id.* at O-100.

Ultimately, FERC concluded that the LNG Project may affect the Cook Inlet beluga whales themselves because “construction and operational activities would occur in occupied Cook Inlet beluga whale habitats; the Project would increase the risk of vessel strikes on Cook Inlet beluga whales; and there is potential for disturbance from Project-related vessel and aircraft through occupied habitat.” *Id.* at O-109. FERC also concluded that the LNG Project will likely adversely affect the Cook Inlet beluga whales because “the Project would result in underwater noise that reached Level A and Level B harassment of Cook Inlet beluga whales; the Project would permanently affect Cook Inlet beluga whale habitat; and the Project would likely result in vessel strikes.” *Id.*

FERC also concluded that the project will affect the belugas’ critical habitat. FERC ultimately concluded that the LNG Project may affect the Cook Inlet beluga whale critical habitat because “permanent facilities would be placed in, and near, critical habitat; and the Project would cause temporary disturbances to critical habitat.” *Id.* at O-110. FERC also concluded that the LNG Project will likely adversely affect the beluga’s critical habitat because “permanent loss of critical habitat would occur; and Project activities in Cook Inlet and anadromous streams could negatively affect beluga whales and their prey.” *Id.*

However, nothing in the EIS or Biological Assessment considered to what extent operational activities occurring in the Cook Inlet will impact beluga whale habitats, how much the LNG Project would increase the risk of vessel strikes, what potential disturbances may occur from Project-related vessels and aircrafts, and how likely it is that the potential disturbance may occur. The EIS and Biological Assessment do not even mention the total number of takes of beluga whales that may result from the LNG Project. Computing an estimated tangible number of takes is extremely important because only 328 Cook Inlet beluga whales exist, and the population is declining. FERC cannot take a hard look at the environmental impacts of the entirety of the project without some measurable factor to analyze the project’s actual impact on the vulnerable whale population.

The only insight into the tangible numbers of take is NMFS’s proposed rule to grant AGDC’s request for a letter of authorization (LOA). Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Alaska Liquefied Natural Gas

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(LNG) Project in Cook Inlet, 84 Fed. Reg. 30991, 31007 (June 28, 2019) (hereinafter, “LOA”). In the LOA, NMFS proposes to authorize AGDC to take twenty whales per year for the first five years of the LNG Project, totaling 100 whales. *Id.* As discussed in detail below, the LOA underestimates the number of takes. FERC failed to consider any tangible numbers of takes in the EIS and listed many likely negative impacts, but never fully analyzed what those impacts mean for the Cook Inlet beluga whale population.

Even if the number of takes that NMFS proposes was accurate—which it is not—that amount of take (20 belugas per year) will still likely cause the Cook Inlet beluga whale to become extinct because the population is so fragile. The Marine Mammal Commission 2018 Stock Assessment states that “even one take every 2 years may still impede recovery.” Marine Mammal Commission, *BELUGA WHALE (Delphinapterus leucas): Cook Inlet Stock* at 112 (2018). Since scientists cannot pinpoint exactly why the beluga whale population is declining, it will likely continue to decline. Taking 6.41% of the population each year will surely lead the population to extinction. Further, even though the predicted effects of the LNG Project described in the Draft EIS and LOA will already be devastating to the declining Cook Inlet beluga whale population, the government underestimated these effects, and the actual impacts will likely be much worse.

B. Noise.

The EIS and the LOA fail to adequately consider the extent of level A and B harassment the proposed project will cause and underestimates the amount of take. The thresholds used to determine the number of animals exposed to harassing levels of noise did not rely on the best available science and failed to consider echosounders, side scan sonar, commercial vessels, and geophysical surveys as a source of take. It also failed to adequately consider the impacts of dredging and other activities.

Noise pollution and hearing damage are one of the threats of highest concern to belugas and “[e]xposure to high intensity sound for a sufficient duration may result in auditory effects such as noise-induced threshold shift (TS)—an increase in the auditory threshold.” LOA, 84 Fed. Reg. at 31001. An animal may experience a temporary threshold shift (TTS) if the TS eventually returns to zero, but an animal can also experience a permanent threshold shift (PTS) from the exposure to high intensity sound. *Id.*

In the LOA request, NMFS states that the threshold level for PTS for mid-frequency cetaceans for Impulsive sources (impact pile driving) is a peak sound pressure of 230 dB and a cumulative sound exposure level of 185 dB. LOA, 84 Fed. Reg. at 31004. NMFS found the threshold level for PTS for Non-Impulsive sources (vibrating pile driving) is a cumulative sound exposure level of 198 dB. *Id.* NMFS also states that the threshold for behavioral impacts for Impulsive sources is 160 dB and 120 dB for Non-Impulsive sources. *Id.* Impulsive sounds have “physical characteristics making them more injurious (e.g., high peak sound pressures and rapid rise times) than non-impulsive sound sources.” National Marine Fisheries Service, *2018 Revision to: Technical Guidance for Assessing the Effects of*

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The LOA is not a FERC document and is not addressed here. The Level A and B harassment thresholds for noise identified in the final EIS are based on the NMFS Technical Guidance. Section 4.6.3.2 of the final EIS provides a noise analysis for echosounders, side scan sonar, commercial vessels, geophysical surveys, and dredging. Section 4.6.3.2 of the final EIS and sections 6.6.2 and 7.4.2.2 of the Biological Assessment, which is provided as appendix O of the final EIS, discuss the masking of sounds from anthropogenic noises.

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Anthropogenic Sound on Marine Mammal Hearing (V.2.0) (2018) at 20. Notably, a recent study states that, “[a]t present, it is difficult to quantify variability in TTS onset among marine mammals given how little data exist on TTS onset for multiple individual subjects from multiple species within each hearing group to sound exposures at the same frequency.” See Southall et al., *Marine Mammal Noise Exposure Criteria: Updated Scientific Recommendations for Residual Hearing Effects*, 45 *Aquatic Mammals* 156 (2019). Thus, the proposed take number listed in the LoA fails to accurately analyze the impacts that noise pollution from the proposed project will have on the beluga whales. Additionally, NMFS’s Recovery Plan acknowledges the need for additional information on the effects of chronic noise exposure as well as on the adverse behavioral effects of anthropogenic noise. Recovery Plan at II-28.

Moreover, NFMS has acknowledged that anthropogenic noise poses a high risk of interfering with the beluga’s recovery. Recovery Plan at III-13. Because of conditions that make the Cook Inlet “naturally noisy, complex, and dynamic,” there is a greater “potential for negative effects when anthropogenic sources of noise are introduced into [the Cook Inlet] beluga habitat.” *Id.* at III-12-13. One study found that “coastal development, oil and gas exploration and extraction, commercial shipping, recreational boating, and military activities” are all threats to the Cook Inlet beluga whales. See Lammers et al., at 2497. Vessel traffic, industrial or construction activities, and aircraft all contribute to anthropogenic noise within the Cook Inlet. *Id.* at 2501. A recent study from 2018 analyzing anthropogenic noise in the Cook Inlet reaffirms that “anthropogenic noise carries a threat of high concern to the recovery of the Cook Inlet beluga population.” Manuel Castellote et al., *Anthropogenic Noise and the Endangered Cook Inlet Beluga Whale, Delphinapterus leucas: Acoustic Considerations for Management*, 80 *Marine Fisheries Review* 80 (2018). FERC mentions that noise will impact the Cook Inlet beluga whale but does not fully analyze the impacts of this noise. See, App. O, Biological Assessment at O-101-04.

For example, FERC does not consider that some anthropogenic activities can create noises of a similar frequency as a whale’s communication noises, and thus these anthropogenic noises can “mask,” or cover up, a whale’s natural sounds. *Id.* at 2497. Beluga whales detect acoustic signals in noise and “[a] primary feature of the auditory system in [belugas] is the ability to resolve a complex sound into its individual frequency components by a set of auditory filters, and the filter shape and size affect the loudness and detectability of complex sounds and broadband signals.” Recovery Plan at IX-28. Masking may leave a whale disoriented and unable to communicate with other whales, or incapable of detecting predators, prey, or nearby objects. Masking may also therefore affect the population growth of belugas by impeding a beluga’s ability to communicate and creating stress. Further, a study on the influence of background noise on beluga response released in 2018 found that “[a]daptation against a high-intensity sound background reduces the sensitivity so much that signals of any intensity are difficult to analyze. Thus, auditory adaptation to the certain sound background can facilitate or complicate analysis of the fine structure of

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the signal spectrum, depending on the ratio of signal and background intensities.” E. V. Sysueva et al., *Influence of the Background Noise on Recognition of Signals with a Complex Spectrum Structure in the Beluga Whale (Delphinapterus leucas)*, 481 Doklady Biological Sci. at 136-37 (2018). Another study states that “[t]he acoustic characteristics of most of the detected noise events in this study [on the Cook Inlet] have the potential to mask beluga hearing at certain frequencies and also their communication, and some exceed the current National Oceanic and Atmospheric Administration (NOAA) behavioral harassment thresholds on a daily basis.” Manuel Castellote et al. (2018), at 80. Although there are limited studies, the best available science indicates that noise is detrimental to belugas and will cause substantial takes. FERC did not take a hard look at the impacts of the noise on the Cook Inlet beluga whales.

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Further, FERC did not take a hard look at the behavioral impacts caused by noise. Studies have shown that exposure to noise leads to “displacement from critical feeding and breeding grounds” in a number of marine mammal species, including “the displacement of gray whales from breeding lagoons in response to industrial noise . . . or dredging and shipping.” Linda S. Weilgart, *A Brief Review of Known Effects of Noise on Marine Mammals*, 20(2) UCLA International Journal of Comparative Psychology 162 (2007) (internal citations omitted). Noise has been demonstrated to impact beluga whale behavior as well. In one study, beluga whales “appeared to actively avoid icebreakers at distances of 35-50 km, remaining away for 1-2 days.” *Id.* (internal citations omitted). Disruptions in feeding and breeding practices due to displacement will have dire consequences for the belugas, as NMFS cites low birth rates due to behavior and habitat modifications as the most probable reason for the decline of the species. Lowry et al. at 3.

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NMFS’s Recovery Plan also cites reduction in prey as a threat to the Cook Inlet beluga whales. Recovery Plan at III-5. Studies show that fish hear and react to sounds, use sounds to communicate, and avoid predators. *See* Ben Wilson and Lawrence Dill, *Pacific Herring Respond to Simulated Odontocete Echolocation Sounds*, 59 Canadian J. Fish. & Aquatic Sci. 542 (2002). AGDC’s proposed project includes dredging/trenching, disposal of dredged material, and facility installation. *Id.* at 31003. Each of these activities would likely cause the beluga’s prey to avoid the project area, thus further reducing the beluga whale’s source of food. FERC failed to adequately assess these impacts in the Draft EIS.

C. Vessel Strikes.

FERC also did not take a hard look at the amount of vessel strikes that would occur. The Alaska LNG Project will increase vessel traffic in Cook Inlet by up to 74 percent higher than existing levels. App. O, Biological Assessment at O-109. According to the estimated marine mammal vessel strikes, FERC’s data on beluga whale strikes does not include data on vessel strikes for pipelay activities for Mainline Pipeline construction in Cook Inlet. *Id.* at O-90, Table 7.2.2-1. In addition, FERC has failed to complete the data about the vessel trips, as

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Noise impacts on marine mammals are discussed in section 4.6.3.2 of the final EIS. Noise impacts on Cook Inlet beluga whales are discussed in section 7.4.2.2 of the Biological Assessment, which is provided as appendix O of the final EIS. Impacts on Cook Inlet beluga whale prey species are discussed in section 7.4.2.4 of the Biological Assessment.

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Pipelay vessels were not included in the vessel strike calculations because they would be moving slower than 10 knots (the speed at which vessel strikes are more likely to be lethal). The use of N/A in table L-2-1 of appendix L of the final EIS indicates that the vessel numbers provided are for LNG carriers. Calculations of vessel strikes for LNG carriers are based on the 30-year operational lifespan of the Project.

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much of the data includes a “not available” indicator. *See* App. L, Wildlife and Fish Noise Calculated Results and Estimated Number of Vessel Trips at L-12-19, Table L-2-1.

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Further, FERC did not properly analyze the increased likelihood of vessel strikes due to speed of the vessel. FERC has calculated many of the vessel speeds in the Cook Inlet to be higher than 10 knots and even as high as 26 knots. *Id.* NMFS warns that vessels that travel at 10 knots or more have a higher potential to strike large whales. *Id.* Although FERC does admit that there is a higher potential for vessel strikes for vessels traveling 10 or more knots, FERC only provides a “yes” or “no” answer for whether vessel strikes will likely occur and does consider the increased likelihood of vessel strikes occurring based on the speed of the vessel. *Id.* There is no rational basis for the estimated strike percentages that FERC provided. App. O, Biological Assessment at O-104.

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We calculated the chance of a vessel strike for all vessels traveling over 10 knots. Section 7.4.2.3 of the Biological Assessment, which is provided as appendix O of the final EIS, discusses how we calculated vessel strikes.

FERC also states that the ships traveling at speeds less than 10 knots do not have a potential for strike. App. L, Wildlife and Fish Noise Calculated Results and Estimated Number of Vessel Trips at L-12-19, Table L-2-1. This is not true. The potential of striking a beluga whale for ships traveling under 10 knots is reduced, but not completely eliminated. FERC's lack of basis for the vessel strike data and underestimated impacts demonstrates that FERC did not take a hard look at the vessel strike impacts.

D. Oil Spills.

FERC states that large oil spills would likely not occur because of conservation measures. App. O, Biological Assessment at O-91, O-105. FERC reasons that:

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In the marine environment, the potential for spills of fuel or oil would be limited to vessels used for construction or operation of the Project. Given the quantity of fuel and oil stored on these vessels, any spills that occur would not be catastrophic. Spill prevention and response is discussed in sections 4.3.3 and 4.6.3.2 of the final EIS and section 7.4.2.5 of the Biological Assessment, which is provided as appendix O of the final EIS.

Oil and fuel spills occurring over the winter would likely remain on the ice surface as long as the ice surface remained solid. Cleanup on frozen ice could be very effective if done immediately after the spill. Blowing snow could combine with the spilled oil, moving oil across large distances and potentially into open water areas. Spills occurring during fall freeze up would be trapped in freezing ice, later melting out in summer if the spill is not collected and cleaned up prior to melting. During spring thaw, spilled material would become trapped in melt pools between ice floes. Oil or fuel on the ice floes would travel with them as winds moved the ice. Material spilled during summer when no ice is present would travel with the currents. Oil and fuel spill response resources are limited in the Arctic, making a quick response that would minimize impacts unlikely.

Id. at O-87.

FERC underestimates the impacts of oil spills. The Recovery Plan cites catastrophic events such as oil spills as one of three “Threats of High Relative Concern” to the Cook Inlet belugas. Recovery Plan at III-5. AGDC's proposed activities increase the risk of an oil spill occurring in the Inlet. The Cook Inlet belugas are particularly at risk because of their small population size and their reduced summer range in the upper Inlet, which “makes them

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vulnerable to catastrophic events that have the potential to kill or injure a significant portion of the population.” *Id.* at III-6.

Since 2003, Alaska’s Spill Prevention and Response (SPAR) division has responded to 384 “spills that have the potential to significantly impact human health, public safety, or the environment.” *Spill Response Summaries*, Alaska Division of Spill Prevention and Response, <https://dec.alaska.gov/spar/ppr/spill-information/response/> (last visited July 15, 2019).

This statistic does not account for the numerous minor spills and accidents that frequently take place throughout the Alaskan waterways. Smaller spills, when aggregated, also pose a threat to belugas and their critical habitat. For example, in 2018, SPAR responded to 661 new spill cases in Alaska’s Central Region, where Cook Inlet is located. Alaska Division of Spill Prevention and Response Division, *Integrated Annual Report, Fiscal Year 2018* (2018) at 13 (hereinafter, “SPAR Report”). While SPAR only considered a few to be significant enough to impact the environment, the spills caused almost 30,000 gallons of oil or other hazardous liquid to flow into the Inlet. SPAR Report at 25. Moreover, any oil spill is a significant one, as all spills have the ability to impact marine mammals, the environment, and humans.

In addition, NOAA recently assessed the likelihood of oil spills occurring in different parts of Alaska and found that Cook Inlet faces a high risk of a spill. *See* Thea Card, *NOAA Releases Alaska Oil Spill Risk Report, Southeast and Aleutians Most at Risk*, KDLG (Nov. 19, 2014), available at <https://www.kdlg.org/post/noaa-releases-alaska-oil-spill-risk-report-southeast-and-aleutians-most-risk>. Despite this known risk, SPAR does little to deter industry actors from operating recklessly. Incredibly, of the 2,069 new oil spill cases in fiscal year 2018, SPAR only sought enforcement action against three responsible parties, and referred only two spill cases to law enforcement. SPAR Report at 24. Given the absence of meaningful consequences in virtually all spill cases, companies like AGDC are not sufficiently motivated to operate their facilities to the utmost safety standards required to avoid a potentially catastrophic spill.

In addition to poorly enforced spill regulations, locals in the Cook Inlet area are concerned about the lax regulations for ships in the Inlet and the challenging geography of the area, as these characteristics could contribute to another major oil spill. Frank Mullen, *Cook Inlet Tanker Traffic Needs Escort Tugs*, Alaska Dispatch News, Nov. 26, 2014, <https://www.adn.com/commentary/article/cook-inlet-tanker-traffic-needs-escort-tugs/2014/11/27/>. In his editorial in the Alaska Dispatch News, local fisherman Frank Mullen explains the issue:

Basically, the Cook Inlet shoreline from Chickaloon to Nanwalek and beyond, including Kachemak Bay, Snug Harbor, Kodiak, and everything in between is at risk of an oil spill. This is a lot of risk. It is a near-certainty that a spill will occur; the question is “when?” How quickly people forget the lessons of the Exxon Valdez. A Russian container ship carrying hundreds of tons of fuel recently lost power off the

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Canadian coast near the Queen Charlotte islands. A rescue effort took place over a week or more. Tugs with adequate power were hard to find in the area. Tow lines repeatedly broke. A catastrophe was avoided, but only because the ship was far enough offshore to buy the rescuers time. If this happens in Cook Inlet -- and it will - a confined geographical area with extraordinary tides and winter ice to contend with, a spill will be unavoidable.

Id.

The poorly enforced spill regulations, past oil spill data, and difficult geography increases the likelihood of an oil spill. Oil spills cause substantial negative impacts on the beluga whale because oil spills will kill or injure a significant portion of the beluga whale population. FERC did not take a hard look at the impacts of oil spills. Instead, FERC overlooked the impacts based on its mitigation measures, none of which will actually mitigate the above problems regarding oil spills.

E. Lack of Scientific Data.

The EIS also fails to take a hard look at what is causing the continued decline of the Cook Inlet belugas and how the proposed actions would contribute to the overall decline. Without first determining the cause of the decline of Cook Inlet belugas and the extent of harm caused by existing activities, FERC cannot determine the impact of its proposed actions.

The uncertainty of what is causing the Cook Inlet beluga whale decline is a major cause of the standstill in recovery efforts. Not enough studies on beluga whales exist, which makes it even more likely that the LNG Project will impact the beluga whale more than FERC predicted.

F. Mitigation Measures.

Even though FERC concluded that the LNG Project will likely adversely affect the Cook Inlet beluga whale and its critical habitat, FERC also contrarily predicted that the LNG Project will not jeopardize the continued existence of the beluga whale or result in adverse modification of the beluga whale critical habitat. App. O, Biological Opinion at O-145. FERC justified this contradiction because it believes that the avoidance, minimization, and mitigation measures will somehow makeup for the irreversible loss of beluga whale individuals. *Id.*

FERC's weak mitigation measures will not decrease the rate of decline of the Cook Inlet beluga whale population. The mitigation measures are not sufficient because the Marine Mammal Commission 2018 Stock Assessment states that "even one take every 2 years may still impede recovery." Marine Mammal Commission, *BELUGA WHALE (Delphinapterus leucas): Cook Inlet Stock* at 112 (2018). The fact that the Cook Inlet beluga whale population is already declining combined with the fact that it is generally unknown why the population

CO23-8

CO23-9

CO23-10

CO23-9

CO23-10

Our determination of effect for Cook Inlet beluga whales (Likely to Adversely Affect) is based on the best available scientific information and an analysis of Project impacts. NMFS will determine whether the Project would cause the continued decline of Cook Inlet beluga whales.

We have determined that the Project is Likely to Adversely Affect Cook Inlet beluga whales and their designated critical habitat as discussed in section 7.4.3 of the Biological Assessment, which is provided as appendix O of the final EIS. The mitigation measures identified for Cook Inlet beluga whales were designed to minimize impacts on the species and its designated critical habitat. Jeopardy determinations can only be made by the FWS or NMFS.

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is declining, makes the LNG Project even more detrimental to the sensitive Cook Inlet beluga whale population. The impacts of the LNG Projects combined with all other projects further supports that FERC should not approve the LNG Project or any projects in the Cook Inlet.

CO23-10

II. FERC failed to take a hard look at the Alaska LNG Project’s cumulative negative impact on the Cook Inlet beluga whale.

The Draft EIS violates NEPA because FERC failed to consider the cumulative impacts of all projects on the Cook Inlet beluga whale. 42 U.S.C. § 4321 et seq. NEPA requires FERC to assess the cumulative impacts in an EIS. The regulations define cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7. It is especially essential for FERC to take a hard look at the cumulative impacts to the beluga whale because “NMFS has identified cumulative effects as a threat of high relative concern for the recovery of Cook Inlet beluga whales.” App. O, Biological Assessment at O-109.

CO23-11

CO23-11

See the response to comment CO23-2.

In the present case, the Cook Inlet beluga whale critical habitat encompasses a large range, which includes all of Cook Inlet except one small exclusion area. *Id.* Thus, “[a]ny of the projects occurring within Cook Inlet could contribute to impacts on Cook Inlet beluga whale critical habitat.” Draft EIS, vol. 3 at 4-1142. Courts have held that cumulative impact analyses must include “(1) the area in which the effects of the proposed project will be felt; (2) the impact expected in that area; (3) those other actions, past, present, and proposed, and reasonably foreseeable, that have had or will have impact in the same area; (4) the effects of those other impacts; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate.” *Sierra Club v. Federal Energy Regulatory Commission*, 827 F.3d 36, 49 (D.C. Cir. 2016).

In the Draft EIS, FERC did not take a hard look at any of the cumulative impacts on the Cook Inlet beluga whale. Instead, FERC incorrectly concluded that the potential for cumulative impacts on beluga whales are unknown because “[i]t is not known whether any of the identified projects in these areas would entail permanent losses of critical beluga whale habitat.” Draft EIS, vol. 3 at 4-1142. This conclusion fails for several reasons.

First, FERC should already know, or study, the negative impacts of other projects on the Cook Inlet beluga whale. However, it failed to consider and disclose them in the Draft EIS. In the Draft EIS, FERC determined that the effects on the Cook Inlet beluga whale critical habitat would be similar to the impacts on other marine mammals in Cook Inlet. *Id.* In the marine mammals section, FERC warned that “[c]umulative impacts on marine mammals could occur even at relatively distant projects, because vessel traffic associated with some of these projects, as well as the Alaska LNG Project, would range across wide areas of

CO23 – Friends of Animals (cont’d)

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Alaska's marine environment." *Id.* at 4-1135. FERC identified several cumulative impacts to marine mammals including additional vessel traffic causing increased risk of vessel strikes and underwater noise; and in-water construction including dredging and pile driving causing habitat loss or modification, underwater noise, and increased aircraft overflights. *Id.*

CO23-11

In addition, in the biological assessment, FERC identified several projects that would overlap with the LNG Project and expressly stated that "[p]ermanent losses of critical habitat for the whale from the Alaska LNG Project, combined with the [Cook Inlet Gas Gathering System Marine Pipeline Conversion] and other development activities, could be significant for important habitat near the Beluga River and Susitna Rivers." App. O, Biological Assessment at O-108-09. FERC also identified several other cumulative impacts to the Cook Inlet beluga whales such as increased noise from vessels, aircraft overflights, and underwater activities. *Id.* at O-109. Further, the Alaska LNG Project will increase vessel traffic in Cook Inlet by up to 74 percent higher than existing levels. *Id.* This additional vessel traffic combined with the other projects, particularly LNG carriers for the Kenai LNG Plant, could lead to increased vessel strikes on Cook Inlet beluga whales. *Id.* The additional impacts of the LNG Project are detrimental to the Cook Inlet beluga whales because "Cook Inlet beluga whales already receive multiple stressors in their environment, and adding to those stressors would increase the threats to the species." *Id.*

CO23-12

CO23-12

See the responses to comments CO23-2 through CO23-10.

In the biological assessment, FERC concluded that "[t]he effect of multiple activities in critical habitat could reduce the ability of critical habitat to support Cook Inlet beluga whales," which will likely impede the recovery of the species. *Id.* FERC also concluded that with all the other projects affecting the beluga whale, "increased noise from seismic testing, pile driving, and vessel traffic could have a significant impact on Cook Inlet beluga whales if these activities occur concurrently and repeatedly over multiple seasons." *Id.* Thus, FERC knew that the cumulative impacts will negatively impact the Cook Inlet beluga whale and its critical habitat and failed to take a hard look at these impacts in the Draft EIS.

Second, even if FERC does not have adequate information about the cumulative impacts, NEPA requires FERC to obtain that information. 40 C.F.R. § 1502.22. NEPA requires the Federal Government to prepare an EIS "to the fullest extent possible," which includes assessing the cumulative environmental impacts of the proposed action. 40 U.S.C. § 4332. The Council on Environmental Quality regulations state that:

CO23-13

CO23-13

See the response to comment CO23-2. The projects listed were considered in our cumulative impact analysis. Marine mammal takes are authorized by NMFS or FWS under the MMPA.

If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include within the environmental impact statement: (1) A statement that such information is incomplete or unavailable; (2) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment; (3) a summary of existing credible scientific evidence which is relevant to

CO23 – Friends of Animals (cont’d)

evaluating the reasonably foreseeable significant adverse impacts on the human environment, and (4) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this section, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.

40 C.F.R § 1502.22(b).

FERC failed to show that it could not obtain information about other projects' impacts on the Cook Inlet beluga whale based on overall costs. In fact, FERC could have easily gained additional information about the other projects through public documents. For example, public documents reveal that in 2019 alone, the Cook Inlet currently has two oil and gas projects with active incidental take permits, one oil and gas project with an incidental take permit in progress, and two other energy projects with incidental take permits in progress. See National Marine Fisheries Service Incidental Take Authorizations and Applications (July 15, 2019). The active incidental permits authorize a total of 70 beluga whale takes. See Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Seismic Surveys in Cook Inlet, Alaska, 81 Fed. Reg. 47240 (July 20, 2016); Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Cook Inlet Pipeline Cross Inlet Extension Project, 83 Fed. Reg. 19224 (May 2, 2018). In addition, the incidental take permits in progress propose to allow a total of 89 authorized takes. See LOA, 84 Fed. Reg. at 30991; Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Geophysical and Geotechnical Survey in Cook Inlet, Alaska, 81 Fed. Reg. 6375 (February 5, 2016); Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Oil and Gas Activities in Cook Inlet, Alaska, 81 Fed. Reg. 12330 (April 1, 2019). If NMFS approves the proposed take permits, at least a total of 159 beluga whales could be legally harassed. FERC failed to consider any of this information in the cumulative impacts section of the Draft EIS.

In addition, the overall costs of obtaining the information about the cumulative impacts are not exorbitant nor are the means to obtain it unknown. Notably, NMFS has previously decided to conduct a Programmatic Environmental Impact Statement (PEIS) which would assess the cumulative impacts on the beluga whale of all projects in Cook Inlet. On October 14, 2014, NMFS issued notice that it would prepare a PEIS to analyze the environmental impacts of issuing Incidental Take Authorization (ITAs) pursuant to the MMPA for the takes of marine mammals in the Cook Inlet incidental to anthropogenic activities. Notice of Intent To Prepare an Environmental Impact Statement on the Issuance of Take Authorizations in Cook Inlet, Alaska, 79 Fed. Reg. 61616 (October 14, 2014). On August 12, 2015, NMFS issued notice of its intent to prepare a PEA on the incidental take authorizations for 2016. Programmatic Environmental Assessment on the Issuance of Take Authorizations in Cook

CO23-13

CO23-14

CO23-14

Comment noted. See the response to comment CO23-2.

CO23 – Friends of Animals (cont’d)

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Inlet, Alaska, 80 Fed. Reg. 48299 (August 12, 2015). NMFS also issued notice of intent to prepare a PEA in 2017. Notice of Intent To Prepare an Environmental Assessment on the Issuance of Incidental Take Authorizations in Cook Inlet, Alaska, 82 Fed. Reg. 41938 (September 5, 2017). However, NMFS failed to complete a PEIS or PEA regarding incidental takes and appears to have abandoned the PEIS in favor of conducting individual assessments for each requested permit. NMFS never explained why it reversed its decision to prepare a PEIS or PEA for all Cook Inlet proposed takes. Regardless, FERC has the means to conduct research to gain any allegedly “unknown” information about the cumulative impacts to the beluga whale.

CO23-14

Finally, FERC cannot defer to the LOA or rely on LNG’s compliance with environmental laws to fulfill its independent legal obligation to take a hard look at the proposed impacts of the LNG project. NEPA requires FERC to do an independent analysis of the projects impacts. An agency fails to take a “hard look” where it “defer[s] to the scrutiny of others” by relying entirely on conditions requiring the project proponent’s compliance with environmental laws imposed by other regulatory entities, and conducts no independent analysis of the environmental impact in question; attempting “to rely entirely on the environmental judgments of other agencies [is] in fundamental conflict with the basic purpose of NEPA.” *Idaho v. Interstate Commerce Comm’n*, 35 F.3d 585, 595-96 (D.C. Cir. 1994). Further, an agency may adopt another agency’s analysis only after “independent[ly] review[ing]” that analysis and explaining how it satisfies the reviewing agency’s NEPA obligations. 40 C.F.R. § 1506.3(c). *See also* 42 U.S.C. § 4332(2)(D)(iv) (agency remains “responsib[le] for the scope, objectivity, and content of the entire [NEPA] statement”). Thus, FERC must take a hard look at the cumulative impacts of all projects on the Cook Inlet beluga whale by conducting an independent analysis.

CO23-15

CO23-15

We conducted an independent analysis of the information provided throughout the environmental review process and made our own conclusions about the Project based on that information. Also see the response to comments CM6-4.

Conclusion

The LNG Project significantly adversely affects the Cook Inlet beluga whale and its critical habitat. These affects combined with the affects of other projects will cause a devastating cumulative impact on the beluga whale population. FERC failed to take the requisite hard look at the cumulative impact of all past, present, and reasonably foreseeable future projects in the Cook Inlet. Thus, FERC should not approve the Alaska LNG Project.

Sincerely,
s/ Andreia Marcuccio

Andreia Marcuccio
Animal Law Fellow
Friends of Animals
7500 E. Arapahoe Rd., Ste. 385
Centennial, CO 80112
(720) 949-7791
andreia@friendsofanimals.org

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□ NATIONAL HEADQUARTERS • 777 POST ROAD SUITE 205 • DARIEN, CT 06820 • T 203 656 1522 • F 203 656 0267
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CO24 – Sabin Center for Climate Change Law

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Filed Electronically
Secretary Kimberly D. Bose
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

October 3, 2019

RE: Planned Alaska LNG Project; Draft Environmental Impact Statement (CP17-178-000)

Secretary Bose:

The Sabin Center for Climate Change Law (“Sabin Center”)¹ submits these comments on the draft environmental impact statement (“DEIS”) for the Alaska LNG Project (“the Project”), published by the Federal Energy Regulatory Commission (“FERC” or the “Commission”) in June of 2019.

Our recommendations to FERC can be summarized as follows:

- FERC should assess the upstream greenhouse gas emissions that would result from increased natural gas production on the North Slope if the proposed project is approved, as well as the downstream greenhouse gas emissions that will result from use of natural gas transported by way of the Project.
- FERC should disclose the potential impacts associated with the emissions that would be generated as a result of the Project. Several tools are available to assess the consequences of greenhouse gas emissions that would occur if the Project is approved.
- FERC should use current science on the potency of methane in assessing the magnitude of greenhouse gas emissions that the Project would produce.

I. FERC Should Assess Indirect Upstream and Downstream Greenhouse Gas Emissions that Would Result from the Project

Pursuant to its obligations under the National Environmental Policy Act (“NEPA”), FERC must consider the indirect impacts of upstream and downstream Project-related activities. NEPA’s implementing regulations provide that agencies must consider significant and reasonably

¹ The Sabin Center for Climate Change Law at Columbia Law School develops legal techniques to fight climate change, trains law students and lawyers in their use, and provides the public with up-to-date resources on key topics in climate law and regulation. The Sabin Center works closely with the scientists at Columbia University’s Earth Institute and with governmental, nongovernmental, and academic organizations. See <http://web.law.columbia.edu/climate-change>. Please contact the Sabin Center for assistance locating any sources.

CO24-1

CO24-1 Comment noted.

CO24-2

CO24-2 On November 21, 2014, DOE granted authority to Alaska LNG to export 20 million metric tons per annum (MMPTA) of LNG to nations with which the United States has a Free Trade Agreement (FTA), which is equivalent to the full capacity of the proposed Project of up to 20 MMPTA. On May 28, 2015, DOE granted conditional authorization for the exportation of 20 MMPTA of LNG to nations that do not have an FTA with the United States (this quantity is not additive to the volume approved on November 21, 2014, to be exported to FTA nations). Because the terminal already has a significant purpose and, if authorized, could proceed absent the authorization for non-FTA nations, the two are not connected actions as contemplated by the CEQ regulations.

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foreseeable indirect and cumulative environmental impacts.² Multiple federal courts have confirmed that NEPA regulations require federal agencies to evaluate the climate change-related impacts of their actions.³

CO24-2

The Project, proposed by the Alaska Gasline Development Corporation (“AGDC”), would consist of the following facilities: a new Gas Treatment Plant (“GTP”); a 1.0-mile-long, 60-inch-diameter Prudhoe Bay Unit Gas Transmission Line (“PBTL”); a 62.5-mile-long, 32-inch-diameter Point Thomson Unit Gas Transmission Line (“PTTL”); a 806.6-mile-long, 42-inch diameter natural gas pipeline (“Mainline Pipeline”) and associated aboveground facilities including eight compressor stations and a heater station, and a 20-million metric-ton per annum liquefaction facility, including an LNG plant and marine terminal.

The DEIS assesses the greenhouse gas emissions that would be produced during the construction and operation of the Project, but not from any increase in natural gas extraction or fossil fuel combustion that would occur as a result of the Project’s approval. However, extracting natural gas from wells in the North Slope, processing it for transport across Alaska, cooling it for loading into tankers, transporting it in those tankers, and, of course, combustion by end-users, are all activities that (a) will occur as a result of the Project, (b) would not occur but for the Project, and (c) will occur to an extent that is foreseeable and readily calculable. Furthermore, each of these component activities has predictable environmental impacts.⁴

The circumstances of the Project make it unlike others licensed by FERC that have involved a node or link in a network of substantially extant natural gas infrastructure.⁵ As such, FERC cannot claim that the Project’s indirect impacts, both upstream and downstream, are

² See 40 C.F.R. §§ 1508.7 (defining “cumulative impact”), 1508.8 (defining “effects” as including direct and reasonably foreseeable indirect effects), 1508.25(c) (providing that EISs must consider direct, indirect, and cumulative impacts).

³ *Sierra Club v. Fed. Energy Regulatory Comm’n*, 867 F.3d 1357, 1363 (D.C. Cir. 2017) (“FERC’s environmental impact statement did not contain enough information on the greenhouse-gas emissions that will result from burning the gas that the pipelines will carry.”); *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1215-1217 (9th Cir. 2008) (finding that “[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct”); *High Country Conservation Advocates v. United States Forest Serv.*, No. 13-CV-01723-RBJ, 2014 WL 2922751, at *8-11, 13-15 (D. Colo. June 27, 2014) (holding that it was arbitrary and capricious for federal agencies to omit analysis of GHG emissions and related costs in EISs for mining exploration projects).

⁴ See, e.g., Timothy Vincierra et al., *Regional air quality impacts of hydraulic fracturing and shale natural gas activity: Evidence from ambient VOC observations*, 110 Atmospheric Env’t 144 (2015) (identifying natural gas hydrofracture drilling operations as sole plausible cause for increase in ambient emissions of ethane and VOCs—and, by inference, methane—in region downwind of drilling operations in Pennsylvania and West Virginia); Victor M. Heilwell et al., *Stream Measurements Locate Thermogenic Methane Fluxes in Groundwater Discharge in an Area of Shale-Gas Development*, 49 Env’tl. Sci. & Tech. 4057 (2015) (measuring migration of fingerprinted methane, i.e., gas not attributable to sources other than drilling, into waters near shale-gas development operations); Christopher W. Moore et al., *Air Impacts of Increased Natural Gas Acquisition, Processing, and Use: A Critical Review*, 48 Env’tl. Sci. & Tech. 8349 (2014) (discussing several case study-based natural gas lifecycle emissions assessments); National Research Council, *Cumulative environmental effects of oil and gas activities on Alaska’s North Slope* (2003).

⁵ Compare FERC, *Environmental Assessment for the Cove Point Liquefaction Project*, Dominion Cove Point LNG, LP Docket No. CP13-113-000, at 163 (May 2014), <http://bit.ly/1k5fNM0> (“A more specific analysis of Marcellus Shale upstream facilities is outside the scope of this analysis because the exact location, scale, and timing of future facilities are unknown.”).

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somehow not foreseeable. Instead, FERC must recognize that, because the origins of the gas to be extracted and transported are already known, and the nature of that extraction and transport well understood, the indirect effects of those activities can reasonably be anticipated—and therefore must be reflected in an EIS.⁶ Accordingly, the Commission should consider the downstream greenhouse gas emissions caused by fossil fuel combustion,⁷ as well as the other life cycle emissions from the facility's production and transportation of LNG.⁸

CO24-2

The D.C. Circuit recently held that FERC need not assess the greenhouse gas emissions resulting from export-induced increases in domestic production associated with new export facilities, because LNG exports cannot take place without approval from DOE.⁹ However, “when determining the contents of an . . . EIS, an agency must consider all ‘connected actions,’” and “[a]n agency impermissibly ‘segments’ NEPA review when it divides connected . . . federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration.”¹⁰ The D.C. Circuit has raised, without answering, the question of whether FERC's construction authorizations and DOE's export authorizations are “connected actions” for purposes of NEPA review in the LNG export context.¹¹

“Connected actions” include those actions that “[a]re interdependent parts of a larger action and depend on the larger action for their justification.”¹² FERC's action in approving construction of an LNG export terminal would not be justified without an expectation that the terminal will be used to export LNG. Nor could DOE justify approving LNG exports through a facility whose construction was not approved. Similarly, the D.C. Circuit has indicated that a project without substantial independent utility is more likely to be considered “connected” to other related

⁶ Compare *Sierra Club v. Fed. Energy Regulatory Comm'n*, 827 F.3d 36, 47 (D.C. Cir. 2016) (“*Sierra Club (Freeport)*”) (the Commission did not need to assess upstream greenhouse gas emissions associated with an LNG export terminal where “the Commission found no evidence that the Project[] by [itself] would lead to increased gas production because no specific shale-play [had] been identified as a source of natural gas,” and did not anticipate that the gas to be exported would “come from future, *induced* natural gas production, as opposed to from existing production”) (emphasis in original) (internal quotation marks omitted); *Birchhead v. Fed. Energy Regulatory Comm'n*, 925 F.3d 510, 517 (D.C. Cir. 2019) (“[A]ccording to the Commission, unless the record demonstrates that the proposed project represents the *only* way to get additional gas ‘from a specific production area’ into the interstate pipeline system, . . . no such ‘reasonably close causal relationship’ exists.”) (emphasis in original).

⁷ *Sierra Club*, 867 F.3d at 1373–74 (“We conclude that the EIS...should have either given a quantitative estimate of the downstream greenhouse emissions that will result from burning the natural gas that the pipelines will transport or explained more specifically why it could not have done so. As we have noted, greenhouse-gas emissions are an indirect effect of authorizing this project, which FERC could reasonably foresee, and which the agency has legal authority to mitigate.”); see also *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (8th Cir. 2003) (finding in NEPA review for coal railway, Surface Transportation Board must account for greenhouse gas emissions and air quality effects from foreseeable increase in coal consumption and combustion).

⁸ *Sierra Club v. United States Dep't of Energy*, 867 F.3d 189, 201–02 (D.C. Cir. 2017) (noting that as part of its review “the Department evaluated the upstream and downstream greenhouse-gas emissions (CO2 and methane) from producing, transporting, and exporting LNG in its Life Cycle Report”).

⁹ *Sierra Club Freeport*, 827 F.3d at 47 (holding that FERC did not need to consider upstream emissions that would only occur if the Department of Energy approved the facility for LNG export); *EarthReports, Inc. v. Fed. Energy Regulatory Comm'n*, 827 F.3d 949, 954 (D.C. Cir. 2016) (extending the holding of *Sierra Club Freeport* to downstream emissions).

¹⁰ *Delaware Riverkeeper Network v. Fed. Regulatory Comm'n*, 753 F.3d 1304, 1313, 1314 (D.C. Cir. 2014).

¹¹ *Sierra Club Freeport* at 45–46 (citing 40 C.F.R. § 1508.25(a)(1)).

¹² 40 C.F.R. § 1508.25(a)(1)(iii).

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actions.¹³ An LNG export facility has no independent utility absent export approvals. Moreover, FERC cannot argue that the exports at issue are speculative or ill-defined.¹⁴ DOE has already approved AGDC's export proposals, including its proposal to ship approximately 20 million metric tons per annum of natural gas to non-Fair Trade Agreement countries for a term of 30 years, which will require NEPA review.¹⁵ Because FERC's approval of the Project and DOE's approval of LNG exports are "connected actions," their greenhouse gas impacts must be assessed in a single EIS.

In sum, in order to avoid impermissibly narrowing the scope of the EIS, FERC should act jointly with DOE to assess upstream and downstream indirect emissions resulting from exports of LNG through the Project. The Commission has the authority to do so under the Natural Gas Act (NGA) as designated lead agency for NEPA compliance,¹⁶ and the legal obligation under NEPA's requirement that "connected actions" be considered together.¹⁷

II. The Commission Should Assess the Significance of the Project's Greenhouse Gas Emissions in Order to Better Inform Decision-Makers and the Public About the Scale of the Emissions Impact from the Proposed Project

The Commission should evaluate the consequences of the Project's greenhouse gas emissions, in addition to including indirect effects in its accounting of those emissions. The DEIS recognizes that the Project would increase the atmospheric concentration of greenhouse gases and contribute to climate change impacts, but declines to assess those impacts because "there is no universally accepted methodology to attribute discrete, quantifiable, physical effects on the environment to the Project's incremental contribution to GHGs."¹⁸ There are, however, a number of ways to assess the consequences of a project's greenhouse gas emissions that FERC did not consider.

Among the most useful is the social cost of carbon, methane, and nitrous oxide.¹⁹ Although they were developed for a rulemaking context, these metrics can readily be used in an

¹³ *Delaware Riverkeeper*, 753 F.3d at 1315-16. To the extent FERC may argue that the Project has substantial independent utility apart from DOE export authorizations because it will transport natural gas within Alaska, FERC cannot rely on *Sierra Club (Freeport)* to avoid assessing the upstream and downstream indirect greenhouse gas emissions related to domestic use.

¹⁴ *Compare id.* at 1317-18 ("NEPA, of course, does not require agencies to commence NEPA reviews of projects not actually proposed.").

¹⁵ DEIS, Planned Alaska LNG Project (2019) at 1-10 (hereinafter "DEIS").

¹⁶ 15 U.S.C. § 717n(b)(1) (designating the Commission to be "the lead agency for the purposes of coordinating all applicable Federal authorizations and for the purposes of complying with the National Environmental Policy Act"); see also 42 U.S.C. § 7172(a)(2)(B).

¹⁷ For further information regarding federal agencies' obligation to assess greenhouse gas emissions resulting from fossil fuel transportation projects under NEPA, please refer to the attached article (Attachment A: Burger and Wentz, 2019).

¹⁸ DEIS at 4-1162.

¹⁹ The Social Cost of Carbon, Methane, and Nitrous Oxide, though now rescinded, are scientifically credible estimates of the societal costs of greenhouse gas emissions, developed through a lengthy process of interagency consultation and peer review, and that cost is absolutely relevant to assessing the nature and significance of the proposed Project's environmental consequences. See *Zero Zone Inc. v. Dept. of Energy*, 832 F.3d 654 (7th Cir. 2016) (upholding use of methodology for calculating social cost of carbon used by the Interagency Working Group on the Social Cost of Carbon); Interagency Working Group on the Social Cost of Greenhouse Gases, Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive

CO24-3 The SCC tool, as well as the Social Cost of Methane and Nitrous Oxide tools, estimates the monetized climate change damage associated with an incremental increase in carbon dioxide (CO₂) emissions in the given year. It estimates the cost today of future climate change damage, represented by a series of annual costs per metric ton of emissions discounted to present-day value.

As indicated in 62 FERC ¶ 61,233 Order on Remand Reinstating Certificate and Abandonment Authorization for the Southeast Market Pipelines Project (SMP Order), we acknowledge that the SCC methodology does constitute a tool that can be used to estimate incremental physical climate change impacts, either on the national or global scale. The integrated assessment models underlying the SCC tool were developed to estimate certain global and regional physical climate change impacts due to incremental GHG emissions under specific socioeconomic scenarios.

The Commission has repeatedly explained that while the methodology may be useful for other agencies' rulemakings or comparing regulatory alternatives using cost-benefit analyses where the same discount rate is consistently applied, it is not appropriate for estimating a specific project's impacts or informing our analysis under NEPA.¹ Moreover, Executive Order 13783, Promoting Energy Independence and Economic Growth, has disbanded the Interagency Working Group on Social Cost of Greenhouse Gases and directed the withdrawal of all technical support documents and instructions regarding the methodology, stating that the documents are "no longer representative of governmental policy."²

In addition, the Commission has provided extensive discussion on why the Social Cost of Carbon is not appropriate in project-level NEPA review and cannot meaningfully inform the Commission's decisions on natural gas infrastructure projects under the NGA.³ It is not appropriate for use in any project-level NEPA review for the following reason: EPA states that "no consensus exists on the appropriate [discount] rate to use for analyses spanning multiple generations"⁴ and consequently, significant variation in output can result.⁵

The Commission recognizes the availability of the SCC tool, but in the SMP Order, the Commission determined that it is not appropriate for use in project-level analyses.

¹ Mountain Valley, 161 FERC ¶ 61,043 at P 296.

² Exec. Order No. 13,783, 82 Fed. Reg. 16093 (2017).

³ Mountain Valley Pipeline, LLC, 161 FERC ¶ 61,043, at P 296 (2017), order on reh'g, 163 FERC ¶ 61,197, at PP 275-297 (2018), aff'd, *Appalachian Voices v. FERC*, No. 17-1271, 2019 WL 847199, at *2 (D.C. Cir. Feb. 19, 2019) ("[The Commission] gave several reasons why it believed petitioners' preferred metric, the Social Cost of Carbon tool, is not an appropriate measure of project-level climate change impacts and their significance under NEPA or the Natural Gas Act. That is all that is required for NEPA purposes.").

⁴ See Fact Sheet: Social Cost of Carbon issued by EPA in November 2013,

⁵ Depending on the selected discount rate, the tool can project widely different present-day cost to avoid future climate change impacts.

CO24 – Sabin Center for Climate Change Law (cont'd)

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environmental analysis to better understand the potential costs associated with greenhouse gas emissions. The cost estimates are a useful proxy for the actual impacts of climate change. The utility of this methodology was recognized in a recent dissent from FERC Commissioner Richard Glick, who noted that “[t]he Commission’s refusal to incorporate the Social Cost of Carbon in the environmental review or even to assess the impact of GHG emissions from the Project fails to fulfill its responsibilities under the NGA and NEPA.”²⁰

CO24-3

Additional tools to understand the magnitude of greenhouse gas emissions’ impact include the EPA’s quantification threshold of 25,000 tons per year of carbon dioxide equivalent to identify major emitters for the purposes of greenhouse gas reporting (as noted by EPA, facilities that surpass this threshold are considered the “largest emitters” in the country).²¹ FERC should also consider using the EPA’s Greenhouse Gas Equivalencies Calculator, which can be used to compare emissions from the proposal with, for example, emissions from household electricity use or vehicle miles driven.²² This tool provides a reference point that an agency can use to assess a proposed project’s impact on the climate. Finally, FERC could evaluate the Project’s greenhouse gas emissions in the context of global and national carbon budgets; estimates have been developed for both.²³ At a minimum, the Commission must consider using the methods discussed above for assessing climate impacts,²⁴ and if it rejects them, provide a reasoned explanation for doing so.²⁵

The DEIS also argues that the significance of the Project’s contribution to climate change cannot be assessed in the absence of federal or state greenhouse gas reduction goals. Under this reasoning, no federal agency could ever determine the climate impacts of an agency action. As Commissioner Glick has explained, “[i]t is absurd to even contemplate NEPA not applying to the most significant environmental issue of our time.”²⁶

Order 12866 (May 2013, Revised August 2016); Interagency Working Group on the Social Cost of Greenhouse Gases, Addendum to Technical Support Document on Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866: Application of the Methodology to Estimate the Social Cost of Methane and the Social Cost of Nitrous Oxide (Aug. 2016). See also *Montana Environmental Information Center v. OSM*, 274 F.Supp.3d 1074 (D. Montana 2017) (requiring disclosure of greenhouse gas costs in NEPA review where benefits were also disclosed, and citing the federal Social Cost of Carbon as an available disclosure tool); *High Country Conservation Advocates v. USFS*, 52 F.Supp.3d 1174 (D. Colo. 2014) (same).

²⁰ Order on Remand Reinstating Certificate and Abandonment of Authorization, Docket No. CP14-554-002, et al. (FERC, issued March 14, 2018), Glick dissent at 2, available at <https://www.ferc.gov/CalendarFiles/20180314230126-CP14-554-002.pdf>.

²¹ EPA, GHG Reporting Program Facts and Figures, <https://www.epa.gov/ghgreporting/key-facts-and-figures>.

²² EPA, Greenhouse Gas Equivalencies Calculator, <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

²³ See, e.g., Corinne Le Quéré et al., Global Carbon Budget 2018, *Earth Systems Science Data* (2018); Daniel J. Hayes, The North American Carbon Budget, in *Second State of the Carbon Cycle Report: A Sustained Assessment Report* (Cavallaro et al. eds, USGCRP 2018).

²⁴ For further information regarding the need to assess climate impacts and tools for doing so, please refer to the attached article (Attachment A: Burger and Wentz, 2019).

²⁵ See *Sierra Club*, 867 F.3d at 1375 (remanding EIS to FERC to explain its position on the social cost of carbon); compare *Appalachian Voices v. Fed. Energy Regulatory Comm’n*, No. 17-1271, 2019 WL 847199, at *2 (D.C. Cir. Feb. 19, 2019) (rejecting challenge to EIS where FERC “gave several reasons why it believed petitioners’ preferred metric, the Social Cost of Carbon tool, is not an appropriate measure of project-level climate change impacts and their significance under NEPA or the Natural Gas Act”).

²⁶ FERC, *supra* note 20 at 6.

CO24 – Sabin Center for Climate Change Law (cont’d)

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III. FERC Should Use Current Science in Measuring Global Warming Potential

In the final EIS, FERC should use updated figures to properly assess the magnitude of greenhouse gas pollution that would result from the Project. The DEIS uses a global warming potential (GWP) of 25 for methane, based on a 100-year time horizon.²⁷ The DEIS explains that the 100-year figure is used based on EPA’s Greenhouse Gas Reporting Rule.²⁸ This GWP is flawed for two reasons.

First, because methane remains in the atmosphere for under two decades,²⁹ a 20-year timeframe is more relevant than the 100-year span. At least one court has concluded that an “unexplained decision to use the 100-year time horizon,” even a decision based on EPA’s use of that timeframe, “when other more appropriate time horizons remained available, qualifies as arbitrary and capricious.”³⁰ The most recent Intergovernmental Panel on Climate Change (IPCC) Assessment Report estimates that methane’s GWP is 87 over a 20-year timeframe (when the effects of oxidation are taken into account).³¹ The final EIS should use this figure.

Second, the most recent IPCC Assessment Report estimates that methane’s GWP over a 100-year time frame is 36 (when the effects of oxidation are included).³² Even though this time horizon is inappropriate, the final EIS should not use outdated science. Although the Greenhouse Gas Reporting Rule uses a GWP of 25 for methane,³³ courts have recognized the IPCC as authoritative,³⁴ and “[t]he EPA considers the GWP estimates presented in the most recent IPCC scientific assessment to reflect the state of science.”³⁵

An EIS must provide a “full and fair discussion of environmental impacts,” and the information made available to the public “must be of high quality.”³⁶ In order to fulfill this mandate, FERC should use up-to-date science when assessing the potency of methane.

Thank you for the opportunity to submit comments on the Alaska LNG Project. Please feel free to contact SCCCL with any questions.

Sincerely,

Hillary Aidun
Climate Law Fellow

²⁷ DEIS at 4-878.
²⁸ *Id.*
²⁹ IPCC, Climate Change 2013, The Physical Science Basis, Chapter 8, 714 (Sept. 2013).
³⁰ *W. Org. of Res. Councils v. U.S. Bureau of Land Mgmt.*, CV-16-21-GF-BMM, 2018 WL 1475470, at *15 (D. Mont. Mar. 26, 2018).
³¹ IPCC, *supra* note 29.
³² *Id.*
³³ 40 C.F.R. Pt. 98, Subpt. A, Tbl. A–1.
³⁴ See, e.g., *Mass. v. Env. Protection Agency*, 549 U.S. 497, 508 (2007); *Ctr. For Biological Diversity v. National Highway Traffic Safety Admin.*, 538 F.3d 1172, 1190 (9th Cir. 2008).
³⁵ EPA, Understanding Global Warming Potentials, <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials>.
³⁶ 40 C.F.R. §§ 1502.1, 1500.1(b).

CO24-4

CO24-4

In Section 4.15 of the final EIS, we acknowledge that the calculated global warming potential for each GHG can vary. We used the same GWP that the EPA used in the Greenhouse Gas Reporting Rule for consistency throughout the document.

CO24 – Sabin Center for Climate Change Law (cont'd)

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Sabin Center for Climate Change Law
212-854-0081
haidun@law.columbia.edu

CO24 – Sabin Center for Climate Change Law (cont’d)

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CO25 – Alaska Oil and Gas Association

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Alaska Oil and Gas Association



121 W. Fireweed Lane, Suite 207
Anchorage, Alaska 99503-2035
Phone: (907) 272-1481 Fax: (907) 279-8114
Kara Moriarty, President/CEO

VIA ELECTRONIC FILING

October 3, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street N.E.
Washington, D.C. 20426

Re: Comments of the Alaska Oil and Gas Association on the Federal Energy Regulatory Commission's Draft Environmental Impact Statement for the Alaska LNG Project (FERC No. CP17-178-000)

Dear Secretary Bose:

This letter provides the comments of the Alaska Oil and Gas Association ("AOGA") in response to the Federal Energy Regulatory Commission's ("FERC") draft Environmental Impact Statement ("DEIS") for the Alaska LNG Project ("Project"), issued June 28, 2019 (FERC No. CP17-178-000). AOGA appreciates FERC's consideration of the comments set forth below.

AOGA is a professional trade association whose mission is to foster the long-term viability of the oil and gas industry for the benefit of all Alaskans. AOGA's membership includes 14 companies representing the industry in Alaska that have state and federal interests, both onshore and offshore. AOGA's members have a well-established history of prudent and environmentally responsible oil and gas exploration, development, and production in Alaska.

AOGA's members support the Alaska Gasline Development Corporation's ("AGDC") proposal to construct and operate the Project, which is necessary to commercialize the vast natural gas resources of Alaska's North Slope. These resources have remained stranded since their initial discovery in 1968 despite numerous previous attempts to promote the development of infrastructure to bring natural gas to market and to capitalize on Alaska's abundant natural gas resource base. The Project would allow gas resources on the North Slope to be commercialized during the economic life of the Prudhoe Bay Unit and Point Thomson Unit fields. In addition to meeting foreign demand for liquid natural gas ("LNG") exports from Alaska, the Project will provide for a reliable, in-state gas supply that enables future economic development.

CO25-1

CO25-1

Comment noted.

CO25 – Alaska Oil and Gas Association (cont’d)

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Sec. Kimberly D. Bose
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INDUSTRY OVERVIEW

Development of the North Slope began in the early 1960s just after Alaska Statehood. In 1964, the State held its first North Slope lease sale. The massive Prudhoe Bay field was discovered in 1968. In its 40-plus years of production, the North Slope has produced over 17 billion barrels of oil. It is without dispute that this production has provided unparalleled economic and social benefits to the State of Alaska and its citizens, Alaska Native organizations, municipalities, and the nation as a whole. This action brought tens of thousands of people out of poverty, modernized local and state infrastructure, and improved healthcare, education, sanitary living conditions, transportation, waste management and access to power and emergency services. To this day, the oil and gas industry remains the backbone of Alaska’s economy. Industry members operate oil and gas facilities across the State of Alaska, including the North Slope, Kenai Peninsula, Cook Inlet region, and Valdez. Over 103,000 Alaska jobs are attributable to oil and gas investment and activity, which represents 32% of all Alaska jobs and 35% of all Alaska wages. The oil and gas industry has contributed over \$150 billion (not adjusted for inflation) to the State of Alaska through royalties and taxes, and provides the largest cash contribution to the Alaska Permanent Fund.

These benefits have been produced through an established record of safe and environmentally responsible development that is respectful of all of Alaska’s natural resources and the local communities in which we operate. This outstanding record stems in significant part from an industry commitment to employing best management practices (“BMPs”) and providing extensive training programs for oil and gas industry workers, such as the mandatory safety, environmental, and cultural training course provided through the industry-organized North Slope Training Cooperative,¹ and the associated Alaska Safety Handbook, which provides standardized safety procedures and BMPs for Alaska oil and gas operations. This standardization ensures that employees and contractors implement a consistent set of safe and environmentally responsible practices and procedures.

The Alaska oil and gas industry has an impressive record of environmental stewardship and innovation. For example, oil and gas operators and the U.S. Fish and Wildlife Service (“FWS”) jointly developed procedures, training, and best practices for managing human-polar bear interactions that set the global gold standard for human-bear interactions and have been repeatedly recognized as a success.² This program establishes detailed plans and procedures that, *inter alia*, reduce and manage oilfield attractants to polar bears, outline a chain-of-command for responding to any polar bear encounter, and provide polar bear awareness and response training

CO25-1

¹ See North Slope Training Cooperative, <http://nstc.apicc.org/>.
² See 73 Fed. Reg. 28,306, 28,314 (May 15, 2008) (special rule) (program has “proven to be beneficial to the conservation of marine mammals such as the polar bear”); 73 Fed. Reg. 28,212, 28,266 (May 15, 2008) (listing) (program has “proven to be highly successful in providing for polar bear conservation in Alaska”).

CO25 – Alaska Oil and Gas Association (cont'd)

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for employees.³ The oil and gas industry has invested millions of dollars into this program and related polar bear research, monitoring, and infrastructure modifications.⁴ Responsible industry practices have also ensured that polar bear denning in the vicinity of oil and gas operations has been carefully monitored and protected to allow for the successful emergence of the sow and cub(s). Indeed, even in FWS's rule listing the polar bear as a "threatened species," FWS expressly recognized that the oil and gas industry has a "beneficial record of protecting polar bears" and that Alaska oil and gas activities have "minimal" impacts that have *no* contribution to the bear's listed status.⁵ Similarly, in the Cook Inlet Region, effective mitigation measures include monitoring of areas to detect the presence of marine mammals before beginning activities and a shutdown of activities under certain circumstances to prevent adverse effects to marine mammals.

CO25-1

The proposed Project reflects the industry's commitment to safety and environmental stewardship. AGDC has committed to implement a comprehensive suite of BMPs and mitigation measures that will reduce impacts to less than significant levels. Using clean, energy-efficient and safe production methods, the Project will allow the commercialization and delivery of a stable supply of Alaska's North Slope natural gas resources for the benefit of the state, its people, and the environment.

DEIS COMMENTS

FERC's DEIS is well-organized and provides a thorough analysis of reasonably foreseeable impacts of construction and operation of the Project, including cumulative impacts. FERC's alternatives analysis provides a robust evaluation of potential modifications to the proposed Project, including potential modifications to the proposed LNG site, pipeline route and facility configurations. AOGA specifically endorses FERC's proposed selection of Alternative B. Consistent with the goal of National Environmental Policy Act ("NEPA") and its implementing regulations, the DEIS's detailed analysis allows FERC to take the requisite "hard look" at potential environmental consequences from the Project.

CO25-2

AOGA nevertheless believes that improvements and clarifications to the DEIS are necessary to properly characterize potential impacts and frame alternatives. For example, the DEIS's

CO25-2

Comment noted. See the responses to comments CO25-3 through CO25-34.

³ See 73 Fed. Reg. at 28,311 ("The intent of the interaction plan and training activities is to allow for the early detection and appropriate response to polar bears that may be encountered during operations, which eliminates the potential for injury or lethal take of bears in defense of human life. By requiring such steps be taken, we ensure any impacts to polar bears will be minimized and will remain negligible.").

⁴ For example, the industry conducts annual den detection surveys in December, prior to the start of winter off-road activities. Den surveys are typically done from an aerial fixed wing or rotor platform and use infrared technology/cameras to identify putative dens. Putative dens are then confirmed on the ground and/or avoided with a buffer zone to mitigate against potential impacts to denning bears.

⁵ 73 Fed. Reg. at 28,241, 28,266, 28,284; *see id.* at 28,266 ("Oil and gas exploration, development, and production activities do not threaten the [polar bear] species throughout all or a significant portion of its range").

CO25 – Alaska Oil and Gas Association (cont'd)

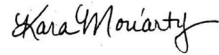
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conclusions regarding potential impacts to caribou are not supported by the best available science, which demonstrates that the proposed infrastructure would have only minor impacts to caribou habitat or migratory movements. Similarly, the DEIS's analysis of subsistence uses overstates potential impacts and provides inconsistent conclusions that must be addressed in a final EIS. A full list of technical corrections and comments is provided in Attachment A to this comment letter. In addition, Attachments B through E provide additional information and data regarding caribou and polar bear populations. AOGA respectfully requests that FERC staff consider this information, which constitutes the best available science, when preparing the final EIS.

AOGA sincerely appreciates FERC's consideration of the comments and information provided in this letter and in the Attachments, which are intended to improve the Commission's final NEPA document in support of the Project.

Sincerely,



Kara Moriarty
President and CEO
Alaska Oil & Gas Association

Attachments A-E

CO25-2

CO25 – Alaska Oil and Gas Association (cont’d)

Attachment A
Technical Comments and Corrections

DEIS Section & Page Number	Comment
§ 4.6.1.2 p. 4-283	In the Pipeline Trenching subsection, the DEIS states: “The 1.0-mile-long PBTL and 62.5-mile-long PTTL would be installed aboveground at about 7 feet above grade, which would provide room for animals to pass under the structure and maintain access to existing habitat, although caribou (particularly those harassed by mosquitoes) do not readily cross beneath elevated pipelines (Smith and Cameron, 1985).” In fact, the study cited here examined caribou movement in only two (2) days in a limited part of an oilfield where “surface-to-pipe clearance is 1.5 m in most areas.” As noted earlier in the paragraph, the transmission lines would be elevated to a minimum of 7 feet above grade, which has been demonstrated to maintain crossing success for Central Arctic Herd (“CAH”) caribou. See “A Literature Review and Synthesis on the Effect of Pipeline Height on Caribou Crossing Success,” Brian E. Lawhead, Julie P. Parrett, Alexander K. Prichard, and David A. Yokel. BLM-Alaska Open File Report 106, April 2006, U. S. Department of the Interior Bureau of Land Management (hereinafter “Lawhead <i>et al.</i>, 2006 (BLM 2006)”). In addition the observations appear to have been taken at a point where the Kuparuk Pipeline “closely parallels the WSR [West Sac Road]” which had traffic apparently moving at a rate of 20 and 21 vehicles per hours on those days. But as Lawhead <i>et al.</i>, 2006 (BLM 2006) explain in their later research: Research in the North Slope oilfields has confirmed that the most important factor affecting caribou crossing success at pipeline/road corridors is traffic on nearby roads. Crossing success in study plots with pipelines alone (elevated to the minimum height of 1.5 m) did not differ significantly from that in control plots or with roads alone, but crossing success was significantly reduced in study plots containing an elevated pipeline next to a busy road. The combination of high-traffic roads (15 or more vehicles/hr) adjacent to elevated pipelines created a synergistic effect that reduced caribou crossing success... <i>Id.</i> at 12. The report citation is not relevant to the design of the project, is misleading, and should be removed. Please reference studies that support the development of modern caribou mitigation measures that are consistent with the Project design
§ 4.6.1.3 p. 4-293	The DEIS should provide citations for the following statements in the moose and bear subsections: “Moose could be distracted from their normal migration patterns if they encounter new vegetative growth within the right-of-way” and “Brown bears occur throughout mainland Alaska, with an estimated statewide population of about 30,000 bears.” These are examples of scientific statements that AOGA feels the DEIS would benefit from citing sources, to further bolster the scientific nature of the analysis throughout the document.

CO25-3

CO25-3

Section 4.6.1.2 of the final EIS has been updated to address this comment.

CO25-4

CO25-4

Section 4.6.1.3 of the final EIS has been updated to address this comment.

CO25 – Alaska Oil and Gas Association (cont’d)

§ 4.6.1.3 p. 4-297	The DEIS has inappropriately concluded that the Project would likely have a significant impact on the CAH herd. ¹ Vol. 1 page 4-297. This conclusion is not fully explained or correlated to specific impacts of discrete Project infrastructure or activities, and not supported by the most current information or relevant studies. Rather, it appears that the DEIS has not fully distinguished older research from several decades ago concerning effects based upon lower heights of pipelines and colocation of pipelines and roads. ² AOGA respectfully submits that the DEIS conclusion is erroneous and should be reconsidered and revised. The best data currently available shows that current pipeline mitigation measures-- such as 7 foot elevation clearance, distancing from roads, and non-glare coatings-- are effective in mitigating impacts to caribou. Moreover, effects of Project infrastructure at Prudhoe Bay and of the PTTL pipeline to the east would only be minor with respect to caribou habitat or migratory movements. Construction impacts, such as of the buried Mainline pipeline, would be seasonal, temporary, and mitigated. To ensure that the final EIS accurately reflects the best available science regarding potential impacts to caribou, AOGA respectfully requests that it reflect the findings in the 2018 caribou monitoring study which is described in Attachment B and provided as Attachment C to this letter. ³	CO25-5
§ 4.6.1.3 pp. 4-296 to 4-302	The DEIS references several caribou studies that show adverse oilfield impacts on caribou; however, the DEIS does not reference or cite published literature that shows the oilfields having non-significant or minor impacts on caribou (<i>e.g.</i> , Noel et al. 2004 and 2006).	CO25-6
§ 4.6.1.3 pp. 4-296 to 4-302	Construction of the GTL and expansion of West Dock will add several hundred acres to the footprint of Prudhoe Bay. However, the PBU area has been substantially developed and encompassed by industrial facilities, pipelines, roads, and related human activities since the mid-1970s. New Project facilities at Prudhoe Bay within that area should not significantly impact calving, which is not likely to occur to a great extent within the area of a developed facility. An incremental diminishment of habitat from these facilities is not significant within the context of the range of habitat	CO25-7

- CO25-5 We considered information provided in this reference in our analysis. See the updates to section 4.6.1.3 of the final EIS and the response to comment SA2-6.
- CO25-6 See the updates to section 4.6.1.3 of the final EIS and the response to comment SA2-6.
- CO25-7 See the updates to section 4.6.1.3 of the final EIS and the response to comment SA2-6

¹ See, e.g., Vol.1 ES-2.6; Table 4.6.1.4. For example, the DEIS states “Because of impacts during sensitive periods, permanent impacts on sensitive habitats, and the Project location at the center of the Central Arctic Herds’ range, we conclude that impacts on these herds from Project construction and operation would be significant.”

² See, e.g., comment on § 4.6.1.2, p. 4-283.

³ See Caribou Monitoring Study In The Point Thomson Area, Northern Alaska, 2018 Annual Report, Prepared for ExxonMobil Alaska Production Inc. by Alexander K. Prichard, Joseph H. Welch, and Brian E. Lawhead, ABR, Inc.—Environmental Research & Services,” November 28, 2018. Submitted to the North Slope Borough (NSB) Department of Wildlife Management and Department of Planning and Community Services in November 2018 as required by NSB Ordinance Serial No. 75-06-61.

CO25 – Alaska Oil and Gas Association (cont'd)

	available to the CAH for calving, insect relief and grazing. Nor should there be any major impact on CAH migratory movements or on the overall health of the CAH.	CO25-7		
§ 4.6.1.3 pp. 4-296 to 4-302	The Mainline leading south from PBU will be buried and will not present any permanent impact or impediment to the herd. Any impacts would likely arise only from temporary construction activities and would be mitigated by the Project. Additionally, in the North Slope region, the majority of construction activities would occur during winter when most of the CAH migrates south to Brooks Range foothills or other inland areas.	CO25-8	CO25-8	Comment noted. Also, section 4.6.1.3 of the final EIS has been updated to include a map set (see figure 4.6.1-6) depicting Central Arctic Herd concentration areas on the North Slope, including calving, insect relief areas, and seasonal distribution.
§ 4.6.1.3 pp. 4-296 to 4-302	The PTTL will be constructed in winter and elevated to a height of 7 feet to support successful caribou passage. There are no roads and little other infrastructure in the area. Documented experience and analysis of the Point Thomson Export Pipeline and the Point Thomson Unit production facilities have shown, as predicted in the 2012 PTU EIS, that impacts on caribou are minor. The same is true with respect to incremental increase in infrastructure within the Prudhoe region (please see Cronin <i>et al.</i> , 1994 “Mitigation of the Effects of Oil field. Development and transportation corridors on caribou”). Reported data and expert review of caribou behavior at PTU since construction of the production facilities from 2013-2018 show no effect on large scale caribou movements. Nothing about the PTTL or the 7 acre expansion at PTU should change that result. The actual footprint of these facilities is very small.	CO25-9	CO25-9	See the updates to section 4.6.1.3 of the final EIS and the response to comment SA2-6
§ 4.6.1.3 pp. 4-296 to 4-302	The final EIS should reflect that, overall, there should be minor incremental loss of habitat from Project infrastructure given the vast area and nearby, quality habitat for caribou. There should be no significant additional restriction to caribou movement given the effective mitigation of 7' pipeline elevation. Nor should there be significant impacts to calving. CAH calving occurs over a wide range of the central coastal plain in spring to mid-June when industry activities are very limited and typically confined to existing infrastructure. While calving caribou may maintain some distance from busy roads, there are no such roads here except in already developed areas of Prudhoe Bay. Similarly, there should be no significant impact to CAH migratory patterns.	CO25-10	CO25-10	See the updates to section 4.6.1.3 of the final EIS and the response to comment SA2-6
§ 4.6.1.3 p. 4-297	The DEIS references the Lawhead <i>et al.</i> , 2006 (BLM 2006) synthesis study, stating: “The BLM found that older pipelines (i.e., those constructed before the minimum height of 5 feet above ground level was stipulated by the State of Alaska) constitute barriers to caribou crossings in the absence of crossing ramps. Generally, pipelines elevated to the minimum height of 5 feet are high enough to accommodate caribou crossings during snow-free periods (BLM, 2006).” This paper shows that mitigation measures on pipelines have worked, and that caribou are able to cross pipelines over 7 feet without incident. The final EIS should reflect these facts and be updated for consistency. The study in part demonstrates that past concerns about caribou passage under pipelines were in large part attributable to lower pipeline elevations (some less than	CO25-11	CO25-11	See the updates to section 4.6.1.3 of the final EIS and the response to comment SA2-6

CO25 – Alaska Oil and Gas Association (cont’d)

	2 or 3 feet) employed in initial construction at Prudhoe Bay⁴ and to collocation of pipelines with roads with consistent traffic.⁵ The study then finds in summary with respect to higher pipeline height, such as the then current 1.5m elevation: The available data on pipe-height selection by caribou demonstrate that pipelines elevated to the minimum height of 1.5m are high enough to accommodate crossings by caribou during snow-free periods. The limited data on pipeline crossings by caribou in winter indicate that pipeline heights in the range of 2.L -2.5 m (7-8 ft) are more likely to be used by caribou than are lower heights. Because of a tendency for more snow to accumulate beneath lower pipe, elevating pipelines higher than 1.5 m will decrease the risk of reduced clearance between the snow surface and the bottom of pipelines, especially in severe winters.⁶ The paper essentially coincided with the adoption of a minimum 2.1 meter elevation (7 feet) in the 2005 Alpine Satellites Record of Decision which has become the industry and agency standard for pipelines on the Slope, for example at Point Thomson (2012) and elsewhere. The Project will use the current 2.1m standard and does not propose to locate the PTTL or other pipelines near roads.	CO25-11
§ 4.6.1.3 pp. 4-296 to 4-302	The DEIS's discussion of potential impacts suggests that the Project would impact three of the Arctic caribou herds. However, the Project is only within the range of one herd. Additionally, the seasonal description is difficult to understand and makes it sound as if the Project would impact caribou in all seasons. The final EIS should be revised for consistency with Table 4.6.1, which properly addresses potential seasonal impacts.	CO25-12
§ 4.6.1.3 pp. 4-296 to 4-302	The DEIS's discussion of caribou does not mention caribou habituation to infrastructure or facilities, which has been well documented. There is substantial evidence suggesting caribou habituate to certain aspects of oilfields and oilfield infrastructure. An exception being cow caribou with very young (<3-week-old) calves:	CO25-13

CO25-12 See the responses to comments SA2-170 through SA2-174 and SA2-187.

CO25-13 As documented in the BLM (2006) literature review, studies have shown that individual animals may react differently to infrastructure after repeated exposure, but the effect (e.g., habituation) is difficult to measure.

⁴ To this point, the study states: "Most of the pipelines in the Prudhoe Bay Oilfield were constructed in the 1970s before the minimum height of 1.5 m (5 ft) above ground level was stipulated by the State of Alaska. Older pipelines elevated 0.4-1.1 m above ground level in the Prudhoe Bay field constitute barriers to caribou crossings in the absence of crossing ramps." Lawhead *et al.*, 2006 (BLM 2006), Abstract at i.

⁵ "Research in northern Alaska oilfields has confirmed that the most important factor affecting caribou crossing success at pipeline/road corridors is traffic on nearby roads. The combination of high-traffic roads (15 or more vehicles/hr) adjacent to pipelines elevated to the minimum height of 1.5 m created a synergistic effect that reduced caribou crossing success. Hence, to be as effective as possible, elevated pipelines should be separated at or beyond the recommended minimum distances of 122-152 m (400-500 ft) from roads." Lawhead *et al.*, 2006 (BLM 2006), at 12.

⁶ Lawhead *et al.*, 2006 (BLM 2006), Abstract at i.

CO25 – Alaska Oil and Gas Association (cont'd)

	...Researchers who have worked on the North Slope for the past several decades have noted that CAH caribou appear to have habituated to certain aspects of the infrastructure (Murphy and Lawhead 2000), as evidenced by the lower frequency now of strong instantaneous reactions to overhead pipe than was observed in the first few years of development in the Kuparuk field (Curatolo et al. 1982; Curatolo and Murphy 1983, 1986). Lawhead <i>et al.</i>, 2006 (BLM 2006), page 15; <i>see also</i> Attachment C at 22-23 (Conclusion) ("Hence, the presence of the PTEP appears to have resulted in small changes in caribou behavior and movements, but had little effect on broad-scale caribou distribution or access to coastal insect-relief habitat. These findings are consistent with previous research, supporting the conclusion that properly elevated roadless pipelines allow crossings and habitat access during summer by caribou that have habituated to oilfield infrastructure." (emphasis added). The DEIS needs to further expand upon and reference the decades of research which document caribou habituation to oilfield infrastructure.	CO25-13		
§ 4.6.1.3 pp. 4-296 to 4-302	The Arctic Plain provides winter range caribou habitat but is not considered valuable or high use habitat. Very few caribou remain here in the winter. The majority of the herd migrates south into Brooks Range and foothills. For these reasons, the DEIS should conclude that the PTTL and GTP will have no impact to winter habitat.	CO25-14	CO25-14	See the updates to section 4.6.1.3 of the final EIS and the response to comment SA2-6
§ 4.6.1.3 pp. 4-296 to 4-302	The DEIS does not discuss the existing design and construction standards or operational controls for mitigating impacts to caribou. These measures are well understood, highly effective and feasible for a Project of this nature and should be discussed in detail here.	CO25-15	CO25-15	Section 4.6.1.3 of the final EIS provides our analysis of potential impacts on caribou and caribou habitat based on the construction, restoration, mitigation, and operation measures identified by AGDC.
§ 4.6.1.3 pp. 4-296 to 4-302	The final EIS should consider comments and testimony of Matt Cronin regarding BLM's Coastal Plain leasing EIS, much of which is relevant to this analysis of the Project. Mr. Cronin's testimony is provided as Attachment D to this comment letter.	CO25-16	CO25-16	We considered information provided in this reference in our analysis. See the updates to section 4.6.1.3 of the final EIS and the response to comment SA2-6.
§ 4.6.1.3 p. 4-297	In the Caribou subsection, the DEIS states: "Caribou studies on the North Slope indicate that oil and gas infrastructure could cause displacement from habitats between 0.6 mile and 3.7 miles for some calving caribou for a brief period each year (Cameron et al., 1992, Nellemann et al., 1996, Haskell et al., 2006)." These studies do not suggest a definitive displacement out to 3.7 miles, and in fact recent federal agency NEPA documents have only used a 2.5 mile distance to examine displacement, citing many of these same studies. AOGA recommends that FERC re-evaluate these citations in relation to a true displacement distance, and not just a study distance out to 3.7 miles (as was the case in the Cameron et., 1992 paper which FERC has misinterpreted). Please also see the comments of Matt Cronin regarding BLM's Coastal Plain leasing EIS, attached as Attachment D at pp. 1-2 and p. 6 (Section "Calving"), citing additional studies and showing that displacement is partial.	CO25-17	CO25-17	See the updates to section 4.6.1.3 of the final EIS.

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§ 4.8.1.1 p. 4-472 to 473	The DEIS's discussion of potential impacts on polar bears should be revised to reflect the oil and gas industry's decades of successful implementation on-the-ground programs that have well-documented, demonstrated success in protecting polar bears. A summary of those efforts can be found in AOGA's January 29, 2018 Comments for the Meeting of the Parties to the Agreement on the Conservation of Polar Bears, Fairbanks, Alaska, 2-4 February 2018, which are provided as Attachment E to this comment letter.	CO25-18	CO25-18	Comment noted.
§ 4.14.2.6 p. 4-717	FERC recommends that, prior to construction, AGDC file "the Project Local Subsistence Implementation Plan and a signed Conflict Avoidance Agreement prepared in coordination with NMFS and the AEWG." FERC cannot require and should not recommend that any person or company sign the Conflict Avoidance Agreement (CAA). The CAA is a product of negotiations between the Alaska Eskimo Whaling Commission and industry participants. The CAA involves multiple issues and is not negotiated or signed by NMFS. As stated above in the same section, AGDC has committed to requiring vessel operators to enter into negotiations with AEWG in order to implement elements of the agreement which minimize interference with bowhead whale subsistence hunt. The CAA is one potential way of addressing and resolving concerns about possible impacts on whaling, but it requires that multiple parties reach agreement on multiple issues, including issues outside the scope of government control. FERC should not presuppose that the parties involved will be able to reach agreement. This recommendation should be removed from the final EIS. However, mitigation can be addressed more generally by recommending adoption of accepted best practices to avoid or minimize impacts to subsistence.	CO25-19	CO25-19	Comment noted.
§ 4.14.3.1 p. 4-720	In the North Slope Region subsection, the DEIS states: "Residents rely on the predictable annual migration of caribou through traditional hunting areas; however, observed changes include herds using different migratory routes and caribou splitting up into smaller groups rather than traveling in large herds, which reduces chances for successful harvests. Residents noted that disturbances such as the physical presence of pipelines impede passage and/or change migration routes and contribute to shrinking caribou foraging area. Regulations regarding the use of access roads associated with new development impedes hunter access to caribou (Braund, 2017). Additionally, anthropogenic noise during subsistence harvest was noted as undesirable because some terrestrial, avian, and marine resources are sensitive to noise from aircraft and machinery." The citation for this paragraph is the Nuiqsut Caribou Subsistence Monitoring Project: Results of Year 8 Hunter Interviews and Household Harvest Surveys. This study does not conclude that "regulations regarding use of access roads associated with new development impedes hunter access to caribou." Table 19 of this report specifically shows that while regulations were cited as a type of Alpine related impacts in Year 1 and 2 of the study, the percent of respondents and observations reporting this impact had dropped to 0% in Years 6- 8. In the summary (page 44) of same report, it is noted that both four-wheeler and truck use increased in frequency of use, likely due to respondents' use of the new Spur Road constructed as part of the CD5 project efforts. It should be noted that the AKLNG facilities (including 1.0-mile-long PBTL and 62.5-mile-long PTTL) are not located in areas of high subsistence use for caribou.	CO25-20	CO25-20	Comment noted. Years 2, 3, 4, and 7 of this study also reported 0 percent of respondents impeded by access road regulations.

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§ 4.14.3.1 p. 4-721	In the North Slope Region Summary, the DEIS states: "West Dock is a known meeting point for whaling crews. Construction-related activities (modifications to West Dock and sealift deliveries) may limit or prohibit use of this area during the fall whaling season for up to 7 years." Cross Island is where Nuiqsut whaling crews conduct their subsistence hunt; West Dock is a privately owned facility for the purpose of supporting oil and gas operations. With the voluntary support of oil and gas industry members and signatories to the CAA, whaling crews may occasionally access West Dock for supplies. Whaling crew access to this private facility is done in cooperation and coordination with the West Dock owners and other industry users as part of voluntary mitigation. It is incorrect to refer to West Dock as a "known meeting point for whaling crews" and is not representative of the actual use by the whalers. Saying the modifications and sealifts may limit or prohibit use of the area for up to 7 years is excessive considering the voluntary mitigation agreed to by ADGC on following CAA requirements for vessel traffic.	CO25-21	CO25-21	Section 4.14.3.1 of the final EIS has been updated to address this comment.
§ 4.14.3.1 p. 4-724	In the Utqiagvik (Barrow) subsection, the DEIS states that subsistence users would be impacted because Project construction activities, including construction of the GTP, PTTL, and Mainline Pipeline, would affect resource availability through displacement of caribou, upland birds and non-salmon fish resources and habitat loss. In fact, the distance from Barrow to GTP, PTTL and Mainline pipeline makes it very improbable that subsistence users in Barrow will be impacted by displacement of resources and habitat nor will it cause an increase in cost and effort. Figure 4.14.3-2 shows that these onshore construction activities are not even close to Barrow subsistence use areas.	CO25-22	CO25-22	Section 4.14.3.1 of the final EIS has been updated to address this comment.
§ 4.14.3.1 p. 4-725	In the Utqiagvik (Barrow) subsection, the DEIS states: "The increased vessel traffic (maximum increase of 80 percent during the height of construction, as noted in section 4.12) and associated underwater noise could cause a change in the migratory behavior of the marine mammals, displacing them from Utqiagvik's traditional use areas. Additionally, the underwater noise could displace seal and Pacific walrus that could occur in vessel transit routes during the summer months; however, this impact would be minor due to the ephemeral nature of the vessels in transit. Construction-related activities (modifications to West Dock and sealift deliveries) could limit or prohibit use of this area during the fall whaling season for up to 7 years. Non-salmon fish would be temporarily affected by the modifications at West Dock, including changes to a fish passage area." During the Point Thomson drilling and construction phase (2009-2016), coastal barging of materials, equipment and supplies between West Dock and Point Thomson required between 20-90 barge loads annually. During 2013 and 2015, facility modules were transported by up to four large sealift barges through the Bering Sea and around Pt. Barrow to Point Thomson. All these activities occurred using effective mitigations, including communication protocols with whaling crews, coordination of vessel movements, and avoidance of active whaling areas, resulting in no impact to whaling or other marine subsistence activities for Utqiagvik, Nuiqsut or Kaktovik. The DEIS should recognize that effective mitigation measures exist and have been effectively applied to address concerns surrounding marine mammal subsistence.	CO25-23	CO25-23	Comment noted.

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§ 4.14.3.1 p. 4-725	In the Utqiagvik (Barrow) subsection, the DEIS states: "Winter construction of the GTP and PTTL would affect upland migratory bird harvest and would result in permanent habitat displacement for these avian resources. Construction impacts associated with the PTTL would occur in winter when fewer caribou are harvested. For the GTP and the elevated PTTL, disturbances to caribou habitat during Project operation would be long term. Mainline Facilities would be constructed within this summer and winter ranges. Since Project facilities would be within the caribou range, the Project could serve as a barrier to migration between habitat areas or movement to specialized habitats, such as access to calving range, during construction. Any disruption to migration could continue into Project operation due to the presence of the maintained right-of-way. We have recommended that AGDC conduct seasonal monitoring for a period of 3 years following the construction of the GTP and PTTL to track caribou herd movement and determine if Project infrastructure is creating a barrier to caribou movement, and to develop a plan to minimize or mitigate any identified issues with caribou movement related to the Project (see section 4.6.1)." It is unclear how winter construction at GTP and PTTL could impact Barrow's upland migratory bird harvest. Consistent with the statement from Kaktovik impact section, this section should state: "During project operations, impacts to the caribou subsistence use area would occur in a previously developed area with an existing aboveground pipeline and in an area of limited harvest activity. While impacts could include temporary disruptions to migrating caribou, a significant reduction in the availability of caribou during operation is not anticipated."	CO25-24	CO25-24	Comment noted.
§ 4.14.3.1 p. 4-726	In the Nuiqsut subsection, the DEIS incorrectly states: "In 1998, the BLM created the National Petroleum Reserve in response to interests in expanding oil and gas development, and Nuiqsut is situated within its boundaries." The NPR-A was not created in 1998. The NPR-A was created by President Warren G. Harding in 1923 as Naval Petroleum Reserve Number 4 during a time when the United States was converting its Navy to run on oil rather than coal. In 1976 the Naval Petroleum Reserves Production Act (NPRPA) renamed the reserve the "National Petroleum Reserve in Alaska" and transferred it from the Navy to the Department of the Interior.	CO25-25	CO25-25	Section 4.14.3.1 of the final EIS has been updated to address this comment.
§ 4.14.3.1 p. 4-730	In the Nuiqsut subsection, the DEIS states: "Winter construction of the GTP and PTTL would affect upland migratory bird harvest and would result in permanent habitat displacement for these avian resources." Nuiqsut bird harvesting area is not close to GTP and PTTL. GTP is located in the Prudhoe Bay Closed Area (see ADFG hunting regulations) and PTTL is even further west of area. In addition, the DEIS should reference Brown et al., 2016 Figure 7-22 for bird hunting and egg gathering area for Nuiqsut.	CO25-26	CO25-26	Comment noted.
§ 4.14.3.1 p. 4-731	In the Nuiqsut subsection, the DEIS states: "Nuiqsut subsistence users could experience impacts on caribou hunting west of the Project during operation; caribou harvests to the east previously declined because of existing oil and gas development. As previously discussed, we have recommended that AGDC conduct seasonal monitoring for a period of 3 years following the construction of the GTP and PTTL to track caribou herd movement and determine if Project infrastructure is creating a barrier to caribou movement (see section 4.6.1)." There are no data to support that caribou harvest amounts to the east have previously declined. The Nuiqsut Caribou Subsistence Monitoring Report Table 14	CO25-27	CO25-27	Comment noted.

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	shows that the Nuiqsut caribou harvest has remained strong (or improved) over all years that data is available (DEIS is citing Year 8 (Braund 2017), however Year 9 is available). The State of Alaska closed the Prudhoe Bay Area to hunting in the 1970s. While historic subsistence use area maps show that the area was used by Nuiqsut hunters, no data on the number of harvests in this area are available to AOGA's knowledge. As the community was re-established in 1973, post discovery of Prudhoe Bay, the more contemporary use of the area has been low. Consistent with the statement from Kaktovik impact section, this section should state: "During project operations, impacts to the caribou subsistence use area would occur in a previously developed area with an existing aboveground pipeline and in an area of limited harvest activity. While impacts could include temporary disruptions to migrating caribou, a significant reduction in the availability of caribou during operation is not anticipated."	CO25-27		
§ 4.14.3.1 p. 4-734	In the Kaktovik - Impacts on Subsistence subsection, the DEIS states: "Kaktovik is on Barter Island in the Beaufort Sea more than 100 miles east of the GTP and the Mainline Pipeline. The PTU is about 60 miles west of the community. The community's terrestrial subsistence use areas overlap with the Gas Treatment Facilities (including the PTTL) and Mainline Pipeline. The marine vessel transit route overlaps only the western limits of Kaktovik's marine mammal use area. Construction is anticipated to have a limited effect on resource availability as a result of displacement of resources and habitat loss. Increased cost and effort to harvest these resources is not anticipated during construction or operation because the Project is on the periphery of the subsistence use area with limited use by harvesters." Figure 4.14.3 -4 shows that Kaktovik's subsistence use area overlaps with the project area at GTP, PTTL and Mainland. Similar figures 4.14.3-2 for Barrow and 4.14.3 -3 for Nuiqsut indicated no overlap of subsistence use areas with the Project's on-shore components, yet the DEIS improperly concludes that impacts related to displacement, habitat loss, increase cost, etc., are greater. The conclusion for Nuiqsut and Barrow should be similar or indicate that there are fewer impacts than Kaktovik.	CO25-28	CO25-28	Comment noted.
§ 4.14.3.1 p. 4-735	In the Kaktovik - Impacts on Subsistence subsection, the DEIS states: "Caribou is one of the most important and intensively hunted resources by the residents of Kaktovik. The winter construction of the PTTL could temporarily disrupt winter subsistence harvests of caribou between October of Year 3 and December of Year 4 resulting in a temporary impact. However, primary use of this area occurs during the summer months; winter use of the area is limited. Therefore, a significant reduction in the availability of caribou during construction is not anticipated. As previously discussed, we have recommended that AGDC conduct seasonal monitoring for a period of 3 years following the construction of the GTP and PTTL to track caribou herd movement and determine if Project infrastructure is creating a barrier to caribou movement (see section 4.6.1). During Project operation, impacts on Kaktovik's caribou subsistence use area would occur in a previously developed area with an existing aboveground pipeline and in an area of limited harvest activity. While impacts could include temporary disruptions to migrating caribou, a significant reduction in the availability of caribou during operation is not anticipated " (emphasis added). It is not clear why the discussions of Nuiqsut and Barrow differ from the discussion of Kaktovik. The bolded text should apply to all three communities.	CO25-29	CO25-29	Comment noted.

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§ 4.14.4 p. 4-876	In the Conclusion subsection, the DEIS states: "Project construction and operation would result in temporary, long-term, and permanent effects on the abundance and availability of subsistence resources used by these communities. These Project effects would vary depending on construction timing, wildlife presence and migration, and community harvest strategies." This statement should be revised for clarity and to avoid generalizing regarding the overall conclusion.	CO25-30	CO25-30	Comment noted.
§ 4.14.4 p. 4-877	In the Conclusion subsection, the DEIS states: "Operational effects of linear infrastructure would be long term or permanent. The pipeline rights-of-way and access roads could alter caribou migration patterns, resulting in a reduction in caribou availability for the residents of Utqiagvik, Nuiqsut, and Anaktuvuk Pass." As discussed in the comments above, the conclusions for impacts to Utqiagvik and Nuiqsut should be similar to those for Kaktovik, and should not anticipate a reduction in caribou availability.	CO25-31	CO25-31	Comment noted.
§ 4.19.4.14 p. 4-1152	In the Subsistence subsection, the DEIS states: "Therefore, the Alaska LNG Project, in combination with other applicable projects, would result in moderate, albeit permanent cumulative impacts." This conclusion does not appear supported by the conclusions from "other applicable projects" and should be revised for content and clarity.	CO25-32	CO25-32	Comment noted.
§ 5.1.4 p. 5-16	In the Wetlands subsection, the DEIS states: "With the implementation of the Project construction and restoration plans and our recommendations, we conclude that temporary, short-term, and long-term impacts on wetlands would be less than significant. The substantial permanent loss of wetlands and wetland functions due to granular fill placement and the long recovery time for PFO wetland vegetation, however, would result in significant adverse impacts." These two sentences appear to contradict one another and should be revised for content and clarity.	CO25-33	CO25-33	Section 4.4.5 has been revised to address this comment.
§ 5.1.14 p. 5-36	The DEIS states that subsistence practices may be effected due to "temporary increased competition from non-local harvesters." This assumption is not supported in the DEIS and seems unlikely to occur.	CO25-34	CO25-34	Comment noted.

CO25 – Alaska Oil and Gas Association (cont'd)

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