BEFORE THE
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Alaska Gasline Development Corporation	)	Docket No: CP17-178-000

REQUEST FOR REHEARING OF ORDER GRANTING AUTHORIZATION OF THE ALASKA LNG PROJECT

Pursuant to section 19(a) of the Natural Gas Act (NGA), 15 U.S.C. § 717r(a), and rule 713 of the Federal Energy Regulatory Commission (FERC)'s Rules of Practice and Procedure, 18 C.F.R. § 385.713, the Center for Biological Diversity and Earthjustice on behalf of Chickaloon Village Traditional Council, Northern Alaska Environmental Center, and Sierra Club ("Intervenors") request rehearing of FERC's Order Granting Authorization Under Section 3 of the Natural Gas Act, 171 FERC ¶ 61,134 (Order) in the above-captioned matter. In addition, Intervenors request a stay of this Order pursuant to 5 U.S.C. § 705.

As FERC recognized in its Order, the scale of the Alaska LNG Project is unprecedented, and FERC has never before approved a project of this size under section 3 of the NGA. Order ¶ 9. Yet FERC approved the project without properly considering whether it is in the public interest and without properly examining its numerous harmful environmental impacts. Accordingly, Intervenors request that FERC withdraw its deficient, unlawful Order authorizing the Alaska LNG Project and final environmental impact statement (FEIS), and redo the environmental analysis and public interest analysis in a manner that complies with FERC's obligations under the National Environmental Policy Act, 42 U.S.C. § 4321, *et seq.*, NGA, 15 U.S.C. § 717, *et seq.*, and other statutes.

FERC granted the Intervenors' respective motions to intervene in these dockets, as affirmed in the Order. Order ¶ 6. As such, each Intervenor is a "party" to this proceeding, 18

C.F.R. § 385.214(c), with standing to file this request for rehearing. This request for rehearing is timely, having been filed within 30 days of FERC's Order.

TABLE OF CONTENTS

STATEMENT OF ISSUES

In issuing its Order, FERC violated the NGA, Administrative Procedure Act (APA), National Environmental Policy Act (NEPA), and other applicable statutes, in the following ways:

I. FERC's determination that the Alaska LNG Project is in the public interest, as required by section 3 of the NGA, *see* 15 U.S.C. § 717b(a), is arbitrary and capricious. 5 U.S.C. § 706.

A. FERC failed to consider properly numerous harms, including how the Alaska LNG Project will exacerbate the climate crisis and further threaten imperiled species.

B. FERC failed to consider properly the enormous costs of the Alaska LNG Project.

C. FERC failed to consider properly necessary and appropriate mitigation measures.

D. FERC failed to explain how the alleged benefits of the Alaska LNG Project outweigh its environmental harms. *See Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co*., 463 U.S. 29, 43 (1983) (agencies must "articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made").

II. FERC's issuance of a conditional authorization is unlawful.

A. Issuing the Order before completing consultation under the Endangered Species Act (ESA) violates NEPA and the ESA. 42 U.S.C. § 4332(2)(c); 16 U.S.C. § 1536(a)(2).

B. Issuing the Order before completing required cultural resources studies, mitigation plans, and other evaluations precluded FERC from fully disclosing the impacts of the project, violating NEPA, 42 U.S.C. § 4332, *et seq*, and rendering its public interest determination under the NGA arbitrary and capricious.

C. Issuing the Order prior to receiving Alaska's required Clean Water Act (CWA) certification, the final pipeline route, and other analyses violates NEPA and the CWA. 42 U.S.C. § 4332(2)(c); 33 U.S.C. § 1341(a)(1).

III. FERC's approval process was improper because FERC's DEIS was so incomplete as to preclude meaningful public participation in violation of NEPA and the APA. *See* 40 C.F.R. § 1502.9(a).

IV. FERC's statement of purpose and need fails to comply with NEPA. *See* 40 C.F.R. § 1502.13; *Carmel-by-the-Sea v. U.S. Dep't of Transp*., 123 F.3d 1142, 1155 (9th Cir. 1997) (an agency cannot define a project's purpose and need in unreasonably narrow terms).

V. FERC failed to consider a reasonable range of alternatives to the Alaska LNG Project, including a renewable energy alternative and alternatives that would reduce the overall scope of the project, and it failed to examine properly the impacts of the alternatives it did consider, including a true no action alternative, in violation of NEPA and the APA. *See* 40 C.F.R. § 1502.14; 42 U.S.C. § 4332(2)(c).

VI. FERC failed to take a hard look at the numerous impacts of the Alaska LNG Project in violation of NEPA and the APA. *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

A. FERC failed to take a hard look at the impacts of greenhouse gas emissions. *See Sierra Club v. FERC*, 867 F.3d 1357, 1374 (D.C. Cir. 2017).

B. FERC failed to take a hard look at the risks of leaks, spills, and other accidents. *See Robertson*, 490 U.S. at 350.

C. FERC failed to take a hard look at the impacts on wildlife. *W. Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 493-94 (9th Cir. 2011).

D. FERC failed to take a hard look at the impacts of air pollution. *S. Fork Band Council of W. Shoshone of Nev. v. U.S. Dep't of Interior*, 588 F.3d 718, 726 (9th Cir. 2009).

E. FERC failed to take a hard look at the impacts of ice roads and gravel roads. *See Robertson*, 490 U.S. at 350 (describing the hard look requirement generally).

F. FERC failed to take a hard look at impacts to wetlands. *Id.*

G. FERC failed to take a hard look at the impacts of hydrostatic test water discharges. *Id*.

VII. FERC's analysis of mitigation measures was improper. *See S. Fork Band Council*, 588 F.3d at 727.

VIII. FERC failed to consider environmental justice impacts properly. *See* Executive Order 12898, 59 Fed. Reg. 7629 (Feb. 16, 1994).

IX. FERC failed to consider the cumulative impacts properly. *See Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt*., 387 F.3d 989, 994 (9th Cir. 2004).

X. The biological opinions on the Alaska LNG Project issued after FERC's authorization are unlawful, and FERC's reliance on them violates the ESA. *See Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 698 F.3d 1101, 1127-28 (9th Cir. 2012)

ARGUMENT

I. FERC's determination that the Alaska LNG Project is in the public interest is arbitrary and capricious.

Pursuant to section 3(a) of the NGA and subsequent delegation orders, FERC must determine whether the siting, construction, and operation of Alaska Gasline Development Corporation's (AGDC) proposed terminal facilities are "consistent with the public interest." 15 U.S.C. §§ 717b(a), (e); DOE Delegation Order No. 00-004.00A at 1.21(A) (effective May 16, 2006).[1] This same provision applies to the Department of Energy / Fossil Energy's (DOE/FE) review of AGDC's related application for export authorization. *Id.* Courts, FERC, and DOE/FE have all interpreted the "public interest" at issue in these provisions as including environmental impacts.

Both the Supreme Court and the D.C. Circuit Court of Appeals have indicated that these NGA provisions encompass environmental concerns. While the public interest inquiry is rooted in the NGA's "fundamental purpose [of] assur[ing] the public a reliable supply of gas at reasonable prices," *United Gas Pipe Line Co v. McCombs*, 442 U.S. 529, 536 (1979), the NGA

[1] The statute vests authority in the "Federal Power Commission," which has been dissolved. DOE/FE has been delegated the former Federal Power Commission's authority to authorize natural gas exports. DOE Redelegation Order No. 00-002.04E at 1.3(A) (Apr. 29, 2011). FERC has separately been delegated authority regarding the permitting, siting, construction and operation of export facilities. DOE Delegation Order No. 00-004.00A; *see also* Executive Orders 12038, 43 Fed. Reg. 4957 (Feb. 3, 1978), & 10485, 18 Fed. Reg. 5397 (Sept. 9, 1953) (vesting any executive authority to allow construction of export facility in the Federal Power Commission and its successors).

also grants FERC and DOE/FE "authority to consider conservation, environmental, and antitrust questions." *NAACP v. Fed. Power Comm'n*, 425 U.S. 662, 670 n.6; *id.* at 666 n.4 (1976) (citing 15 U.S.C. § 717b as an example of a public interest provision in the NGA that encompasses environmental concerns). In interpreting an analogous public interest provision applicable to hydroelectric power and dams, the Supreme Court has explained that the public interest determination "can be made only after an exploration of all issues relevant to the 'public interest,' including future power demand and supply, alternate sources of power, the public interest in preserving reaches of wild rivers and wilderness areas, the preservation of anadromous fish for commercial and recreational purposes, and the protection of wildlife." *Udall v. Fed. Power Comm'n*, 387 U.S. 428, 450 (1967) (interpreting section 7(b) of the Federal Water Power Act of 1920, as amended by the Federal Power Act, 49 Stat. 842, 16 U.S.C. § 800(b)). Other courts have applied this *Udall* holding to the NGA. *See, e.g., N. Nat. Gas Co. v. Fed. Power Comm'n*, 399 F.2d 953, 973 (D.C. Cir. 1968) (interpreting NGA section 7).[2]

Contrary to the Supreme Court's holding that a public interest determination under the NGA encompasses all issues relevant to the 'public interest, FERC refused to consider all the implications of this project that affect the public.

A. FERC failed to consider properly numerous harms, including how the Alaska LNG Project will exacerbate the climate crisis and further threaten imperiled species.

FERC's determination that the Alaska LNG Project is consistent with the public interest is arbitrary because that determination is based on an entirely inadequate record. As detailed throughout this request, FERC issued its authorization for the project prematurely without adequately completing required consultations and processes, and without an adequate analysis of

[2] Further support for the inclusion of environmental factors in the public interest analysis is provided by NEPA, which declares that all federal agencies must seek to protect the environment and avoid "undesirable and unintended consequences." 42 U.S.C. § 4331(b)(3).

the project's direct, indirect, and cumulative environmental impacts. Particularly egregious were FERC's failure to consider in its public interest analysis how the Alaska LNG Project will exacerbate the climate crisis and its decision to authorize the project before completing consultation to determine the project's impacts on imperiled species.

FERC's public interest analysis excluded any consideration of the project's impacts on gas production, development and use, stating that such impacts relate to DOE's decisions and not to FERC's. Order ¶ 15. FERC's conclusion rests on its misinterpretation of the D.C. Circuit's opinion in *Sierra Club v. FERC*, 827 F.3d 36 (D.C. Cir. 2016) ("*Freeport*"), which considered the scope of FERC's NEPA review. As discussed at length below, the environmental harms of inducing additional gas production, development and use are related to this project for the purposes of NEPA review under *Freeport* and its lineage. Regardless, *Freeport* did not address the Commission's public interest analysis under the NGA. The NGA requires "an exploration of *all* issues relevant to the 'public interest.'" *Udall v. Fed. Power Comm'n*, 387 U.S. at 450 (emphasis added). Indeed, the public interest standard requires the Commission to consider *future* needs and alternatives, even if not contemplated by an applicant's proposal. *See, e.g.*, *City of Pittsburgh v. Fed. Power Comm'n*, 237 F.2d 741, 753 (D.C. Cir. 1956) (finding exclusion of evidence relating to future expansion and the refusal to consider future expansion in determining the public convenience was erroneous). Those issues include harms to Alaskan ecosystems and the climate that would foreseeably follow commercializing new gas resources on the North Slope by bringing that gas to market for the first time through an 800-mile pipeline.[3] FERC's failure to consider these issues was arbitrary and capricious.

[3] *See infra* pp. 19-137.

In addition, FERC did not meaningfully consider the direct greenhouse gas emissions of the project. FERC's public interest analysis mentions environmental impacts for which the FEIS made a finding of significance, but does not mention the project's climate impacts, a category for which FERC did not assess the significance. Thus, FERC arbitrarily ignored the project's greenhouse gas emissions when it made its public interest determination, even though these emissions are relevant to the public interest. Commissioner Glick is correct that "[c]laiming that a project's environmental impacts are acceptable while at the same time refusing to assess the significance of the project's impact on the most important environmental issue of our time is not reasoned decisionmaking." Dissent of Commissioner Glick ¶ 2; *see also id*. at ¶ 8 ("The Commission is simultaneously stating that it cannot assess the significance of the Project's impact on climate change while concluding that all environmental impacts associated with the Project are acceptable and not inconsistent with the public interest.") (footnote omitted). The Commission's approach would allow it to ignore the climate impacts of any project, no matter how detrimental to the public interest. *Id.* at ¶ 9. Here, the project's direct emissions alone are equivalent to about 3.5 million vehicles. *Id.* at ¶ 10. FERC acknowledges that these emissions "would increase the atmospheric concentration of [greenhouse gase]s in combination with past and future emissions from all other sources and contribute incrementally to future climate change impacts." *Id.* at ¶ 10. The NGA requires a consideration of the project's impacts on climate change because it is an issue relevant to the public interest. *Udall v. Fed. Power Comm'n*, 387 U.S. at 450 (noting that a public interest determination "can be made only after an exploration of all issues relevant to the public interest"). FERC's failure to do so is arbitrary and capricious. Dissent of Commissioner Glick ¶ 9 ("A public interest determination that systematically

excludes the most important environmental consideration of our time is contrary to law, arbitrary and capricious, and not the product of reasoned decisionmaking.").

FERC's public interest finding was also arbitrary and premature with respect to endangered species. FERC staff conducted a biological assessment that found the project is likely to have adverse effects on six endangered species. Order ¶ 135. Then, FERC requested that federal agencies with expertise on endangered species—the United States Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS)—assess in biological opinions whether the project would likely adversely affect or jeopardize the continued existence of a listed species or result in the destruction or degradation of designated critical habitat. Order ¶ 136. Yet, FERC determined that the project was not inconsistent with the public interest without waiting for the opinions of the expert agencies. Without complete and accurate information regarding the project's impacts on endangered species, the Commission lacked substantial evidence upon which it could determine that impacts on these species would be appropriately mitigated or the public interest would be protected. FERC failed to perform its affirmative duty to seek and consider those facts. *Confederated Tribes & Bands of Yakima Indian Nation v. FERC*, 746 F.2d 466, 471-72 (9th Cir. 1984) (holding "[t]he Commission has an affirmative duty to inquire into and consider all relevant facts" before issuing a license under section 10 of the Federal Power Act, and failed to perform that duty when it lacked NMFS' primary report on a project's effects on wildlife) (quoting Scenic Hudson Preservation Conference v. FPC, 354 F.2d 608, 620 (2d Cir.1965)); *see also Sierra Club v. U.S. Army Corps of Engineers*, 701 F.2d 1011, 1031-32 (2d Cir. 1983) (agency's consideration of whether a project was in the public interest was arbitrary and capricious where staff decided to approve a permit without waiting for a report on the project's impacts on wildlife that was being prepared

in consultation with other expert agencies, among other failures). Information from the expert agencies was especially crucial for this project because of its unprecedented size and FERC's lack of familiarity with conditions in Alaska. Dissent of Commissioner Glick ¶ 14.

B. FERC failed to consider properly the enormous costs of the Alaska LNG Project.

FERC declined to address public comments pertaining to the Alaska LNG Project's distributional equity, costs, and economic viability, on the rationale that in doing so it might duplicate or contradict decisions made by the Secretary of Energy in the Department's 2015 order conditionally authorizing the Alaska LNG Project to export gas. Order ¶ 15. However, FERC must consider the economic consequences of project construction, regardless of the gas' ultimate destination. *See Office of Consumers' Counsel v. FERC,* 655 F.2d 1132, 1147 (D.C. Cir. 1980) ("FERC's authority to consider all factors bearing on the public interest when issuing certificates means authority to look into those factors which reasonably relate to the purposes for which FERC was given certification authority."). Declining to consider this important aspect of the problem was arbitrary. *State Farm*, 463 U.S. at 43.

It was inappropriate for FERC to ignore requests that it consider the distributional equity of the project's impacts, as a project can produce a net positive economic impact by bringing great benefits to a few corporate backers even if it makes most people worse off.[4] FERC also inappropriately failed to consider that the economics of the project itself are flawed,[5] and that FERC's approval encouraging AGDC to invest additional public money in the project with little

[4] Sierra Club's Motion to Intervene and Protest at 5.
[5] T. Daiss, *$65 Billion Alaska LNG Project Crashes and Burns*, FORBES (Sept. 16, 2016); E. Brehmer, *AGDC president outlines path forward; China deal is dead,* ALASKA JOURNAL OF COMMERCE (July 24, 2019); E. Brehmer, *Gasline agency laying off 60 percent of staff,* ALASKA JOURNAL OF COMMERCE (July 10, 2019); B. Mazurek, *LNG Project is MIA,* PENINSULA CLARION (Mar. 30, 2019).

hope of return is not in the public interest.[6] The project is not viable in its current state; AGDC needs to cut costs to make it attractive to investors,[7] potentially requiring design changes that could make the project even more harmful than it is in its current form. Moreover, as FERC has previously recognized, a "project's economic viability is the most significant determinant of the licensee's ability to pay for the required environmental measures," *Menominee Co. N.E.W. Hydro, Inc.*, 74 FERC ¶ 61,023 at 61,068 (1996), such that the economic concerns about this project that FERC refused to consider are inextricable from the public interest analysis.

C. FERC failed to consider properly necessary and appropriate mitigation measures.

As detailed *infra* pp. 42-116, FERC's analysis and conclusions regarding ways to mitigate impacts from the Alaska LNG Project are arbitrary and violate NEPA and the ESA because FERC 1) does not adequately detail the project's impacts, 2) does not take a hard look at available mitigation methods, and 3) relies on unspecified and unenforceable mitigation methods. For the same reasons, FERC has not satisfied its obligation to consider mitigation in a non-arbitrary manner under the NGA. The NGA authorizes the Commission to approve applications for liquefied natural gas (LNG) terminals "in whole or part, with such modifications and upon such terms and conditions as the Commission find necessary or appropriate." 15 U.S.C. § 717b(e)(3)(A). FERC has long recognized its authority to modify projects to reduce their environmental impact, and indeed has exercised that authority here, albeit inadequately. Order ¶ 250. The Commission was obligated to do so in an informed and non-arbitrary manner.

[6] FERC's record for the Alaska LNG Project already contains the majority of the non-legal source materials cited in this request. Intervenors therefore only attach non-legal source materials they could not confirm are in the record.

[7] T. Bradner, *Alaska pursuing LNG project approvals, still waiting on investors*, S&P GLOBAL (Jan. 27, 2020) ("If we can get costs down to where we have a viable project, we should have no problems attracting investors.").

Commissioner McNamee incorrectly concludes the Environmental Protection Agency's (EPA) authority to regulate air pollution under the Clean Air Act prevents FERC from conditioning project approval on mitigation measures to address greenhouse gas pollution. Concurrence of Commissioner McNamee ¶¶ 18-27. This conclusion has no basis in the NGA. FERC's authority to modify applications as it deems "necessary or appropriate" contains no exclusion for greenhouse gases. The latter-enacted Clean Air Act did not repeal or amend FERC's authority under the NGA to modify applications as necessary or appropriate to reduce air pollution. *See United States Ass'n of Reptile Keepers, Inc. v. Zinke*, 852 F.3d 1131, 1141 (D.C. Cir. 2017) (repeals by implication not recognized "unless there is a 'positive repugnancy' between the provisions of the preexisting and newly enacted statutes, as well as language manifesting Congress's 'considered determination' of the ostensible change").

Commissioner McNamee cites the Supreme Court's inapposite decision in *American Electric Power Company v. Connecticut*, 564 U.S. 410 (2011) ("*AEP*"). In that case, the Court held that the Clean Air Act "displace[d] any federal common-law right to seek abatement of carbon-dioxide emissions from fossil-fuel fired powerplants." *Id.* at 424. All that is required for federal legislation to displace federal common law—ending "an unusual exercise of law-making by federal courts"—is to "speak[] directly" to the question at issue. *Id.* at 423-24. *AEP* is irrelevant here because FERC authority to modify applications is explicit in federal statute. Moreover, Commissioner McNamee appears to recognize FERC's authority to address issues that other statutes "speak to." *See* Concurrence of Commissioner McNamee ¶ 26 (approving of mitigation for wetlands impacts and discussing statutes that address wetlands). FERC should reject Commissioner McNamee's attempts to create novel barriers to protecting the public from climate-destabilizing emissions.

D. FERC failed to explain how the alleged benefits of the Alaska LNG Project outweigh its environmental harms.

For the limited set of issues that it does consider, FERC's perfunctory analysis is inadequate. As Commissioner Glick explains:

> [T]he Commission's public interest analysis does not adequately wrestle with the Project's adverse environmental impacts. The Commission finds that the Project will have a significant and adverse effect on several endangered species, the Central Artic [sic] Herd of caribou, permafrost, forest, and air quality for certain nationally designated areas. Although the Commission discloses these adverse impacts, at no point does it explain how it considered them in making its public interest determination or why it finds that the Project satisfies the public interest standard notwithstanding those substantial impacts. Simply asserting that the Project is not inconsistent with the public interest after dismissively classifying all significant adverse impacts as "acceptable" without explanation is not reasoned decisionmaking.

Dissent of Commissioner Glick ¶ 3 (footnote omitted). Indeed, FERC does not specify what project benefits it weighed against environmental harms or explain its framework for balancing any factor against another. Order ¶ 251. Thus, FERC has failed to "articulate a satisfactory explanation for its action including 'a rational connection between the facts found and the choice made.'" *State Farm*, 463 U.S. at 43 (quoting *Burlington Truck Lines v. United States*, 371 U.S. 156, 168 (1962)).

II. FERC's issuance of a conditional authorization is unlawful.

FERC's issuance of an authorization so heavily conditioned on the outcome of analyses not yet completed is arbitrary and capricious. Doing so not only violates several federal laws, it renders FERC's public interest finding arbitrary and wholly unreasonable. FERC's issuance of its public interest finding before the completion of ESA consultation is especially glaring considering the massive, unprecedented scale of the project and its myriad harmful effects on numerous ESA-listed species. As Commissioner Glick highlighted, the fact that FERC prohibited AGDC from beginning construction until the ESA consultations are complete "is not

an excuse for making a public interest determination without them." Dissent of Commissioner Glick ¶ 13. FERC's issuance of the authorization without the requisite CWA certification, the completion of cultural and archaeological surveys, and updated river crossing studies is also improper.[8]

E. Issuing the Order before completing ESA consultation violates NEPA and the ESA.

The ESA is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation" and embodies Congress's "plain intent" to "halt and reverse the trend toward species extinction, whatever the cost." *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180, 184 (1978). Specifically, Congress enacted the ESA "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved" and "to provide a program for the conservation of such endangered species and threatened species." 16 U.S.C. § 1531(b); *see also Gifford Pinchot Task Force v. U.S. Fish & Wildlife Serv.*, 378 F.3d 1059, 1070 (9th Cir. 2004) (the ESA seeks "not merely to forestall the extinction of species (i.e., promote a species [sic] survival), but to allow a species to recover to the point where it may be delisted").

Federal agencies play the central role in species protection under the Act. Section 7, described as the "heart of the ESA," *Karuk Tribe of Cal. v. U.S. Forest Serv.*, 681 F.3d 1006,

[8] Intervenors are aware of the court decisions cited in FERC's Order regarding FERC's issuance of conditional approvals. *See* Order ¶ 137, n. 228. Intervenors believe those cases were wrongly decided on this issue, and in any event have no relevance here given the unprecedented scale of the Alaska LNG Project, its unique challenges given the Arctic environment and harsh conditions in Cook Inlet, and the clear directive from Congress and the Supreme Court that "[section] 7 of the ESA reveals an explicit congressional decision to require agencies to afford first priority to the declared national policy of saving endangered species. The pointed omission of the type of qualifying language previously included in endangered species legislation reveals a conscious decision by Congress to give endangered species priority over the 'primary missions' of federal agencies. *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 185 (1978).

1019 (9th Cir. 2012) (quoting *Kraayenbrink*, 632 F.3d at 495), contains both substantive and procedural provisions with which all federal agencies must comply. *Forest Guardians v. Johanns*, 450 F.3d 455, 457 (9th Cir. 2006).

Substantively, section 7(a)(2) requires that "[e]ach Federal agency shall . . . insure that any action authorized, funded, or carried out by such agency. . . is not likely to jeopardize the continued existence of any endangered species or threatened species" or adversely modify their designated critical habitat. *Karuk Tribe*, 681 F.3d at 1020 (quoting 16 U.S.C. § 1536(a)(2)). "Action[s]" are broadly defined to include "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies." 50 C.F.R. § 402.02.

To meet these substantive obligations, the ESA and its implementing regulations have several procedural requirements. Specifically, the ESA requires each agency contemplating action, referred to as the "action agency," to "consult" with FWS or NMFS (collectively, "the Services") to obtain the Services' expert opinion on species impacts. 16 U.S.C § 1536(a)(2). Under these procedural obligations, the action agency "shall . . . request" information from the Services regarding whether any listed species "may be present" in the area, and if so, the action agency must prepare a "biological assessment" or engage in "informal consultation" with the Services to determine whether listed species will be adversely affected by the proposed action. *Id.* § 1536(c); 50 C.F.R. §§ 402.12(c), (d), 402.13(a). If the biological assessment or informal consultation concludes that a proposed action "may affect" any listed species or critical habitat, the agency must typically engage in formal consultation with the Services. 50 C.F.R. § 402.14(a). The "may affect" standard is a low one: "[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character, triggers the formal consultation requirement." *Kraayenbrink*, 632 F.3d at 496 (alteration in original) (citation omitted).

Formal consultation results in a biological opinion from the Services that determines if the action is likely to jeopardize the species; if so, the opinion may specify mitigation measures that will avoid jeopardy and allow the agency to proceed with the action. 16 U.S.C. § 1536(b)(3)(A). Formal consultation is not required only if the action agency determines through a biological assessment or informal consultation that its action is "not likely to adversely affect" any listed species *and* the Services issue a written concurrence with that determination. 50 C.F.R. § 402.14(b). If the Services disagree that the agency action is not likely to adversely affect the protected species, formal consultation *must* occur. *Id.* § 402.14(a).

Fulfillment of each stage of this process is the only means by which an agency can ensure that it satisfies its substantive duty to prevent jeopardy under section 7(a)(2). *See, e.g., Thomas v. Peterson*, 753 F.2d 754, 764 (9th Cir. 1985) ("[T]he strict substantive provisions of the ESA justify *more* stringent enforcement of its procedural requirements [than NEPA], because the procedural requirements are designed to ensure compliance with the substantive provisions."). As the Ninth Circuit Court of Appeals has held, "[s]ection 7 imposes on all agencies a duty to consult with [the Services] *before* engaging in any discretionary action that may affect a listed species or critical habitat." *Karuk Tribe,* 681 F.3d at 1020 (emphasis added); *see also Conner v. Burford*, 848 F.2d 1441, 1455 (9th Cir. 1988) (rejecting agency's invitation "to carve out a judicial exception to ESA's clear mandate that a comprehensive biological opinion . . . be completed before initiation of the agency action"); 50 C.F.R. § 402.14(a) ("Each Federal agency shall review its action at the earliest possible time to determine whether any action may affect listed species or critical habitat."). As such, "post-hoc assessments" do not satisfy the procedural consultation mandates. *Nat. Res. Def. Council v. Houston,* 146 F.3d 1118, 1129 (9th Cir. 1998).

FERC's issuance of the Order before ESA consultation is complete violates FERC's procedural obligations and its substantive duty to ensure against jeopardy to all ESA-listed species that may be affected by the Alaska LNG Project, including the Steller's eider, spectacled eider, polar bear, Northern sea otter Southwest Alaska distinct population segment, bearded seal, ringed seal, Cook Inlet beluga whale, humpback whale, bowhead whale, North Pacific right whale, Chinook salmon, steelhead trout, and others. *See* FEIS, App. O at O-28 to O-29, O-146 to O-147 (listing species in the action area). Had FERC consulted before issuing the Order, the Services "would have had more flexibility to make, and [FERC] to implement, suggested modifications." *Houston*, 146 F.3d at 1129. FERC's failure to do so means it does not have such flexibility. Its failure to consult before issuing its Order violates the ESA.

Additionally, by issuing its Order before completing consultation with the Services, there is no way for FERC to know whether the Alaska LNG Project will jeopardize endangered species or adversely modify their critical habitat. Thus, FERC cannot properly analyze or disclose the true impacts of the Alaska LNG Project as required by NEPA. *See Kraayenbrink*, 632 F.3d at 493-94 (agencies must take a hard look at impacts of an action on wildlife). Nor can FERC properly determine whether the project is in the public interest under the NGA. While FERC may not need to have perfect information before making its public interest determination, FERC's Order "stretches that principle past all reasonable limits in concluding that it can determine the public interest without meaningful input from the resource agencies about its impacts on . . . endangered species." Dissent of Commissioner Glick ¶ 13, n. 34.

The Services have now issued their biological opinions (shortly before the deadline for this rehearing request.) *See infra* pp. 122-37. However, initial review shows that they are so deficient as to be facially invalid, precluding FERC's reliance on them. *Id.* Had FERC waited to

review these opinions before acting, it could have identified and addressed the deficiencies with the Services before issuing an unlawful authorization premised upon them.

F. Issuing the Order before completing cultural and historic resources surveys and studies violates NEPA and renders FERC's NGA public interest determination arbitrary.

FERC's issuance of the Order prior to the completion of the National Historic Preservation Act (NHPA) process, 54 U.S.C. § 306108, and absent adequate consultation with tribes was also improper. For example, the NHPA is designed to ensure that federal decisionmakers thoroughly evaluate and address the impacts of their proposed actions on historic properties prior to taking final action. Under the Act, the process to take into account such impacts (also known as a "section 106 Process") requires federal agencies to identify and disclose historic properties within affected areas; evaluate the potential adverse effects of the federal undertaking to the historic properties; and seek ways to avoid, minimize, or mitigate any adverse effects to the historic properties *before* granting permits or approvals for a project. 36 C.F.R. §§ 800.4-800.6. The section 106 process also requires the action agency to seek and consider the views of the State Historic Preservation Officer and the public regarding the undertaking and its effects on historic properties. *Id*. § 800.2(c), (d).

FERC acknowledges that the Alaska LNG Project could potentially affect historic properties, including "prehistoric or historic archaeological sites, districts, buildings, structures, or objects, as well as locations with traditional value to federally recognized tribes, Alaska Native Claims Settlement Act village and regional corporations," among others. Order ¶ 186. FERC further acknowledges that while AGDC has "conducted research, consulted with state and federal agencies, and performed field surveys . . . to identify archaeological and architectural resources," such surveys "are not yet completed." *Id.* ¶ 186; *see also id.* ¶ 192 ("AGDC has not completed cultural resources surveys and/or National Register of Historic Places evaluations.").

Absent complete surveys and consultation with affected tribes, the State Historic Preservation Office, and other interested parties, FERC does not know, and has not meaningfully disclosed, what the impact on cultural resources will be. Nor does FERC know the extent to which these impacts can be mitigated or not, or how that mitigation has been, or will be, coordinated with the affected parties. By issuing an approval, conditional or otherwise, prior to completion of this analysis and public disclosure of these impacts, FERC violated both NEPA and the NHPA.

FERC appears to believe such an approach is appropriate because it has required AGDC to complete surveys and develop treatment and avoidance plans prior to construction. *See* Order ¶ 192. FERC is wrong. Such an approach conflates FERC's legal obligation to mitigate impacts to historic and cultural resources with its separate requirements to take a hard look at what such impacts will be and disclose those impacts to the public. *See Robertson*, 490 U.S. at 350 (NEPA requires FERC to take a "hard look" at impacts) (citation omitted); 36 C.F.R. §§ 800.4-800.6 (NHPA process); 40 C.F.R. §§ 1502.14(f) (NEPA mitigation requirement); *id.* § 1502.16(h) (same). Moreover, FERC assumed the effectiveness of mitigation of impacts to cultural resources when it approved the project. It was arbitrary for FERC to do so prior to the completion of surveys, development of mitigation plans, and confirmation that mitigation would indeed be effective. *See S. Fork Band Council*, 588 F.3d at 727 ("An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective. . . A mitigation discussion without at least *some* evaluation of effectiveness is useless in making that determination.").

G. Issuing the Order prior to receiving Alaska's required CWA certification, the final pipeline route, and other analyses violates NEPA and the CWA.

The plain language of the CWA provides that, in the case of "[a]ny applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters . . . [n]o license or permit shall be granted until the certification required by [section 401 of the CWA] . . . has been obtained. 33 U.S.C. § 1341(a)(1). In other words, FERC cannot issue an order authorizing the Alaska LNG Project until the State of Alaska has issued a section 401 certification. The State has not done so. FERC's issuance of the Order is therefore improper and a serious error of law.

A state's CWA section 401 authority is not limited to the simple approval or denial of a project. States have broad authority under section 401(d) to attach conditions to the project, and FERC has never contended, nor could it contend, that these conditions become terms incorporated into the letter order authorizing construction, rather than into the Certificate Order itself. *See* 33 U.S.C. § 1341(d) ("Any certification provided under this section shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant . . . will comply with any applicable [state and federal requirements,] and shall become a condition on any Federal license or permit subject to the provisions of this section."). Treating the order actually authorizing construction as the point at which states exercise their section 401 authority unlawfully narrows and postpones states' rights to participate in the analysis, direct the applicant and federal agencies toward less harmful alternatives, and impose meaningful conditions on proposed projects.

Additionally, FERC issued the Order despite the lack of numerous studies necessary to both understand the project's impact on the public interest and disclose that impact as NEPA requires. Instead, FERC simply conditioned its authorization on the requirement that AGDC

submit such studies prior to construction. For example, FERC conditioned the authorization on receipt of documentation confirming that the various tidal levels at the product loading facility do not exceed relevant safety parameters and an engineering report proving that the product loading facility "can withstand the impact from sea ice that historically occurs at the Nikiski site location and that the product loading facility structural load conditions consider sea ice and ice buildup." Order App. ¶¶ 35, 36. FERC also conditioned the authorization on a "site-specific geotechnical investigation to ensure proper foundation design of the Prudhoe Bay Treatment Plant" that demonstrates the facility can withstand "frost heave, thermokarsting, subsidence, load-bearing settlement, and concrete material degradation that are projected to occur over the life of the facilities." *Id.* ¶ 40. The Order also requires AGDC to submit numerous final design details for the pipe-in-pipe systems at the Liquefaction Facilities, *id.* ¶ 87, and FERC issued the Order despite the lack of an updated feasibility study for crossing the Deshka River. *See* Order ¶ 53; Order App. ¶ 18.

FERC cannot properly examine or disclose the numerous potential impacts of the project as NEPA requires without such studies and safety verifications being completed, nor can it properly determine whether the Alaska LNG Project is in the public interest as the NGA requires.

III. FERC's approval process was improper because the record was so incomplete as to preclude meaningful public participation.

FERC's approval process for the Alaska LNG Project was unlawful because FERC failed to comply with NEPA's requirement for robust public participation. Under NEPA, an environmental impact statement (EIS) must contain a "reasonably thorough discussion of the significant aspects of the probable environmental consequences" and must have the "form, content and preparation" to foster the primary functions of the law. *California v. Block*, 690 F.2d

753, 761 (9th Cir. 1982) (citations omitted). The Supreme Court outlined the two primary functions of NEPA in *Robertson*, 490 U.S. 332. First, NEPA "ensures that . . . [an] agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts." *Id.* at 349. Second, NEPA "guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision." *Id.* In other words, the "[p]ublication of an EIS, both in draft and final form, also serves a larger informational role. It gives the public the assurance that the agency 'has indeed considered environmental concerns in its decisionmaking process,'. . . and, perhaps more significantly, provides a springboard for public comment." *Id*. (citations omitted). Accordingly, "[w]hen relevant information 'is not available during the [EIS] process and is not available to the public for comment . . . the [EIS] process cannot serve its larger informational role, and the public is deprived of [its] opportunity to play a role in the decision-making process." *N.C. Wildlife Fed'n v. N.C. Dep't of Transp.*, 677 F.3d 596, 604-05 (4th Cir. 2012) (quoting *N. Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2011)).

Because missing information undermines NEPA's primary purposes, NEPA regulations dictate how the agency must address missing information. *See Mont. Wilderness Ass'n v. McAllister*, 666 F.3d 549, 559-561 (9th Cir. 2011). "[T]he agency shall include the information in the environmental impact statement," if the missing information is (1) "relevant to reasonably foreseeable significant adverse impacts;" (2) "essential to a reasoned choice among alternatives;" and (3) "the overall costs of obtaining it are not exorbitant." 40 C.F.R § 1502.22(a). The Council on Environmental Quality (CEQ) has explained that "[t]he evaluation of impacts under § 1502.22 is an integral part of an EIS and should be treated in the same manner as those impacts

normally analyzed in an EIS." 51 Fed. Reg. 15,618, 15,621 (Apr. 25, 1986). If the information cannot be obtained, agencies must note that the information is incomplete or unavailable, explain its relevance, summarize existing credible scientific evidence, and evaluate impacts based on theoretical approaches or research methods generally accepted in the scientific community. 40 C.F.R. § 1502.22(b).

Agencies are not allowed to neglect their duty to address missing information by changing an analysis after the draft environmental impact statement (DEIS) comment period has closed. Courts have explained that, when performing an EIS, an agency "should take to the public the full facts in its draft EIS and not change them after the comment period unless, of course, the project itself is changed." *Burkey v. Ellis*, 483 F. Supp. 897, 915 (N.D. Ala. 1979). NEPA "expressly places the burden of compiling information on the agency" so that the public and other governmental bodies can evaluate and critique the agency's action. *Grazing Fields Farm v. Goldschmidt*, 626 F.2d 1068, 1073 (1st Cir. 1980). "The now traditional avenue of independent comment on decision-making by public interest organizations would be narrowed if interested parties did not have presented in the EIS the analysis and data supporting an agency's decision." *Id*. Such information must be included in the DEIS, as opposed to being supplied in the FEIS following public comments, because "the purpose of the final EIS is to respond to comments rather than to complete the environmental analysis (which should have been completed before the draft was released)." *Habitat Educ. Ctr. v. U.S. Forest Serv*., 680 F. Supp. 2d 996, 1005 (E.D. Wis. 2010), *aff'd sub nom. Habitat Educ. Ctr., Inc. v. U.S. Forest Serv*., 673 F.3d 518 (7th Cir. 2012).

FERC's DEIS for the Alaska LNG Project was devoid of so much relevant environmental information that it undermined the primary functions of NEPA. Both the DEIS and FEIS read

like a request for information from AGDC rather than the in-depth, comprehensive environmental analysis required by law. Earthjustice, the Center for Biological Diversity, Trustees for Alaska, and cooperating federal agencies pointed to example after example where missing information precluded meaningful evaluation and comment. Missing information included the following:

- Pile driving, trenching, dredging, screeding and anchor handling impacts to marine mammals. Earthjustice *et al.*, Letter to K. Bose, FERC, Re: Comments on Alaska LNG Project Draft Environmental Impact Statement at 7-8 (Oct. 3, 2019) (Earthjustice Comments).

- Magnitude, duration, and context of impacts to subsistence. *Id*. at 21 (citing DEIS at 4-715).

- Feasibility, potential impacts, and mitigation of trenchless crossings. *Id*. at 32 (citing DEIS at 5-51).

- Potential hydrologic hazards at Suneva Lake. *Id.* (citing DEIS at 5-50).

- Engineering and construction information about the Mainline Pipeline. *Id.* (citing DEIS at 5-11).

- An accurate construction schedule. *Id.* (citing DEIS at 5-37).

- A comprehensive table of waterbodies that would be crossed or affected by all the project components. *Id.* at 32 (citing DEIS at 5-7).

- Fish surveys for waterbodies where fish survey data are not available within 290 feet of pipeline crossing locations and documenting Anadromous Waters Catalogue streams. *Id.* (citing DEIS at 5-23).

- An accounting of essential fish habitat and waterbodies with anadromous fish, including Pacific salmon species, identified during the fish surveys. *Id.*

- Site-specific waterbody crossing plans and proposed mitigation measures that address, as applicable, channel diversion and aerial span crossings as well as navigational issues for major waterbody crossings. *Id.* (citing DEIS at 5-8).

- Acreages of designated critical habitat for polar bears that would be affected by project facilities. *Id.* (citing DEIS at 4-473).

- An analysis of the potential hydrologic hazards and how the Mainline Pipeline would be engineered and constructed (*i.e.*, using deep burial, channel protection, heavy wall pipe, etc.) in the area through Suneva Canyon. *Id.* (citing DEIS at 5-3).

- A revised directional micro-tunneling (DMT) plan that addresses potential impacts and mitigation specific to each DMT crossing. *Id.* (citing DEIS at 5-3).

- A final Revegetation Plan. *Id.* at 33 (citing DEIS at Appendix D for FERC requirements regarding revegetation plan).

- Accurate wetlands data. *Id.* (citing DEIS at 5-14).

- Accurate shutdown zones for levels A and B harassment. *Id.* (citing DEIS at 5-54 to 55).

- An updated gravel sourcing plan that "identifies the material volumes to be acquired from each material site," including "measures for testing material sites for potential acid rock drainage and presence of contaminants . . . that may not be suitable fill material for construction of granular fill pads and access roads." Center for Biological Diversity, Letter to FERC, Re: Comments on the Draft Environmental Impact Statement on the Alaska LNG Project at 8 (Oct. 3, 2019) (Center for Biological Diversity Comments) (citing DEIS at 4-20).

- A modified pipeline operation and maintenance plan that specifies the locations of the facilities, equipment, and monitoring procedures. *Id.* (citing DEIS at 4-43).

- An updated blasting plan, including an updated list of minimum filing requirements for site-specific blasting plans and details on ice content and permafrost distribution needed to properly design each blast in permafrost. *Id.* at 9 (citing DEIS at 4-111).

- A final water use plan, including final water volumes, source and discharge locations, and proposed treatments. *Id.* (citing DEIS at 4-210).

- Information regarding whether AGDC will conduct maintenance mowing or clearing during the migratory bird nesting season. *Id.* (citing DEIS at 4-326).

- Additional fish surveys because AGDC did not conduct any for 51 percent of the waterbodies that would be crossed by the Mainline Pipeline and 69 percent of the waterbodies that would be crossed by the Point Thomson Unit Gas Transmission Line (PTTL). *Id.* (citing DEIS at 4-389).

- A fisheries conservation plan. *Id.* (citing DEIS at 4-407).

- An accounting of all public water wells within 500 feet of the project. Trustees for Alaska on behalf of National Parks Conservation Ass'n, Letter to K. Bose, FERC, Re: Comments on the Draft Environmental Impact Statement for the Alaska LNG Project at 16 (Oct. 3, 2019) (Trustees for Alaska Comments) (citing DEIS at 4-126, 127).

- Updated noise impact calculations to reflect use of the DMT crossing method. *Id.* at 17 (citing DEIS at 4-947).

FERC almost certainly could have obtained this information, and indeed, is requiring AGDC to provide much of it prior to construction or at some future date. However, even if FERC could not obtain some of the missing information, its omission during the EIS process violates NEPA because FERC failed to adequately explain its relevance, summarize existing credible scientific evidence, and evaluate impacts based on theoretical approaches or research methods generally accepted in the scientific community. 40 C.F.R. § 1502.22(b).

The information missing from the air emissions analysis in the DEIS was particularly egregious. Without the following information, informed decision-making and informed public participation was impossible:

- Annual emission calculations for operation of the Liquefaction Facilities that reflect the anticipated maximum and average number of LNG carriers and support vessels. Earthjustice Comments at 32 (citing DEIS at 5-23); Trustees for Alaska Comments at 16 (citing DEIS at 4-926); J. Nogi, EPA, Letter to K. Bose, FERC, Re: Alaska LNG Project Draft Environmental Impact Statement at 21 (Oct. 2, 2019) (EPA Comments).

- An accurate construction schedule and associated revised construction emission calculations for criteria pollutants, hazardous air pollutants, and greenhouse gas emissions and a revised general conformity analysis to reflect the revised construction schedule. Earthjustice Comments at 32 (citing DEIS at 5-37); Center for Biological Diversity Comments at 9 (citing DEIS at 4-898); Trustees for Alaska Comments at 16 (citing DEIS at 4-897); EPA Comments at 20.

- Revised and cumulative air dispersion modeling to include all air emission generating sources associated with the project as well as revised impact tables for National and Alaska Ambient Air Quality Standards (NAAQS/AAAQS), Prevention of Significant Deterioration (PSD) Increment, and all air quality-related values. Trustees for Alaska Comments at 16 (citing DEIS at 4-907).

- Accurate modeling for years when construction, start-up, and operational activities occur simultaneously. *Id.* at 17.

- A full assessment of visibility and ecosystem impacts from operation, including impacts of the compressor or heater stations on nearby Class I and Sensitive Class II areas. *Id.*

- Modeling for flaring activities at the gas treatment plant and Liquefaction Facilities outside of "normal operations." *Id.*; FEIS, App. CC at CC-273 (Department of Interior comments and FERC response, FA3-77).

- Photo simulations for four Known Observation Points and updated information, including proposed mitigation for visual impacts. Trustees for Alaska Comments at 17 (citing DEIS at 4-569).

- Updated compressor station modeling and visibility and acid deposition analyses, which were discussed in the DEIS, but not available for review. *Id.*

- A full evaluation of PSD increment compliance. *Id.* at 6; *see also* EPA comments at 20 (requesting an explanation of why the limited analysis performed is sufficient to demonstrate that the gas treatment plant will likely not cause or contribute to a violation of a PSD increment).

- A Construction Emission Control Plan, Fugitive Dust Control Plan, Open Burning Control Plan, and Class I and Sensitive Class II Mitigation Plan. Trustees for Alaska Comments at 16-17.

FERC openly admitted to the shortcomings with the air emissions analysis in the DEIS. Throughout the document FERC asked AGDC to submit missing information "[p]rior to the end of the draft EIS comment period" or "prior to construction of final design." *See e.g.*, DEIS at 5-50 to 5-63 (identifying more than *twenty-five* (25) categories of additional information the applicant could submit any time before the end of the comment period, as well as other information that FERC decided could be submitted even later). Yet FERC refused to recirculate the DEIS to incorporate new information or extend the comment period. AGDC submitted a supplemental filing on September 18, 2019, just two weeks before the comment deadline, with 1,928 new pages of analysis to address the revised construction schedule. *See* Trustees for Alaska Williams Expert Report at 14 (Sept. 30, 2019). As a result of this supplemental filing, the FEIS recognized that simultaneous construction, startup, and operation of the Liquefaction Facilities "could lead to short-term air quality impacts" such that a monitoring plan would need

to be implemented to monitor air quality and manage exceedances. FEIS, App. CC at CC-583; *see also* Order ¶ 210.

FERC also relied on a late-disclosed air quality-related values analysis, updating the FEIS to reveal that the cumulative air quality emissions "exceed screening-level visibility extinction thresholds and sulfur and nitrogen deposition thresholds at some Class I or Class II nationally designated protected areas, which could have a significant impact on these areas." FEIS at 4-1210. This was a reversal from the DEIS, which stated only that "[e]missions from the aboveground facilities, including the [gas treatment plant], compressor stations, heater station, and Liquefaction Facilities, *could* cause exceedances of visibility thresholds and sulfur or nitrogen deposition thresholds at some Class I and Class II nationally designated protected area." DEIS at 4-939. EPA filed supplemental comments after the comment deadline to address this critical late finding, noting that it "indicates the need for additional mitigation to minimize potential significant impacts on regional haze and acid deposition to nearby Class I and Class II federally managed areas associated with the gas treatment plant, mainline pipeline, and liquefaction facilities." A. Baca, EPA, Letter to K. Bose, FERC, Re: Alaska LNG Project FEIS at 2 (Apr. 13, 2020) (EPA Supplemental Comments). A full evaluation of PSD increment compliance and sulfur and acid deposition impacts still has not been provided. *See infra* pp. 93-100.

As EPA's response demonstrates, the air quality-related analysis and its disclosure of impacts to Class I and Class II protected areas is critical to identifying foreseeable significant adverse impacts and mitigating them if necessary. Yet FERC failed to disclose this and other missing information in the DEIS. FERC erred by not waiting until it had gathered that information and then issuing a revised DEIS with a new public comment period. Without a

meaningful opportunity to review both late-submitted information and crucial information that remains missing, FERC could not evaluate how the Alaska LNG Project will affect the environment or how its impacts will be mitigated. Simply adding missing information to the FEIS also deprived the public of its opportunity to meaningfully participate in the process. *Half Moon Bay Fishermans' Mktg. Ass'n v. Carlucci*, 857 F.2d 505, 508 (9th Cir. 1988) (*citing California v. Block*, 690 F.2d at 770-71) ("It is only at the stage when the draft EIS is circulated that the public and outside agencies have the opportunity to evaluate and comment on the proposal . . . No such right exists upon issuance of a final EIS."); 40 C.F.R. § 1500.1(b). FERC must therefore prepare a revised DEIS and release it for public comment. 40 C.F.R. § 1502.9(a), (c).

IV. FERC's statement of purpose and need violates NEPA and the APA.

FERC's stated purpose and need fails to comply with NEPA. NEPA's implementing regulations provide that an environmental document must "specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." 40 C.F.R. § 1502.13.

This purpose and need inquiry is crucial for a sufficient environmental analysis because "[t]he stated goal of a project necessarily dictates the range of 'reasonable' alternatives." *Carmel-by-the-Sea*, 123 F.3d at 1155. As courts have explained, "[a]n agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action, and the EIS would become a foreordained formality." *Friends of Se's Future v. Morrison*, 153 F.3d 1059, 1066 (9th Cir. 1998) (quoting *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991)). In other words, "an agency cannot define its

objectives in unreasonably narrow terms" without violating NEPA. *Carmel-by-the-Sea*, 123 F.3d at 1155; *see also Colo. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1175 (10th Cir. 1999) ("the statements of purpose and need drafted to guide the environmental review process" may not be "unreasonably narrow").

FERC attempts to absolve itself of its legal duty to conduct a proper purpose and need inquiry by stating that "FERC does not plan, design, build, or operate natural gas infrastructure," but instead, as "an independent regulatory commission, FERC reviews proposals developed by other entities." FEIS at 1-3. As such, FERC claims that "the Project proponent is the source for identifying the purpose for developing and constructing the Project." *Id.* While FERC does not have to ignore the applicant's purpose, it cannot blindly defer to the applicant. *See Nat'l Parks Conservation Ass'n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1071 (9th Cir. 2010) ("[A]gencies must look hard at the factors relevant to definition of purpose.")

Yet that is just what FERC has done here. In its FEIS, FERC defines the purpose and need as "to commercialize the natural gas resources of Alaska's North Slope ("North Slope") by converting the existing natural gas supply to liquefied natural gas (LNG) for export and use within the State of Alaska." FEIS at ES-1. By defining the purpose and need so narrowly, FERC necessarily considered an unreasonably narrow range of reasonable alternatives, eliminating a renewable energy alternative or other alternative that would reduce the climate impacts of the project, as described more fully *infra* pp. 30-42. Moreover, the narrow purpose and need violates NEPA's requirement that FERC treat the applicant's interests as distinct from the agency's. *See, e.g., Envtl. Law & Policy Ctr. v. U.S. Nuclear Regulatory Comm'n*, 470 F.3d 676, 683 (7th Cir. 2006) ("NEPA requires an agency to exercise a degree of skepticism in dealing with self-serving statements from a prime beneficiary of the project and to look at the

general goal of the project rather than only those alternatives by which a particular applicant can reach its own specific goals.") (citations omitted).

FERC's inadequate purpose and need statement stems, at least in part, from its narrow view of its duties under the NGA, as discussed *supra* pp. 3-11. The NGA charges FERC with ensuring that the Alaska LNG Project is "consistent with the public interest." 15 U.S.C. § 717b(a). Accordingly, FERC should have focused its purpose and need inquiry on objectives that comport with this statutory obligation, balancing the alleged benefits of the project against its numerous environmental costs, rather than basing the inquiry solely on the applicant's desire. *See Citizens Against Burlington*, 938 F.2d at 196 ("agencies must look hard at the factors relevant to the definition of purpose," including the views of Congress in authorizing the agency to act, and define goals accordingly"); *see also League of Wilderness Defs. v. U.S. Forest Serv.*, 689 F.3d 1060, 1070 (9th Cir. 2012). This requirement rings particularly true here, because the Alaska LNG Project "is unprecedented in both scale and scope, stretching 800 miles across unique and fragile ecosystem of Northern Alaska," and "[m]any of the challenges presented by this project are first-of-their-kind." Dissent of Commissioner Glick ¶ 5 (citing Order ¶ 9).

For example, in its application, AGDC suggested that the Alaska LNG Project is needed because it would "satisfy [the] growing demand for natural gas" and that the costs of shipping the gas to foreign markets "will be very competitive." Application at 14. Yet when defining the purpose and need of the project, FERC failed to consider evidence demonstrating the exact opposite—namely, reports indicating that 1) the world is awash in an oversupply of LNG and

demand is significantly reduced, and 2) the Alaska LNG Project is "one of the least competitive" LNG projects in the world.[9]

FERC's purpose and need statement demonstrates that FERC had already decided to allow the Alaska LNG Project and that its entire analysis was framed in a way to support that pre-determined outcome. *Cf.* 40 C.F.R. § 1500.1(a) (NEPA evaluation must take place "*before* decisions are made and *before* actions are taken.") (emphasis added); *id.* § 1502.5 (NEPA analysis must "not be used to rationalize or justify decisions already made"). FERC's backwards approach reflects a fundamental misunderstanding of its legal obligations at the expense of the environment, climate stability, and the people who depend on both.

V. FERC failed to consider a reasonable range of alternatives to the Alaska LNG Project, including a true no action alternative.

NEPA requires agencies to "[r]igorously explore and objectively evaluate all reasonable alternatives," including "the alternative of no action." 40 C.F.R. § 1502.14. The alternatives analysis "is the heart" of an EIS, and "should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." *Id.*

NEPA requires a "detailed statement" of "alternatives to the proposed action." 42 U.S.C. § 4332(2)(c). The purpose of this section is "to insist that no major federal project should be undertaken without intense consideration of other more ecologically sound courses of action, including shelving the entire project, or of accomplishing the same result by entirely different

[9] *See* S. Stapczzynski *et al.*, *Global LNG Poised for Terrible Year as Supply Floods Market*, BLOOMBERG (Jan. 23, 2020); I. S. Simonellimar, *The LNG Saga*, ALASKA BUSINESS MAGAZINE (Mar. 16, 2019); Wood Mackenzie, *Alaska LNG Competitiveness Study* at 24 (Aug. 2016) ; I. Slay, *Giant LNG Projects Face Coronavirus Death or Delay*, OILPRICE (Mar. 17, 2020) (noting the glut in LNG supply and the instabilities in the LNG market given trade issues and coronavirus).

means." *Envtl. Def. Fund v. U.S. Corps of Eng'rs*, 492 F.2d 1123, 1135 (5th Cir. 1974); *see also Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1114 (D.C. Cir. 1971) (the alternatives requirement "seeks to ensure that each agency decision maker has before him and takes into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact").

A. FERC failed to undertake a robust analysis of reasonable alternatives.

An EIS must "[i]nclude reasonable alternatives not within the jurisdiction of the lead agency," that may nonetheless meet the overall objectives of the action while ameliorating environmental impacts. 40 C.F.R. § 1502.14. "The existence of a viable but unexamined alternative renders an [EIS] inadequate." *Alaska Wilderness Recreation & Tourism Ass'n v. Morrison*, 67 F.3d 723, 729 (9th Cir. 1995) (citations omitted). That is the case here.

FERC used three criteria to guide its alternatives analysis: (1) whether an alternative meets the stated purpose of the project; (2) whether an alternative is technically and economically feasible and practical; and (3) whether an alternative offers a "significant environmental advantage" over the proposed action. FEIS at 3-1. With respect to the first criteria, it is inappropriate to tie the range of alternatives to FERC's defined purpose, because as discussed *supra* pp. 27-30, its purpose and need statement is overly restrictive and fundamentally flawed. The FEIS is premised on the false assertion that AGDC's commercial objectives are the *only* objectives FERC must consider. This necessarily and arbitrarily limited the alternatives to those that involve the construction of a major LNG facility and gas pipeline.

1. *FERC failed to undertake a robust analysis of reasonable alternatives*.

Setting aside the project's flawed purpose and need, FERC repeatedly failed to explain its decisions related to "technical[] and economical[] feasibil[ity] and practical[ity]" and "significant

environmental advantage." FEIS at 3-1. Adequate explanation is required to establish a "rational connection between the facts found and the choice made." *State Farm*, 463 U.S. at 43 (1983) (quoting *Burlington Truck Lines*, 371 U.S. at 168).

The FEIS fails to consider an adequate range of alternatives and improperly dismisses a number of alternatives. For example, the FEIS states that the use of one of the proposed LNG terminals in British Columbia would require 400 additional miles of pipeline, which would add about 6,452 acres of land disturbance. FEIS at 3-5. Without any detailed analysis, the FEIS simply concludes that neither this nor any of the other existing or proposed west coast LNG export facilities "would offer a significant environmental advantage." *Id.* FERC failed to support this conclusion by assessing the impacts of those alternatives and weighing them against the environmental advantages of avoiding the construction of a new export terminal in Cook Inlet.

Similarly, when evaluating route alternatives and road alternatives, FERC dismissed alternatives with little justification and without a robust evaluation comparing conversion of land use; impacts to wetlands; visual impacts; emissions and noise; species and federal lands impacts; and other relevant environmental effects. In response to comments on particular alternatives, FERC provided some quantification to justify assumptions—*e.g.*, evaluating wetlands conversion for the Fairbanks Alternative and air emissions consequences for access roads alternatives—but this ad hoc approach is still inappropriate to meet NEPA's requirements. FERC is required to provide critical information about alternatives early enough for the public to review and comment on that information. *See, e.g., Wilderness Watch v. Mainella*, 375 F.3d 1085, 1096 (11th Cir. 2004) ("Permitting an agency to avoid a NEPA violation through a

subsequent, conclusory statement that it would not have reached a different result even with the proper analysis would significantly undermine the statutory scheme.").

In addition, FERC should have presented information relevant to all alternatives in order to differentiate them. *See* 40 C.F.R. § 1502.14. FERC made no attempt to compare greenhouse gas emissions under each alternative or assess the difference in climate impacts among those alternatives. Any change in upstream and downstream greenhouse gas emissions can and should be evaluated for each of the various reasonable alternatives (including the proposed project, a project with reduced capacity, a project with conditions such as operational limits, a non-pipeline export alternative, and the no action alternative). Relatedly, FERC failed to compare the direct and indirect air emissions of alternatives and associated PSD increment violations. *See* Earthjustice comments at 23; Trustees for Alaska comments at 14. This task cannot be put off until the air emissions permitting process, as that process will consider only the emissions associated with the preferred alternative.

FERC also failed to directly assess the practicability of the proposed action, and therefore, it cannot support any decision by the Army Corps of Engineers to issue a permit under CWA section 404. If the FEIS is to serve that purpose, FERC must assess whether the proposed project, and each of the alternatives, are reasonable and practicable. *See* 40 C.F.R. § 230.10(a). As FERC recognized, "[t]he term practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics, considering the overall purpose of the Project." FEIS at 1-6. Yet FERC failed to properly examine the practicability of the project. Such failure is especially glaring given that many past attempts to build a gas pipeline in Alaska failed due to the economic constraints, and the project relies on the development of offshore gas fields to generate sufficient quantities of gas over the 30-year period.

Not only did FERC fail to analyze alternatives in the DEIS or FEIS appropriately, it also arbitrarily ignored alternatives that would address some of the project's worst impacts. For example, FERC eliminated without adequate explanation options that would have reduced climate impacts. Electric-driven compressors were rejected as an alternative to gas-fired compressors with an explanation that the electricity would likely be generated by older coal and oil-fired power plants, which emit more pollutants. FEIS at 3-33. FERC asserts that even if the power plants were converted, "energy losses during electricity transmission from the power plant to the compressor stations would require more power to be generated relative to on-site gas-fired turbines, with associated air quality impacts," *id.*, and the transmission lines would create additional habitat disturbance. Yet the agency fails to assess whether the gains in reduced greenhouse gas emissions might outweigh the energy loss and habitat disturbance caused by using transmission lines. In addition, the assumption that electricity would be generated by coal- and oil-fired power plants is incongruous with one of the primary purposes of the project, which is to develop gas in Alaska. Options to control emissions were also wholly ignored, including subjecting the Liquefaction Facility to continuous use of the thermal oxidizer to control emissions; limiting use of heaters at the gas treatment plant; dust suppression practices on unpaved roads; and requirements for diesel vehicles to use diesel particulate filter technology. Trustees for Alaska Comments at 15.

Under NEPA, agencies must discuss "[e]nergy requirements and conservation potential of various alternatives and mitigation measures," 40 C.F.R. § 1502.16(e), and this discussion is required even when a particular technique offers only a partial solution to the problem. *See Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 235 F. Supp. 2d 1143, 1154-55 (W.D. Wash. 2002) (citing *Nat. Res. Def. Council, Inc. v. Morton*, 458 F.2d 827, 836 (D.C. Cir. 1972)). By

disregarding options and design features that would reduce the project's greenhouse gas emissions, FERC violated NEPA's command to consider reasonable alternatives.

FERC also arbitrarily failed to consider several other reasonable alternatives. The action alternatives FERC examined consider only use of existing facilities or alternative locations for various project components, such as a different pipeline route or different LNG facility location. FERC failed to examine alternatives that would reduce the overall project activity and thus lessen overall environmental impacts. FERC dismissed alternatives that would reduce the amount of LNG to be exported, the amount of gas to be processed into LNG, and the number and timing of trips LNG tankers could take each year. This violates NEPA. As courts have explained, FERC must "give proper consideration to logical alternatives which might serve the public interest *better* than any of the projects outlined in the applications." *N. Nat. Gas Co.*, 399 F.2d at 973 (emphasis added); *see also N.M. ex rel. Richardson v. U.S. Bureau of Land Mgmt.*, 565 F.3d 683, 710–11 (10th Cir. 2009) (holding an agency's alternatives analysis improper because it failed to examine an alternative that would have reduced the amount of oil and gas development allowed under a land management plan); *W. Watersheds Proj. v. Abbey*, 719 F.3d 1035, 1051 (9th Cir. 2013) (questioning "how an agency can make an informed decision on a project's environmental impacts when each alternative considered would authorize the same underlying action"); *Klamath-Siskiyou Wildlands Ctr. v. U.S. Forest Serv.*, 373 F.Supp.2d 1069, 1088–89 (E.D. Cal. 2004) (holding the agency did not take a hard look at reasonable alternatives when it "dismissed out of hand any proposal which would have reduced the amount of timber harvest.").

The FEIS acknowledges project-related noise and ship strikes could impact marine mammals, and it suggests that reduced vessel speed can decrease the risk of ship strikes and

reduce noise impacts, FEIS at 4-385, 4-393, but the FEIS fails to examine an alternative that would require vessels associated with the project to slow to 10 knots or less to reduce impacts to endangered whales and other marine life, *cf.*, 50 C.F.R. § 224.105 (requiring ships 65 feet in length and longer to slow to 10 knots or less in certain areas at certain times of year to protect North Atlantic right whales), or require project-related ships to avoid traveling through critical habitat for North Pacific right whales.[10] The FEIS also has no alternatives that would otherwise reduce the impacts to marine mammals from construction and operation of the project in Cook Inlet. For example, the FEIS fails to consider an alternative that would prohibit pile driving, pipe laying, and trenching during times when beluga whales aggregate near the Material Offloading Facility (MOF) area or pipeline corridor; prohibit activities at night when it is much harder for observers to see marine mammals; or require additional protected species observers or improved passive acoustic monitoring and thermal imaging technologies to increase the chances of observation at night. Center for Biological Diversity Comments at 66.

The fact that other agencies have jurisdiction over marine mammal management, or jurisdiction over the resources implicated by other possible alternatives, does not excuse FERC's failure to consider such alternatives. NEPA's implementing regulations specify that agencies shall "include reasonable alternatives not within the jurisdiction of the lead agency." 40 C.F.R. § 1502.14(c); *see also Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 814 (9th Cir. 1999) (Forest Service was required to consider purchasing lands as alternative to land exchange, even though "it was not clear that the funds would be available for such a purpose" and the agency had not requested the funds); *Morton*, 458 F.2d at 834–37 (alternative sources of

[10] *See* FERC minutes, Meeting between FERC and NMFS, Re: Discuss application filed with FERC and upcoming activities at 2 (July 27, 2017) (noting NMFS's concerns about vessel travel through North Atlantic right whale critical habitat).

energy had to be considered, despite federal legislation indicating an urgent need for offshore leasing and mandating import quotas; Department of the Interior had to consider reasonable alternatives to offshore oil lease that would reduce or eliminate the need for offshore exploration, such as increased nuclear energy development and changing gas pricing, even though the alternatives would require Congressional action).

2. *FERC must fully and meaningfully consider an alternative that would avoid the project's projected greenhouse gas emissions and other pollution.*

FERC should have considered reasonable alternatives that would fulfill the project's goal of producing energy without a massive new fossil fuel project. To meet commitments of the Paris Climate Accord and preserve a livable planet, the United States must transition away from fossil fuel production to 100 percent clean energy. The United States has committed to the Paris Climate Accord's target of holding long-term global average temperatures "to well below 2°C above pre-industrial levels" and to pursuing efforts to "limit the temperature increase to 1.5°C above pre-industrial levels."[11] Recent reports published by the United Nations Environment Programme emphasize the need for urgent action to meet these targets.[12] According to the reports, to limit global warming to 1.5°C, countries must cut emissions by at least 7.6 percent per year over the next decade, for a total emissions reduction of 55 percent between 2020 and 2030. The United States is on course to extract an amount of fossil fuels that will make it impossible to

[11] United Nations Framework Convention on Climate Change, Conference of the Parties, Nov. 30-Dec. 11, 2015, Adoption of the Paris Agreement Art. 2, U.N. Doc. FCCC/CP/2015/L.9 (December 12, 2015) ("Paris Agreement"). The United States signed the Paris Agreement on April 22, 2016 as a legally binding instrument through executive agreement, and the treaty entered into force on November 4, 2016.

[12] United Nations Environment Programme, *Emissions Gap Report 2019* at 25-26 (2019); United Nations Environment Programme *et al*., *The Production Gap: The discrepancy between countries' planned fossil fuel production and global production levels consistent with limiting warming to 1.5°C or 2°C* at 4, 14-17 (2019) (Production Gap Report).

meet a 1.5°C or even 2°C target. As the world's largest oil and gas producer and second largest coal producer,[13] the United States is a primary contributor to dangerous over-production of fossil fuels, with current policies projected to lead to a 30% increase in oil and gas production by 2030.[14] An analysis of United States fossil fuel resources demonstrates that the potential carbon emissions from already leased fossil fuel resources *on federal lands alone* would essentially exhaust the remaining United States carbon budget consistent with the 1.5°C target.[15] There is broad scientific consensus that a rapid phase-out of fossil fuels is necessary to avoid devastating climate damages.[16] There is no room in global carbon budgets to lock in decades worth of fossil fuel extraction with this project.[17]

During the scoping process, commenters urged FERC to consider renewable energy and conservation alternatives. *See* DEIS at 1-16 (noting comments addressing the "[n]eed for alternative energy resources due to climate change and impact of fossil fuels"). However, rather than give any consideration to this crucial issue, the FEIS simply claims that it is "out of scope." *Id.* at 1-19. Had FERC properly defined the project purpose and need, it would have

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[13] Oil Change International, *Drilling Toward Disaster: Why U.S. Oil and Gas Expansion is Incompatible with Climate Limits* at 5 (Jan. 2019).
[14] Production Gap Report at 22, 31.
[15] *See* Ecoshift Consulting *et al*., *The Potential Greenhouse Gas Emissions of U.S. Federal Fossil Fuels*, prepared for Center for Biological Diversity & Friends of the Earth (2015).
[16] Intergovernmental Panel on Climate Change (IPCC), *Global Warming of 1.5°C: Headline Statements from the Summary for Policymakers* at 2; C. J. Smith *et al.*, *Current fossil fuel infrastructure does not yet commit us to 1.5°C warming*, NATURE COMMUNICATIONS (2019).
[17] S. J. Davis & R. H. Socolow, *Commitment accounting of CO_2 emissions*, 9 ENVIRONMENTAL RESEARCH LETTERS 084018 (2014); P. Erickson *et al.*, *Assessing carbon lock-in*, 10 ENVIRONMENTAL RESEARCH LETTERS 084023 (2015); P. Erickson *et al*., *Discussion Brief: Carbon lock-in from fossil fuel supply infrastructure*, Stockholm Environment Institute(2015); K. C. Seto *et al*., *Carbon Lock-In: Types, Causes, and Policy Implications*, 41 ANNUAL REVIEW OF ENVIRONMENTAL RESOURCES 425 (2016); F. Green & R. Denniss, *Cutting with both arms of the scissors: the economic and political case for restrictive supply-side climate policies*, 150 CLIMATIC CHANGE 73 (2018).

been obvious that FERC had obligation to consider whether the energy this project will produce could be provided through a combination of renewable energy and energy conservation.

There are ample resources at FERC's disposal to explore the availability of renewable resources and energy efficiency to serve the project's *actual* purpose. The solar job sector is growing faster than any other job sector, and wind and solar energy continue to account for the largest areas of new energy growth across the economy.[18] Moreover, technologies exist today that allow for the rapid build-out of renewable energy resources without the need to develop costly and polluting new fossil fuel projects like this one.[19] Accordingly, to comply with NEPA, FERC must conduct a robust analysis of a clean energy alternative, which would show the real purpose of the project can be fulfilled without completing this environmentally destructive project.

B. FERC failed to evaluate a true "no action" alternative.

The FEIS does not include a genuine "no action" alternative—a flagrant violation of a NEPA requirement that is vital to the law's purposes. 40 CFR § 1502.14(d). A no action alternative "allows policymakers and the public to compare the environmental consequences of the status quo to the consequences of the proposed action." *Ctr. for Biological Diversity v. U.S.*

[18] *See* Bureau of Labor Statistics, Occupational Outlook Handbook: Fastest Growing Occupations (Sept. 4, 2019) (finding that "solar photovoltaic installers" and "wind turbine service technicians" will be the two fastest growing occupations through 2026); E. Winick, *Five Jobs That Are Set to Grow in 2018*, MIT TECHNOLOGY REVIEW (Jan. 8, 2018) (explaining that renewables "will be the fastest-growing professions by percentage over the next 10 years").
[19] *See, e.g.*, M. Z. Jacobson *et al.*, *100% Clean and Renewable Wind, Water, and Sunlight All-Sector Energy Roadmaps for 139 Countries of the World*, JOULE (2017) (setting out roadmaps that "envision 80% conversion by 2030 and 100% by 2050"); R. J. Millar *et al.*, *Emission budgets and pathways consistent with limiting warming to 1.5°C*, NATURE GEOSCIENCE (Sept. 18, 2017); M. Z. Jacobson *et al*., *100% clean and renewable wind, water, and sunlight (WWS) all-sector energy roadmaps for the 50 United States*, 8 ENERGY ENVIRON. SCI. 2093 (2015); S. Pacala & R. Socolow, *Stabilization Wedges: Solving the climate problem for the next 50 years with current technologies*, 305 SCIENCE 968 (2004).

Dep't of the Interior, 623 F.3d 633, 642 (9th Cir. 2010). When an agency evaluates a proposal, "'no action' . . . mean[s] the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward." 46 Fed. Reg. 18,026, 18,027 (Mar. 23, 1981).

Here, FERC assumes that if the Alaska LNG Project is not approved, another project would occur in its place and the environmental impacts would still occur. Specifically, the FEIS states:

> [I]f the Project is not constructed, AGDC or other applicants would likely develop a new project or projects to transport natural gas from the [Point Thomson Unit] and [Prudhoe Bay Unit] for export in foreign commerce and for in-state deliveries. . . . Because the impacts for any replacement project capable of exporting similar volumes are likely to be comparable to those described in section 4.0 of this EIS, we conclude that in addition to not meeting the Project objective, the No Action Alternative is also not likely to provide a significant environmental advantage.

FEIS at 3-3. As such, FERC dismissed the no action alternative from further consideration. *Id.* FERC protests in its Order that the no action alternative means "the proposed facilities would not be constructed . . . and as a result, the environment would not be affected," but conveniently neglects to mention its assumption that another equivalent project is somehow inevitable. Order ¶ 35, FERC. There is no practical difference between the no action alternative and the proposed action in the FEIS. FERC's alternatives therefore "avoid the task actually facing [FERC]. In assuming that, no matter what, [the proposed] activities would surely occur, [FERC is] neglecting to consider what would be a true 'no action' alternative." *Conservation Council of Haw. v. NMFS*, 97 F. Supp. 3d 1210, 1236 (D. Haw. 2015).

FERC offers no justification for its assumption that North Slope production and LNG export is inevitable, stating only that "options for alternative sources for production are generally

limited to the North Slope." FEIS at 3-3. Even if it were reasonable to assume that another LNG export proposal would be approved—which it is not—FERC also offers no explanation why a pipeline project of this scale is inevitable, as opposed to export from Alaska's North Slope by ship, for example. FERC's assumption that alternative projects would inevitably replace this project is contrary to the long history of failed attempts to bring the North Slope's gas to market. According to the Application, development of the North Slope's gas resources "has been a goal of [United States] energy policy since its discovery in 1968." Application at 15-16 (quoting *Yukon Pacific Corporation*, ERA Docket No. 87-68-LNG, Order No. 350 at Section II (Nov. 16, 1989)). The Application explains:

> [T]here have been several initiatives in the past intended to unlock the vast natural gas resources that have to date been stranded on Alaska's North Slope. Over the last forty years, the Nation's executive and legislative branches have recognized the enormous benefits that would inure from the construction of infrastructure that would allow these vast resources to be brought to market. Unfortunately, prior efforts at developing and advancing a project of this magnitude have failed to result in the construction of infrastructure needed to realize these benefits.

Id. at 3. Thus, while it is always impermissible for a purported no action alternative to assume the existence of a comparable project, here FERC's assumption of a comparable project also contravenes the record.

Courts have repeatedly held that it is unacceptable to blindly assume the inevitability of a project proposal as FERC has done here. *See, e.g.*, *WildEarth Guardians v. U.S. Bureau of Land Mgmt.*, 870 F.3d 1222, 1228, 1234 (10th Cir. 2017) (rejecting EIS for coal mining lease project in which the Bureau of Land Management (BLM) concluded, without support, that there was no emissions difference between the preferred and no action alternative because "even if it did not approve the proposed leases, the same amount of coal would be sourced from elsewhere"); *N.C. Wildlife Fed'n v. N.C. Dep't of Transp.*, 677 F.3d 596, 603 (4th Cir. 2012) ("[C]ourts not

infrequently find NEPA violations when an agency miscalculates the 'no build' baseline or when the baseline assumes the existence of a proposed project."); *Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1026-27 (9th Cir. 2008) ("[W]e conclude that the SEIS violates NEPA because the "no-action" alternative assumed the existence of the very plan being proposed.").

VI. FERC failed to take a hard look at the impacts of the Alaska LNG Project in violation of NEPA and the APA.

A. FERC failed to take a hard look at the impacts of greenhouse gas emissions from the Alaska LNG Project.

FERC recognizes that the project could emit more than 2 million metric tons of CO2 equivalent annually during construction and more than 16 million metric tons of CO2 equivalent annually during operations. Order ¶ 214; FEIS at 4-932 to 35, Tbls. 4.15.4-1 to 4.15.4-5 (construction emissions by construction year); *Id.* at 4-937, 4-946 to 50, 4-961, Tbls. 4.15.5-1, 4.15.5-10 to 4.15.5-15, 4.15.5-20 (annual operational emissions); *see also* Order ¶¶ 211, 213 (providing corrections to the greenhouse gas figures in the FEIS). It will also induce substantial production and use of natural gas, resulting in extensive indirect emissions that the FEIS does not account for. The FEIS does not adequately address the project's direct contributions to climate change, arbitrarily ignores all the project's indirect contributions to climate change, and improperly fails to consider mitigation of the project's greenhouse gas emissions.

1. *FERC's failure to consider the significance of greenhouse gas emissions is arbitrary.*

NEPA requires FERC to "evaluate the 'incremental impact' that [greenhouse gas] emissions will have on climate change or on the environment more generally." *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216 (9th Cir. 2008); *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 51, 51 (D.D.C. 2019) (explaining that the

agency was required to "provide the information necessary for the public and agency decisionmakers to understand the degree to which [its] decisions at issue would contribute" to the "impacts of climate change in the state, the region, and across the country"). Estimating the tonnage of the project's greenhouse gas emissions is not enough to satisfy this requirement. *See Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1216 ("While the [environmental document] quantifies the expected amount of CO2 emitted . . . , it does not evaluate the 'incremental impact' that these emissions will have on climate change or on the environment more generally."); *Klamath-Siskiyou Wildlands Ctr.*, 387 F.3d at 995 ("A calculation of the total number of acres to be harvested in the watershed is a necessary component [of a NEPA analysis] but it is not a sufficient description of the actual environmental effects that can be expected from logging those acres."). As Commissioner Glick explains, FERC is "hiding the ball by refusing to assess the significance of the Project's climate impacts." Dissent of Commissioner Glick ¶ 17. This undermines NEPA's purpose, which is to 1) "ensure[] that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts" and 2) "guarantee[] that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision." *U.S. Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 768 (2004) (quoting *Robertson*, 490 U.S. at 349).

NEPA requires that agencies discuss not only a proposed action's environmental effects, but also their significance. 40 C.F.R. § 1502.16(a), (b). Whether a project "significantly" impacts the environment "requires considerations of both context and intensity." *Id.* §1508.27. FERC has not considered either the context or intensity of the project's greenhouse gas emissions to assess their significance.

FERC may rely on federal, state, tribal, or local goals for greenhouse gas emissions targets and carbon budgets to provide context for the significance of these emissions.[20] For example, the Climate Action for Alaska Leadership Team recommended that the state reduce oil, gas, and mining industry greenhouse gas emissions in Alaska by 30% (over 2005 levels) by 2030.[21] Alternatively, the Mitigation Advisory Group of the Governor's Climate Change Sub-Cabinet developed a series of recommendations, which, if implemented, would reduce statewide greenhouse gases emissions by 11.7 million metric tons in 2025.[22] The FEIS did not consider these State recommendations, despite comments urging it to do so.[23] FERC considered whether it could rely on national greenhouse gas targets, but declined to do so because the targets in EPA's Clean Power Plan and the Paris Climate Accord are "pending withdrawal." FEIS at 4-1222, n.197. The United States' withdrawal from the Paris Climate Accord is not yet effective and may never happen. As of the date of the FEIS and the Order, the Paris Climate Accords are in effect, and FERC should have considered them.

FERC demonstrates the ability to contextualize its estimate of direct project emissions by comparing the project emissions to the total state and national greenhouse gas emissions, yet refuses to consider what that context means for the significance of the project's impacts:

[20] H. Aidun, Sabin Center for Climate Change Law, Letter to K. Bose, FERC, Re: Planned Alaska LNG Project; Draft Environmental Impact Statement 4-5 (Oct. 3, 2019); Earthjustice Comments at 34-35.
[21] Climate Action for Alaska Leadership Team, *Alaska Climate Change Action Plan Recommendations to the Governor* at 20 (Sept. 2018)
[22] *See* Alaska Climate Change Strategy's Mitigation Advisory Group, *Final Report: Greenhouse Gas Inventory and Forecast and Policy Recommendations Addressing Greenhouse Gas Reduction in Alaska* at 1-9 to 1-10 & Tbl. 1-1 (Aug. 2009).
[23] FERC did not adequately explain its failure to consider these State climate targets. *See* FEIS, App. CC at CC-612 (Response to comment CO24-2, incorporating by reference an explanation of its position that FERC did not need to consider greenhouse gas emissions for this project because they will occur regardless of FERC's actions).

> To provide context, we are providing a comparison between the direct operational emissions of [greenhouse gase]s of the project to the Alaska and National [Greenhouse Gas] Inventories. Operation of the project will result in a range of about a 30-47 percent increase in the annual fossil-fuel combustion inventory in Alaska based upon the 2017 [Greenhouse Gas] fossil fuel Inventory. From a national perspective, direct operational [greenhouse gas] emissions would result in a range of 0.17–0.28 percent increase in national [greenhouse gas] emissions. Currently, there are no national targets to use as benchmarks for comparison.

Order ¶ 215 (footnotes omitted). FERC is incorrect that there are no national targets to use as benchmarks because the United States is currently a party to the Paris Climate Accord. Moreover, the fact that the project's direct emissions alone will increase Alaska's greenhouse gas emissions *by over thirty percent* should have provided a clear signal that the project's greenhouse gas emissions are significant.

In addition to FERC's failure to analyze greenhouse gas emissions and their impacts, FERC also failed to perform an even more fundamental task required under NEPA: to seek out the information necessary to better inform its decision-making. FERC's duty to collect this information would include, but is not limited to, requesting the relevant data from interested parties.

Another tool for assessing the significance of climate impacts is the social cost of carbon. *See* Earthjustice comments at 35. Although a cost-benefit analysis is not necessarily the ideal or exclusive method for assessing contributions to an adverse effect as enormous and potentially catastrophic as climate change, a federal interagency working group has developed a tool to determine the costs of carbon pollution. Specifically, the social cost of carbon is an estimate of the monetized damages from an incremental increase in carbon emissions in a given year, which includes—but is not limited to—climate-related changes in net agricultural productivity, human

health, property damages from increased flood risks, and the value of ecosystem services.[24] FERC acknowledges that this measure "does constitute a tool that can be used to estimate incremental physical climate change impacts, either on the national or global scale." FEIS, App. CC at CC-615; *see also id.* ("The integrated assessment models underlying the SCC tool were developed to estimate certain global and regional physical climate change impacts due to incremental [greenhouse gas] emissions under specific socioeconomic scenarios."). FERC further acknowledges that this "methodology may be useful for other agencies' rulemakings or comparing regulatory alternatives using cost-benefit analyses where the same discount rate is consistently applied," *id.,* yet it fails to offer a rational explanation for why the social cost of carbon methodology is less appropriate in this proceeding. In addition, FERC incorporates by reference its findings from prior cases that the social cost of carbon cannot meaningful inform FERC's decisions on gas infrastructure projects, Order ¶ 43, but it never explains why those prior conclusions apply to this unique and unprecedented project. *See* Order ¶ 9 ("we have never exerted NGA section 3 jurisdiction over a project of this size"). Regardless, FERC's duty to study the significance of the project's impacts does not depend on the availability of a perfect methodology for assessing those impacts. *Sierra Club v. FERC*, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (*Sabal Trail*) ("some educated assumptions are inevitable in the NEPA process").

In this proceeding, FERC was required to use a cost-monetization tool like the social cost of carbon because the FEIS considers the economic benefits of the proposed action, triggering a need to consider the costs of its carbon emissions. It is "arbitrary and capricious to quantify the *benefits* of [a project] and then explain that a similar analysis of the *costs* was impossible

[24] Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 at 3 (Aug. 2016).

when such an analysis was in fact possible." *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1191 (D. Colo. 2014) (emphasis in original) (noting that although the agency estimated the revenues, royalties, payroll, and local payment for goods and services that would be forgone under the no action alternative, it failed to account for the costs of carbon emissions); *Mont. Envtl. Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1097-99 (D. Mont. 2017). The FEIS estimates and quantifies multiple monetary benefits of the project, including projections for local purchases and payroll. *See e.g.*, FEIS at 4-631, 4-640. Given that expected damages from each ton of carbon dioxide emitted are available in the form of the social cost of carbon, and that the operations could emit 16 million metric tons of CO2 equivalent annually, the FEIS should have also monetized the project's potential climate-related harms. FERC explains its failure to consider the social costs of the project's greenhouse gas emissions, in part, by stating that "it does not use monetized cost-benefit analyses as part of its NEPA review." Order ¶ 44. However, courts recognize that it is arbitrary to consider a monetary quantification of benefits but then ignore social costs, even where agencies have not conducted a full cost-benefit analysis. *Mont. Envtl. Info. Ctr.*, 274 F. Supp. 3d at 1097-99; *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d at 1191. Indeed, courts have found NEPA violations where agencies quantified some of the very same economic benefits that FERC quantified in this FEIS, outside of a cost-benefit analysis.[25]

FERC simply refused to analyze the significance of the project's greenhouse gas impacts, instead of seeking the information it would need to do so. FERC's failure to seek out all the appropriate information is a separate but equally dispositive violation of NEPA. Specifically,

[25] In both *Montana Environmental Information Center* and *High Country Conservation Advocates*, the defendants monetized benefits from payroll and in *High Country Conservation Advocates* the defendant monetized benefits from local spending.

FERC must at least *request* information regarding the extent of potential increased domestic production and consumption of methane gas to comply with NEPA, and as noted *infra* pp. 51-54, information regarding greenhouse gas fugitive emission leakage rates. NEPA "requires the [agency] to at least *attempt* to obtain the information necessary to fulfill its statutory responsibilities." *Birckhead*, 925 F.3d at 520 (emphasis added) (citing *Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1310 (D.C. Cir. 2014) ("an agency must fulfill its [NEPA] duties to the fullest extent possible") (citations omitted)). Even if the relevant information is unavailable, the reviewing agency has an affirmative duty to seek it out. *See Barnes v. U.S. Dep't of Transp*., 655 F.3d 1124, 1136 (9th Cir. 2011) ("an agency must use its best efforts to find out all that it reasonably can") (citations omitted); *see also* 40 C.F.R. §§ 1508.8, 1502.16(b) (requiring analysis of indirect effects, defined as those effects remote in time or place but still reasonably foreseeable). Federal agencies have argued elsewhere that information regarding the upstream and downstream emission of greenhouse gases is too speculative to obtain, but the D.C. Circuit is "skeptical of any suggestion that a[n] [] applicant would be unwilling or unable to obtain it if the [agency] were to ask for such data as part of the . . . application process." *Birckhead*, 925 F.3d at 520 (D.C. Cir. 2019). Here, FERC failed to request or otherwise collect the relevant information from the applicant and most obvious interested parties.

FERC's refusal to consider the significance of greenhouse gas impacts rests on its incorrect assumption that consideration of such impacts requires a "universally-accepted methodology for evaluating the project's impacts on climate change." Order ¶ 43. Assessing impacts—climate or otherwise—under NEPA does not require a "universally accepted" methodology. Agencies must use sound judgment to pick among available methodologies and use best efforts when precise tools are unavailable. *See, e.g.*, 40 C.F.R. § 1502.22(b). Although

analysis of discrete physical effects is unnecessary to evaluate significance, tools for such an analysis are available. The United States Global Change Research Program uses tools to assess how current and future impacts of climate change respond to different emission scenarios. Using these tools, it is possible to meaningfully discuss the incremental impact of the emissions at issue here. More broadly, the lack of a clear, bright line delimiting the significance of greenhouse gases does not excuse FERC from evaluating their significance; indeed, such bright lines rarely exist for any environmental impact. Thus, FERC's conclusion that it cannot determine the significance of greenhouse gas emissions is arbitrary.

Commissioner Glick correctly explains why FERC's finding that there is no "universally accepted methodology" for assessing climate impacts "does not excuse the Commission's failure to evaluate these emissions":

> As an initial matter, the lack of a single consensus methodology does not prevent the Commission from adopting *a* methodology, even if it is not universally accepted. The Commission could, for example, select one methodology to inform its reasoning while also disclosing its potential limitations or the Commission could employ multiple methodologies to identify a range of potential impacts on climate change. In refusing to assess a project's climate impacts without a perfect model for doing so, the Commission sets a standard for its climate analysis that is higher than it requires for any other environmental impact.
>
> In any case, the Commission also can use its expertise to consider all factors and determine, quantitatively or qualitatively, whether the Project's [greenhouse gas] emissions have a significant impact on climate change. That is precisely what the Commission does in other aspects of its environmental review. Consider, for example, the Commission's findings that the Project will not have a significant effect on issues such as "scrub and herbaceous plant communities," "subsistence users" and "forest communities." Notwithstanding the lack of any "universally-accepted methodology" to assess these impacts, the Commission uses its judgment to conduct a qualitative review, and assess the significance of the Project's effect on those considerations. The Commission's refusal to, at the very least, exercise similar qualitative judgment to assess the significance of [greenhouse gas] emissions here is arbitrary and capricious.

Dissent of Commissioner Glick ¶¶ 19-20 (emphasis in original) (footnotes omitted).

FERC must select a reasonable methodology for assessing impacts from greenhouse gas emissions, just as it attempts to do for other project impacts.

FERC has several tools for understanding the significance of a project's greenhouse gas emissions in addition to the social cost of carbon estimates from the federal Interagency Working Group. As discussed above, emissions goals, carbon budgets, and EPA tools and reporting thresholds all provide context for a project's emissions. Several other tools exist as well, including the National Energy Modeling System, a tool developed by the Energy Information Administration that can be used to both 1) estimate the impacts of fossil fuel extraction and transportation projects on supply and demand and 2) quantify the attendant environmental impacts, including greenhouse gas emissions.[26] A paper published in *Nature* estimated country-level costs for carbon emissions, recognizing that the United States is among the countries that are consistently estimated to incur the largest fraction of the global costs of greenhouse gas emissions.[27] Relevant to the gas this project would transport to market, a 2015 scientific and economic study determined that "all Arctic [oil and gas] resources should be classified as unburnable," because "development of [oil and gas] resources in the Arctic . . . [is] incommensurate with efforts to limit average global warming to 2°C."[28] FERC had a duty to seek information about and compare the various methodologies available for estimating the costs of damage from the project's climate emissions, and to utilize one or more of those methodologies or provide a non-arbitrary explanation for why it chose not to do so. As

[26] EIA, *The National Energy Modeling System: An Overview 2018* (Apr. 2019).
[27] K. Ricke *et al*., *Country-level social cost of carbon*, 8 NATURE CLIMATE CHANGE 895 (Sept. 24, 2018).
[28] C. McGlade and P. Ekins, *The geographical distribution of fossil fuels unused when limiting global warming to 2°C*, 517 NATURE 187 (2015).

demonstrated above, FERC had access to many methodologies it could have used to fulfill this duty.

In his concurrence, Commissioner McNamee concludes that FERC lacks authority or basis for determining the significance of greenhouse gas emissions because "Congress enacted the Clean Air Act to establish an all-encompassing regulatory program, supervised by the EPA to deal comprehensively with interstate air pollution." Concurrence of Commissioner McNamee ¶ 10. This radical argument contravenes settled law. Courts have long held that the NEPA process must consider environmental impacts, even if those impacts are subject to regulation by another agency. *Calvert Cliffs'*, 449 F.2d at 1123. Accordingly, the D.C. Circuit recently rejected FERC's suggestion that state and federal permitting processes for air emissions excused FERC from considering greenhouse gas emissions in its NEPA analysis. *Sabal Trail*, 867 F.3d at 1375 (citing *Calvert Cliffs'*, 449 F.2d at 1122-23).

2. *FERC failed to take a hard look at the project's direct greenhouse gas emissions.*

Not only did FERC improperly fail to assess the significance of the project's estimated direct greenhouse gas emissions, but FERC's estimates of greenhouse gas emissions related to the project underestimate both the magnitude of the emissions and the direct climate impacts stemming from those emissions. Specifically, the FEIS fails to disclose predictable fugitive methane emissions and fails to disclose the dramatic short-term impacts of methane on the climate.

First, the FEIS did not disclose the risk of emissions from either a major pipeline rupture, well blowout, or ongoing leak. It was arbitrary to ignore the potential for these events, which are

common enough to pose a foreseeable risk of enormous fugitive emissions.[29] Ruptures and blowouts could be even more catastrophic in this project than in other gas-sector operations because of the difficulty of identifying and responding to an accident in the Arctic and Cook Inlet.[30] Yet FERC did not even attempt to estimate the emissions impacts of a major pipeline rupture. It was arbitrary for FERC to fail to disclose these reasonably foreseeable impacts. 40 C.F.R. § 1502.22.

FERC's analysis of fugitive emissions from pipelines is especially insufficient. The FEIS relies on outdated 2005 data from the Interstate National Gas Association of America. FEIS at 4-946, 4-950 (citing "Interstate Natural Gas Association of America. 2005" in Table 4.15.5-10 and Table 4.15.5-15). In the 15 years since this report, the best available science shows that the petrochemical industry has seriously underestimated the quantity of fugitive emissions that occur. Indeed, much more recent studies indicate the industry has been underestimating the scope of fugitive emissions by as much as 60%,[31] and that leaks are much more widespread than

[29] E. Ponsot, *California Natural Gas Leak Just One of Thousands Across Country*, PBS (Jan. 18, 2016); J. Warrick, *California Gas Leak Was the Worst Man- Made Greenhouse-Gas Disaster in U.S. History, Study Says*, WASH. POST (Feb. 25, 2016).

[30] *See* J. George, *Most Arctic Oil Spills Impossible to Clean Up: WWF*, NUNATSIAQ NEWS (Sept. 8,
2011); S. L. Ross Environmental Research Ltd., Spill Response Gap Study for the Canadian Beaufort Sea and the Canadian Davis Strait at 28 (July 12, 2011) (noting that, from July through October, conditions in the nearshore Beaufort Sea would be favorable for cleanup only 32 to 77 percent of the time; at other times of year, "active response would be deferred until the following melt season").

[31] R. A. Alvarez *et al.*, *Assessment of methane emissions from the U.S. oil and gas supply chain*, SCIENCE (June 21, 2018).

previously assumed.[32] A leak from another gas pipeline in Cook Inlet in 2017 illustrates the potential for emissions from these types of events.[33]

In relying on such stale data, FERC did not give fugitive emissions the hard look required under NEPA and had insufficient information on which to base its alternatives analysis and consideration of mitigation. *See N. Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1086 (9th Cir. 2011) (reliance on outdated aerial surveys was arbitrary and capricious). Moreover, even if FERC's fugitive emissions calculations were based on accurate science, the information provided in the FEIS is internally inconsistent and does not stand up under scrutiny. According to the FEIS, the one-mile Prudhoe Bay pipeline is anticipated to release 29 tons per year (tpy) of fugitive CO2 equivalent (CO2e) emissions, but the exponentially larger 806-mile Mainline Pipeline will only have 272 tpy of these emissions—528 tpy if fugitive emissions from the eight compressor stations along the Mainline are included. *See* FEIS at 1-1; *compare* FEIS at 4-946 with FEIS at 4-950.[34] The FEIS does not even begin to explain why there is not some correlation between the pipeline length and anticipated fugitive emissions. Although FERC states that fugitive emissions potential is based on "a variety of factors, including the number of valves and other components with leak potential," FEIS, App. CC at CC-707, the FEIS does not provide any information about the components associated with each line. Indeed, assuming a linear correlation between pipeline length and fugitive emissions, if one mile of pipeline will

[32] Center for Public Integrity, *Leaks Threaten Safety – And Success – Of American's Top Natural Gas Exporter* (May 30, 2019).
[33] Pipeline and Hazardous Materials Safety Administration (PHMSA), In the Matter of Hilcorp Alaska, LLC, CPF No. 5-2017-0004S, Notice of Proposed Safety Order (Mar. 3, 2017) (PHMSA Hilcorp Proposed Safety Order Notice) (discussing a pipeline leak in Cook Inlet that released up to 325,000 cubic feet of gas every day for over two months).
[34] In response to the Center for Biological Diversity's comments on the DEIS, FERC asserts that "Additional fugitive emissions associated with the operation of the Mainline Pipeline are included in the emission inventories for the compressor stations." FEIS, App. CC at CC-707.

lead to 29 tpy of fugitive emissions, over 800 miles would result in over 20,000 tpy of emissions.[35] Thus, FERC failed to adequately assess anticipated fugitive emissions, in violation of NEPA.

FERC's failure to accurately analyze fugitive emissions or their impacts was compounded by the agency's misleading discussion of the standards to which AGDC will be subject and the actions AGDC must take to control those emissions. Although the FEIS states that the project will be subject to EPA's oil and gas fugitive emissions performance standards, FEIS at 4-926 to 27, FERC must take into account the effect of the Trump administration's efforts to roll back the existing regulations aimed at successfully detecting fugitive methane emissions from the oil and gas sector, which are summarized in EPA's latest proposal to weaken these standards. *See* 84 Fed. Reg. 50,244 (Sept. 24, 2019). FERC also fails to explain how vegetative removal once per year will be sufficient to ensure that there is successful monitoring for fugitive emissions, FEIS at 2-88 ("To facilitate periodic corrosion and leak surveys, a corridor not exceeding 10 feet in width centered on the pipeline would be maintained annually in an herbaceous state"), particularly given abundance of plant life on the North Slope.[36]

Second, in addition to failing to disclose reasonably foreseeable emissions from pipelines and wells, FERC arbitrarily ignores current science on the potency of methane, which is the greenhouse gas that would be released through this project's fugitive emissions. The FEIS

[35] *See* I.M. Boothroyd *et al*., *Assessing fugitive emissions of CH4 from high-pressure gas pipelines in the UK*, 631-632SCIENCE OF THE TOTAL ENVIRONMENT 1638, 1646-47 (2018) (discussing reported pipeline leak densities in the United States). While the pipeline diameters differ, *see* FEIS at 1-1, that difference also cannot explain this marked discrepancy, and if there is some other basis for it, FERC was required to disclose it to the public when there was an opportunity to comment on it.

[36] *See, e.g.*, North Slope Borough, Department of Wildlife Management, *Common Plants of the North Slope* (undated).

counts methane emissions as if one ton of methane has the global warming potential of 25 tons of carbon dioxide, based on an estimate of methane's potency over a 100-year timeframe that EPA used to finalize its greenhouse gas reporting rule in 2009. FEIS at 4-913. It is arbitrary to use a 100-year time horizon when assessing methane's global warming impacts because methane remains in the atmosphere for less than 20 years, with an estimated global warming potential 87 times that of carbon dioxide over that relevant timeframe.[37] Accordingly, an "unexplained decision to use the 100-year time horizon when other more appropriate time horizons remained available, qualifies as arbitrary and capricious," regardless of EPA's practice. *W. Org. of Res. Councils v. U.S. Bureau of Land Mgmt.*, No. CV-16-21-GF-BMM, 2018 WL 1475470, at *15 (D. Mont. Mar. 26, 2018). Even if FERC had a reasonable justification for using a 100-year timeframe to discuss methane impacts, it must use "high quality" information for such an assessment. 40 C.F.R. § 1500.1(b). The FEIS relies on an outdated figure for methane's 100-year global warming potential, when the most recent Intergovernmental Panel on Climate Change (IPCC) report estimates methane's 100-year global warming potential to be 36 times that of carbon dioxide and "EPA considers the GWP estimates presented in the most recent IPCC scientific assessment to reflect the state of science."[38] FERC responded to comments on this issue by acknowledging that "calculated global warming potential for each [greenhouse gas] can vary" and explaining that it "used the same GWP that the EPA used in the Greenhouse Gas Reporting Rule for consistency throughout the document." FEIS, App. CC at CC-617. However, noting the existence of alternative global warming potential calculations is not sufficient to satisfy NEPA's requirement to provide a "full and fair discussion" of impacts, *W.*

[37] IPCC, *Climate Change 2013: The Physical Science Basis* at 714 (2013) (IPCC Assessment).
[38] IPCC Assessment at 714; EPA, *Understanding Global Warming Potentials*.

Org. of Res. Councils v. U.S. Bureau of Land Mgmt., No. CV-16-21-GF-BMM, 2018 WL 1475470, at *16 (citing 40 C.F.R. § 1502.1), and FERC did not explain why it chose EPA's outdated assumptions about methane's potency as the basis for a consistent comparison.

3. *FERC impermissibly failed to consider the project's indirect greenhouse gas emissions.*

NEPA requires FERC to consider the project's indirect effects and their significance, which includes induced increases in greenhouse gas emissions. 40 C.F.R. §§ 1502.16(b), 1508.8(b) (defining indirect effects as those that are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable"). These effects include emissions that may occur as a predicate for the proposal ("upstream emissions") or as a consequence of the proposal ("downstream emissions"). *See, e.g.*, *Sierra Club v. FERC*, 867 F.3d 1357, 1372 (D.C. Cir. 2017); *WildEarth Guardians v. Bureau of Land Mgmt.*, 870 F.3d 1222 (10th Cir. 2017) (discussing the adequacy of alternatives analysis as it relates to downstream emissions); *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549-50 (8th Cir. 2003) ("Mid States"); *Montana Envtl. Info. Ctr.*, 274 F. Supp. 3d at 1094-99; *San Juan Citizens All. v. Bureau of Land Mgmt.*, 326 F. Supp. 3d 1227, 1243-44 (D. N.M. 2018); *W. Org. of Res. Councils v. Bureau of Land Mgmt.*, No. CV-16-21-GF-BMM, 2018 WL 1475470 at *13 (D. Mont. 2018); *WildEarth Guardians*, 368 F. Supp. 3d at 73, 77. Agencies must also assess the emissions of connected actions. *See* 40 C.F.R. § 1508.25 (defining connected actions as those that are "closely related and therefore should be discussed in the same impact statement"). Indirect effects for a gas pipeline project "include the climate consequences of both the upstream greenhouse gases emitted by the extraction and processing of the natural gas before it enters the pipeline system, and downstream greenhouse gases emitted by the combustion of the natural gas in power plants, industrial facilities, heating and cooking appliances, and other end

uses."[39] Indeed, that gas transported in a pipeline will ultimately be burned is not merely reasonably foreseeable, it is the entire purpose of a gas pipeline to facilitate that outcome. *See Sierra Club v. FERC*, 867 F.3d 1357, 1372 (D.C. Cir. 2017). Courts have held that where a project will increase an activity by enabling it to occur or by making the activity more economically attractive, NEPA requires analysis of the effects of the activity's increase. *See, e.g., Barnes v. U.S. Dep't of Transp.*, 655 F.3d 1124, 1138-39 (9th Cir. 2011) (requiring study of increased air traffic spurred by new airport runway); *Sierra Club v. Marsh*, 769 F.2d 868, 877-79 (1st Cir. 1985) (requiring consideration of effects of "industrial development" of previously undeveloped and inaccessible island that would be enabled by new port and causeway).

It is clear from the record that the project would induce gas production upstream. The FEIS itself indicates that this project will lead to new upstream gas production infrastructure: the FEIS lists projects that would be built as a result of the gas pipeline, including modification and expansion of Prudhoe Bay Unit and Point Thomson Unit, relocation of the Kenai Spur Highway, in-state gas interconnections, and LNG carrier transits. FEIS at 4-1159 to 60. Although the construction and operation of all of these associated projects would result in upstream greenhouse gas emissions, FERC only acknowledges that emissions would result from the construction at Prudhoe Bay Unit. *Id.* at 4-1162. The FEIS arbitrarily failed to acknowledge and account for the additional greenhouse gases from construction and operation of all of the projects that are integral to the gas pipeline. The gas pipeline will require not only the gas that is currently produced and re-injected, but also new production at these fields and/or elsewhere, *id*.

[39] Institute for Policy Integrity, *Pipeline Approvals and Greenhouse Gas Emissions* at 12 (Apr. 2019).

at 4-1160, 4-1162, and FERC arbitrarily ignored the greenhouse gases resulting from this additional production.

It is also reasonably foreseeable that the project will induce additional development, beyond that explicitly described in the FEIS. Such development is necessary and even assumed here because the gas supply from existing developments will only last for twenty years and the proposed project has an estimated life of at least thirty years. *Id.* at 2-1 ("AGDC states that the Project facilities would each have a nominal design life of 30 years"); *see also id.* at 4-1160 ("AGDC anticipates that the Project would be fully utilized by natural gas produced from wells already drilled on the North Slope for about 20 years before there would be available pipeline capacity for new production."). In the expected demand scenario, the project would need to produce approximately 47.5 trillion cubic feet (Tcf) of gas supply to meet the estimated gas requirements.[40] Alaska has an estimated total 63.5 Tcf of combined gas reserves and probable and possible gas resources, 45.2 Tcf of which is on the North Slope.[41] Because there is no access to the market for North Slope gas, none of the 45.2 Tcf of gas on the North Slope is classified as reserves.[42] Only 34.8 Tcf of the North Slope gas is already discovered and delineated at existing oil fields such that it might be reclassified as reserves once access and a viable market are established.[43] Thus, the discovered gas on the North Slope will not be enough to meet the proposed project requirements; at a minimum, AGDC will need an additional 12.7 Tcf of gas to meet the estimated demand for the full 30 years. Making up this deficit would require additional

[40] NERA Economic Consulting, *Socio-Economic Impact Analysis of Alaska LNG Project* at 4, Fig. 3 (June 19, 2014) (Socio-Economic Report).
[41] DeGolyer & MacNaughton, *Report on a Study of Alaska Gas Reserves and Resources for Certain Gas Supply Scenarios as of December 31, 2012* at 12, Fig. 5 (Apr. 2014).
[42] *Id.* at 11; *id*. at 12, Fig. 5.
[43] *Id.* at 11.

drilling on the North Slope, Beaufort Sea, or Cook Inlet.[44] In the high demand scenario, the deficit would increase by an additional 20.1 Tcf.[45] FERC acknowledges "It is likely that additional wells would be drilled at some point in the future" but declines to analyze the potential impacts because the timing of such drilling "would be market driven and not reasonably foreseeable." FEIS at 4-1160. The FEIS was required to quantify the greenhouse gas emissions from this reasonably foreseeable development. 40 C.F.R. § 1508.8(b). Because the FEIS acknowledges the potential for new natural gas development to provide economic benefits, FEIS at 4-638, it is arbitrary for FERC to disregard the greenhouse gas/climate forcing costs of extracting that gas.

FERC also fails to account for downstream greenhouse gas emissions. As an initial matter, the FEIS fails to calculate the estimated greenhouse gas emissions that will result from combusting the natural gas transported by the pipeline. As the D.C. Circuit held in *Sierra Club v. FERC*, the "reasonably foreseeable" effects of authorizing a pipeline that will transport gas to power plants are that: (1) gas will be burned in those power plants, and (2) greenhouse gas emissions will be emitted as a result of burning the gas. 867 F.3d at 1371–74. Indeed, these effects are not only "reasonably foreseeable," but transporting and burning gas is generally the entire purpose of pipeline construction or expansion. *Id.* at 1372.[46] In this case, as the FEIS acknowledges, much of the gas transported by the proposed pipeline will not be commercialized and sold unless the pipeline is constructed. FEIS at 3-2 ("If the No Action Alternative is selected

[44] *Id*. at 12, Fig. 5.
[45] Socio-Economic Report at 4, Fig. 4.
[46] It is unnecessary for FERC to identify the specific end uses of the gas, because nearly all of the United States gas supply is used for combustion and therefore releases emissions. *See, e.g.*, EIA, *About 7% of Fossil Fuels are Consumed for Non-Combustion Use in the United States*, Today in Energy (April 6, 2018)("Relatively small amounts of natural gas are consumed for non-combustion use in the industrial sector").

. . . the opportunity to commercialize North Slope natural gas would not be realized and in-state deliveries of natural gas through interconnections would not be achieved."). As in *Mid States*, "it is almost certainly true" this project "will increase the long-term demand for [gas] and any adverse effects that result from burning [gas]," 345 F.3d at 549, but FERC nonetheless concludes that it is not responsible for considering these impacts. In prior environmental reviews for LNG export terminals, FERC has calculated the greenhouse gas emissions expected from burning the exported LNG.[47] Here, in contrast, FERC neither discloses the increased demand and resulting emissions that could result from the construction of the project, nor the significance of those emissions. Its failure to conduct such analysis is arbitrary and violates NEPA. *San Juan*, 326 F. Supp. 3d at 1244 ("it is erroneous to fail to consider, at the earliest stage feasible, 'the environmental consequences of the downstream combustion of the . . . gas resources potentially open to development' under the proposed agency action") (internal citations omitted).

In addition, the FEIS fails to recognize or calculate downstream emissions from bulk carriers traveling to their ultimate destination. The agency's failure to quantify all of these emissions renders the analysis inadequate. *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1217.

FERC has not explained its failure to examine indirect emissions from the project inducing demand for natural gas in Alaska. According to the project application:

> [T]he decrease in natural gas prices over time compared to the no-Project scenario will induce additional consumption of natural gas in Alaska's economy, such that

[47] FERC, Draft EIS, Jordan Cove Liquefaction and Pacific Connector Pipeline Projects at 4-895 (2014) ("[Greenhouse gas] emissions from the end use of natural gas are approximately 53.8 kg CO2e per million Btu of natural gas (40 CFR 98). The quantity of natural gas associated with the estimated 90 LNG vessels per year—assuming a maximum LNG vessel size of 148,000 m3—is approximately 470 million ft3/yr, and the heating value of LNG is approximately 600,000 Btu/ft3. Therefore, the end-use [greenhouse gas] emissions associated with this quantity of natural gas are approximately 15 million mt/yr of CO2e.").

> by the 2048-2053 period, total Alaska natural gas domestic consumption, as indicated below, will be about 10% higher in the Expected scenario than the no-Project scenario.

Application at 17-18.[48] The FEIS acknowledges that without this project, "the opportunity to commercialize North Slope natural gas would not be realized and in-state deliveries of natural gas through interconnections would not be achieved." FEIS at 3-2. The project includes three specific interconnections for in-state deliveries. FEIS at 2-20; FEIS at 4-1164.[49] The FEIS notes that the availability of gas to in-state users could "induce development of certain natural-gas-intensive industrial uses, such as fertilizer production," but mentions only the increase in jobs and population that would result from these industries, and not the additional greenhouse gas emissions. FEIS at 4-1165. Emissions from this induced demand are indirect effects of the project that NEPA requires FERC to consider, 40 C.F.R. §§ 1502.16(b), 1508.8(b), yet FERC has failed to do so without any attempted justification.

As for indirect effects of the Project associated with induced demand for natural gas overseas, FERC has provided two rationales for why it is not required to consider such effects. Both of are flawed. First, in response to comments on the DEIS, FERC explained that DOE has already granted the Alaska LNG Project authority to export an amount of gas equivalent to the project's full capacity to nations with which the United States has a Free Trade Agreement (FTA). FEIS, App. CC at CC-612. From this, FERC concludes: "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." *Id.* FERC

[48] *See also Alaska LNG Project, LLC*, FE Docket No. 14-96-LNG, DOE/FE Order No. 3643 at 33 (May 28, 2015) (finding that "because the Alaska LNG Project will access stranded gas, the Project will improve rather than worsen the supply of gas available to consumers in Alaska").
[49] *See also* Order at 2, n.5 ("AGDC states that along the mainline there will be at least five gas interconnection points to allow for future in-state deliveries of natural gas.").

errs because DOE's authorization to export to FTA nations and conditional authorization to export to non-FTA nations are both connected actions in the context of NEPA analysis of the project. These actions are "connected" because they are "closely related" and "interdependent parts of a larger action and depend on the larger action for their justification." 40 C.F.R. § 1508.25(a)(1). Further, the DOE's authorizations to export are connected actions because they have no "independent utility" from the project before FERC; Alaska LNG will not export anything unless FERC grants a permit for its construction, and the proposed export terminal has no purpose if it cannot export LNG.[50] Under both the plain language of the CEQ regulations and the case law, the export authorizations are clearly connected actions to this project.

Second, in the Order, FERC concluded that "because the authority to authorize the LNG exports rests with DOE, NEPA does not require FERC to consider the upstream or downstream [greenhouse gas] emissions that may be indirect effects of the export itself when determining whether the related LNG export facility satisfies section 3 of the NGA." Order ¶ 40. However, contrary to FERC's conclusion, the D.C. Circuit's opinion in *Freeport* does not allow FERC to ignore the indirect emissions from this project. 827 F.3d 36. In *Freeport*, FERC found "no evidence suggesting that the gas to be processed in the Freeport facility, independent of the

[50] The Ninth Circuit applies "an 'independent utility' test to determine whether multiple actions are so connected as to mandate consideration in a single EIS. The crux of the test is whether each of two projects would have taken place with or without the other and thus had 'independent utility. When one of the projects might reasonably have been completed without the existence of the other, the two projects have independent utility and are not "connected" for NEPA's purposes." *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 976 (9th Cir. 2006) (Thomas, concurring in part and dissenting in part) (citations and quotations omitted). The D.C. Circuit uses a multi-factor test to determine whether an agency has improperly segmented NEPA review of connected actions. Under that test, the export authorizations are also "connected actions" because the actions lack a substantial independent utility and FERC's blinkered review has foreclosed the ability to consider alternatives. *See Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1315-16 (D.C. Cir. 2014).

export authorization, would come from future, *induced* natural gas production, as opposed to from existing production." 827 F.3d at 47 (quotation omitted). Based on those facts, the court found that the project had no impacts that "exist apart from the intervening Department of Energy decision to authorize exports." *Id.* at 48; *see also Sierra Club v. FERC* ("*Sabine Pass*"), 827 F.3d 59 (D.C. Cir. 2016) ("[T]he Terminal's liquefaction operations did not necessitate an increase in domestic natural gas production."). Thus, the court did not allow FERC to ignore emissions from induced gas production; it simply excused FERC from examining the indirect effects of redirecting existing supplies of LNG from the domestic market to the foreign market.

As explained in *Sabal Trail*, *Freeport* involved "licensing physical upgrades for an LNG terminal," and FERC had no legal authority to deny such an "upgrade license" due to the indirect environmental impacts of exporting LNG. *Sabal Trail*, 867 F.3d at 1372-73. This project is no "upgrade license." This new infrastructure would deliver gas from "the world's largest proven reserves of conventional, recoverable, natural gas" to market for the first time via an 807-mile pipeline. *See* Application at 11, 13, 15. The purpose of this project is to bring gas to market that would otherwise stay in the ground. In AGDC's words: "By unlocking the vast resources in the North Slope that would otherwise continue to be stranded, the Project will at long last bring to market Alaska's abundant natural gas resource base, and produce substantial economic benefits." Application at 15. NEPA requires FERC to examine the indirect effect of unlocking these gas resources. The project would cause the indirect effects described above whether the LNG from the project was sold in the domestic or foreign market, and therefore poses an inquiry much broader than the narrow question of "indirect effects of the anticipated export of natural gas" that *Freeport* held were outside the scope of FERC's NEPA review. *Freeport*, 827 F.3d at 47 (emphasis omitted).

Further, the D.C. Circuit explained in *Sabal Trail* that the scope of FERC's NEPA review reflects the scope of the information Congress instructed it to consider in evaluating applications. When FERC applies a broad standard encompassing "the adverse effects of the project, including adverse environmental effects" in evaluating an application, FERC is not excused from considering indirect environmental effects. *Sabal Trail*, 867 F.3d at 1373. In *Sabal Trail*, FERC could only issue a certificate "upon a finding that the project will serve the public interest" and could therefore "deny a pipeline certificate on the ground that the pipeline would be too harmful to the environment." *Id*. at 1364, 1373. Similarly, approval of this project requires FERC to consider whether Alaska LNG is "consistent with the public interest," 15 U.S.C. § 717b(a), and FERC could therefore deny the application if FERC determined it would be too harmful to the environment. *Distrigas Corp. v. Fed. Power Comm'n*, 495 F.2d 1057, 1065 (D.C. Cir. 1974) ("The Commission has long regarded Section 3's 'public interest' standard and Section 7's 'public convenience and necessity' standard as substantially equivalent.").[51] FERC appears to acknowledge that environmental considerations are an appropriate part of the public-interest determination, as it considered environmental harms—however briefly—in its discussion of whether the project meets the NGA's public interest standard. Order ¶ 17. There is no rational basis for including some environmental factors in the public interest balancing but excluding climate impacts. *See* Dissent of Commissioner Glick ¶¶ 8-10 (explaining that "The Commission's Public Interest Determination Does Not Adequately Consider Climate Change"). Not only does the law of the D.C. Circuit require FERC to disclose and analyze all emissions that are reasonably foreseeable impacts of this project, but FERC's refusal to consider all the

[51] The D.C. Circuit has found that Section 3 of the NGA authorizes the Commission to impose "the equivalent of Section 7 certification requirements" on facilities. *Id.* at 1064.

project's foreseeable environmental harms is also inconsistent with case law in the Ninth Circuit.[52]

4. *FERC violated NEPA and the APA by failing to consider whether adverse impacts from greenhouse gases can be avoided.*

FERC is required to consider mitigation for this project's greenhouse gas impacts regardless of whether FERC determines those impacts are significant. NEPA requires that an EIS address "*any* adverse environmental effects which cannot be avoided should the proposal be implemented." 42 U.S.C. § 4332(C)(ii) (emphasis added). As CEQ has explained, its regulations also require an EIS to consider mitigation for all project impacts:

> The mitigation measures discussed in an EIS must cover the range of impacts of the proposal. The measures must include such things as design alternatives that would decrease pollution emissions, construction impacts, esthetic intrusion, as well as relocation assistance, possible land use controls that could be enacted, and other possible efforts. *Mitigation measures must be considered even for impacts that by themselves would not be considered "significant."* Once the proposal itself is considered as a whole to have significant effects, all of its specific effects on the environment (whether or not "significant") must be considered, and mitigation measures must be developed where it is feasible to do so.

46 Fed. Reg. 18,026, 18,031 (Mar. 23, 1981) (emphasis added).

[52] For example, in *Save our Sonoran v. Flowers*, the court explained:

> Although the Corps' permitting authority [under the Clean Water Act] is limited to those aspects of a development that directly affect jurisdictional waters, it has responsibility under NEPA to analyze all of the environmental consequences of a project. Put another way, while it is the development's impact on jurisdictional waters that determines the scope of the Corps' permitting authority, it is the impact of the permit on the environment at large that determines the Corps' NEPA responsibility. The Corps' responsibility under NEPA to consider the environmental consequences of a permit extends even to environmental effects with no impact on jurisdictional waters at all.

408 F.3d 1113, 1122 (9th Cir. 2005).

FERC discusses alleged difficulties in determining whether the project's greenhouse gas emissions are significant, but does not explain the failure to consider mitigation of these impacts. Order ¶¶ 42-43. This failure is arbitrary and capricious.

B. FERC failed to take a hard look at the risks and impacts of leaks, spills, and other accidents.

FERC's FEIS fails to analyze properly the risk and impacts of a spill or other accident from the main pipeline, LNG facility, and other components of the project. While FERC acknowledges that a spill of hazardous materials could occur, it dismisses it as unlikely because the facilities would be designed and operated in compliance with state and federal regulations. FERC also dismisses many of the concerns regarding spills and other accidents because the project involves gas rather than oil, which FERC believes "presents a lower risk to the environment." *See* FEIS, App. CC at CC-709. This is arbitrary. NEPA requires FERC to take a hard look at all the impacts of its actions; the fact that FERC believes other types of fossil fuel projects may cause more harmful impacts does not excuse this legal duty.

The FEIS fails to analyze properly the increased risk of spills or other accidents in the face of climate change. Alaskan shorelines are eroding at an accelerating rate due to the combined effects of sea-ice loss, increasing sea surface temperatures, increasing terrestrial permafrost degradation, rising sea levels, and increases in storm power and corresponding wave action.[53] Indeed, coastal erosion rates have doubled in the past fifty years along the Beaufort Sea

[53] B. M. Jones *et al.*, *Increase in the rate and uniformity of coastline erosion in Arctic Alaska*, 36 GEOPHYSICAL RESEARCH LETTERS L03503 (2009) (Jones et al. 2009); C. D. Kovena *et al*., *Permafrost carbon-climate feedbacks accelerate global warming* 108(36) PNAS 14769; N. J. Pastick *et al*., *Distribution of near-surface permafrost in Alaska: Estimates of present and future conditions*, 168 REMOTE SENSING OF ENVIRONMENT 301 (2015); K. R. Barnhart *et al*., *The effect of changing sea ice on the physical vulnerability of Arctic coasts*, 8 THE CRYOSPHERE 1777 (2014); K. R. Barnhart *et al.*, *Modeling erosion of ice-rich permafrost bluffs along the Alaskan Beaufort Sea coast*, 119 J. GEOPHYS. RES. EARTH SURF. 1155 (2013).

shoreline.[54] Yet FERC failed to adequately discuss and analyze the risks of the project in light of increased sea level rise, permafrost melt, sea-ice melt, coastal erosion, and increasing storms and wave action. Instead, while the FEIS acknowledges these impacts are occurring, it states that climate change impacts on the project operation, such as melting permafrost, will be similar to those that have occurred on the Trans-Alaska Pipeline (TAPS)—an oil pipeline constructed in 1975. FEIS as 4-108. But historical data does not account for future changes in the face of climate change. FERC's FEIS must analyze the risks from the project in light of future projections on sea-level rise, erosion, permafrost melt, and increased storm and wave severity in Alaska.

FERC also underestimates the extent to which spills occur in oil and gas operations in Alaska. For example, a report completed in November 2010 reviewed over 6,000 North Slope spills from 1995 to 2009.[55] The report showed that there were on average 44 loss-of-integrity spills each year, with an average 4.8 spills of greater than 1,000 gallons each year.[56] This means that a spill of 1,000 gallons or more occurs nearly every two months. There have also been several recent incidents that demonstrate FERC's dismissal of the risk of spills and other accidents is arbitrary. For example, in April 2014, BP released "approximately 700 gallons of natural gas, crude oil, and produced water onto 33 acres of arctic tundra and gravel pad."[57] "The

[54] H. Lantuit & W. H. Pollard, *Fifty years of coastal erosion and regrossive thaw slump activity on Herschel Island, southern Beaufort Sea, Yukon Territory, Canada*, 95 GEOMORPHOLOGY 84 (2008); J. C. Mars & D. W. Houseknecht, *Quantitative remote sensing study indicates a doubling of coastal erosion rate in past 50 yr along a segment of the Arctic coast in Alaska*, 35 GEOLOGY 583 (2007); Jones et al. 2009.
[55] *See* Nuka Research & Planning Group, LLC, North Slope Spills Analysis: Final Report on North Slope Spills Analysis and Expert Panel Recommendations on Mitigation Measures (Nov. 2010).
[56] *Id*. at 21, 23.
[57] EPA, News Release: BP Exploration Alaska and Hilcorp Alaska Settle with EPA and State of Alaska for North Slope Oil Spills (July 14, 2016).

spill was caused by a freezing rupture in the dead leg section of BP's H Pad Well 8 three-phase flowline."[58] In 2016, despite being subject to United States federal and Alaska contingency planning requirements, a tug hauling an empty fuel barge from Ketchikan, Alaska back to British Columbia was grounded and spilled 26,000 gallons of diesel fuel and other fluids, contaminating subsistence clam beds and preventing them from being harvested.[59] FERC's FEIS also improperly assumes that impacts from a spill will be minimal because any spill would likely be cleaned up or evaporate. Numerous reports indicate cleaning up spills in the Arctic is nearly impossible.[60] Cleaning up spills, including gas leaks, in Cook Inlet is also extremely difficult.[61] Indeed, a recent gas leak from a pipeline in Cook Inlet leaked up to an estimated 325,000 (at its highest leakage rate) cubic feet of gas every day until finally reported repaired nearly four months after it started.[62]

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[58] *Id*.

[59] *See* J. Resneck, *B.C. tribe sues U.S. barge company over 2016 spill*, ALASKA PUBLIC MEDIA (Oct. 11, 2018). The spill could have been far worse if the attached fuel barge had still been carrying its 10,000-ton (approx. 3 million-gallon) fuel cargo. *See* F. Los, *The Lingering Legacy of the Nathan E. Stewart*, HAKAI MAGAZINE (Apr. 10, 2017).

[60] Minerals Management Service, Arctic Oil Spill Response Research and Development Program, A Decade of Achievement at 14 (2009) ("5 to 30% for open ocean response without broken ice"); *see also* T. L. Robertson & E. DeCola, Joint Agency Evaluation of the Spring and Fall 2000 North Slope Broken Ice Exercises (Dec. 18, 2000); Nuka Research & Planning Group, LLC, Oil Spill Response Mechanical Response Recovery Systems for Ice-Infested Waters: Examinations of Technologies for the Alaskan Beaufort Sea at 58 (June 2007); Committee on Responding to Oil Spills in the U.S. Arctic Marine Environment, Responding to Oil Spills in the U.S. Arctic Marine Environment at 92 (2014).

[61] PHMSA Hilcorp Proposed Safety Order Notice (describing gas leak in Cook Inlet).

[62] *See* S. Shankman, *Natural Gas Leak in Cook Inlet Stopped, Effects on Marine Life Not Yet Known*, INSIDE CLIMATE NEWS (Apr. 15, 2017); Alaska Department of Environmental Conservation (ADEC), Hilcorp Natural Gas Leak from 8-inch Pipeline, Situation Report #1 (Feb. 15, 2017); ADEC, Hilcorp Natural Gas Leak from 8-inch Pipeline, Situation Report #3 (Mar. 1, 2017); ADEC, Hilcorp Natural Gas Leak from 8-inch Pipeline, Situation Report #6 (May 22, 2017); Hilcorp Alaska, LLC, Middle Ground Shoal Gas Leak Sampling and Monitoring Plan (Mar. 2017).

A gas leak could have significant impacts on a variety of wildlife. High concentrations of natural gas, such as methane, in water create dead zones by promoting localized hypoxia (low oxygen) around the release site affecting the survival of marine species.[63] Similarly, natural gas concentrations can create hypoxic conditions above the bubbling site.[64] High concentrations of methane can trigger the growth of microbes (metanothophs) that break up methane molecules and also consume large amount of oxygen.[65] In cold waters, methane may react with water molecules to form hydrates.[66] Methane hydrates can be trapped and accumulated under the ice in winter and converted to methane gas as water temperature rises in spring. Additionally, if natural gas contains sulfides, it is much more highly toxic to marine life.[67]

Methane molecules can rapidly penetrate the bodies of fish, causing direct damage to gills, skin, and eyes, and filling up the gas bladder, which compromise the capacity of fish to control buoyancy, impacting fitness and survival.[68] Within 15 to 20 minutes of exposure to 1

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[63] S. Goldenberg, *Methane Dead Zones in Gulf Waters Confirmed, Gas Levels 100,000 Times Normal*, INSIDE CLIMATE NEWS (July 1, 2010); S. B. Joye *et al.*, *Magnitude and oxidation potential of hydrocarbon gases released from the BP oil well blowout*, 4 NATURE GEOSCIENCE 160 (2010).

[64] S. A. Yvon-Lewis *et al.*, *Methane flux to the atmosphere from the Deepwater Horizon oil disaster*, GEOPHYSICAL RESEARCH LETTERS 38; I. J. Duncan, *Does methane pose significant health and public safety hazards?—A review*, 22 ENVIRONMENTAL GEOSCIENCES 85 (2015).

[65] J. D. Kessler *et al.*, *A Persistent Oxygen Anomaly Reveals the Fate of Spilled Methane in the Deep Gulf of Mexico*, 331 SCIENCE 312–315 (2011); M. C. Redmond & D. L. Valentine, *Natural gas and temperature structured a microbial community response to the Deepwater Horizon oil spill*, 109 PNAS 20292 (2012).

[66] C. S. Law *et al.*, *Geological, hydrodynamic and biogeochemical variability of a New Zealand deep-water methane cold seep during an integrated three-year time-series study*, 272 MARINE GEOLOGY 189 (2010); M. Yang *et al.*, *Gas recovery from depressurized methane hydrate deposits with different water saturations*, 187 APPLIED ENERGY 180 (2017).

[67] R. Wang, *Physiological implications of hydrogen sulfide: a whiff exploration that blossomed*, 92 PHYSIOLOGICAL REVIEWS 791 (2012).

[68] S. Patin, Chapter 5: Biogeochemical and Ecotoxicological Characteristics of Natural Gas in the Marine Environment, in *Environmental impact of the offshore oil and gas industry* (1999).

mg/l fish show signs of acute poisoning followed by death within one to two days of exposure.[69] Impacts to fish from gas leaks could have ripple effects up the food chain, including on critically endangered Cook Inlet beluga whales that depend on the availability of healthy fish prey for their survival. 76 Fed. Reg. 20,180 (April 11, 2011).[70] Yet the FEIS failed to properly consider these harmful impacts.

C. FERC failed to take a hard look at the impacts of the Alaska LNG Project on wildlife.

The Alaska LNG Project will affect a wide array of species, including species protected under the Marine Mammal Protect Act (MMPA) and listed under the ESA. While FERC's FEIS discusses some of these impacts, it fails to take the hard look NEPA mandates. FERC's analysis of the project's impacts on Cook Inlet beluga whales, North Pacific right whales, and polar bears is particularly lacking.

FERC's failures stem, in part, from its over-reliance on its biological assessment in its FEIS, which is Appendix O of the FEIS. FERC cannot rely on this appendix to satisfy its NEPA obligations. First, an analysis under section 7(a)(2) of the ESA cannot substitute for one under NEPA given the important differences between the two statutes. *See, e.g.*, *Fund for Animals v. Hall*, 448 F. Supp. 2d 127, 136 (D.D.C. 2006) (describing differences between the two statutes including, for example, that "the ESA's Section 7 consultation process differs from the cumulative impacts analysis required by NEPA in a number of important ways"). That is particularly true here, where FERC's biological assessment contains only a cursory mention of the impacts to ESA-listed species, which—like its NEPA analysis—largely consists of lists of impact-inducing activities and tables that do not provide any actual analysis. *See, e.g.*, FEIS,

[69] *Id*.

[70] *See also* NMFS, Recovery Plan for the Cook Inlet Beluga Whale (*Delphinapterus leucas*) at III-15 to III-19 (Dec. 2016) (Cook Inlet Beluga Whale Recovery Plan).

App. O at O-73 to 80 (discussing potential impacts of activity on polar bears). Second, courts have instructed that "an agency may not circumvent its obligation to provide a clear assessment of environmental impacts simply by placing [vital] analysis in an appendix." *Or. Envtl. Council v. Kunzman*, 817 F.2d 484, 494 (9th Cir. 1987); *see also Pacific Rivers Council v. U.S. Forest Service*, 689 F.3d 1012, 1030-32 (9th Cir. 2012) (rejecting the argument that the agency could incorporate by reference the Biological Assessment as a substitute for NEPA analysis). Yet that is just what FERC has done here.

1. *FERC's FEIS fails to take a hard look at the impacts of the project on Cook Inlet beluga whales.*

In addition to failing to consider the impacts of a gas leak or other accidents on Cook Inlet beluga whales, FERC failed to take a hard look at the numerous other impacts to Cook Inlet beluga whales from the Alaska LNG Project. Cook Inlet beluga whales are in a precarious state with a declining population trend and no signs of recovery. Indeed, NMFS recently released a new abundance estimate that reveals the population is "estimated to be smaller and declining more quickly than previously thought."[71] Specifically, NMFS now estimates that the population size is between 250 and 317 whales, with a median estimate of 279, and an estimated decline in abundance of approximately -2.3% per year, which is a faster rate of decline than the previous estimate of -0.5% per year.[72]

[71] NMFS, New Release: NOAA Releases New Abundance Estimate for Endangered Cook Inlet Beluga Whales (Jan. 28, 2020); *see also* K. E. Shelden & P. R. Wade, *Aerial surveys, distribution, abundance, and trend of belugas (Delphinapterus leucas) in Cook Inlet, Alaska, June 2018,* . AFSC Processed Rep. 2019-09 (Dec. 2019) (Shelden & Wade 2019).
[72] Shelden & Wade 2019 at vi, 55, 71.

Even before this recent report, NMFS had found that even the take of one Cook Inlet beluga whale every two years may impede recovery of this highly endangered species.[73] In 2015, Cook Inlet belugas became one of NMFS's "Species in the Spotlight," which prioritizes those species at the highest risk of extinction.[74] NMFS considers these Species in the Spotlight a "recovery priority #1."[75] A recovery priority #1 species is one whose extinction "is almost certain in the immediate future because of a rapid population decline or habitat destruction, whose limiting factors and threats are well understood and the needed management actions are known and have a high probability of success, and is a species that is in conflict with construction or other developmental projects or other forms of economic activity."[76] NMFS develops five-year action plans for each of the "Species in the Spotlight" that outline short-term efforts vital for stabilizing their populations and preventing their extinction.[77] NMFS identified a number of key actions needed to be taken between 2016 and 2020 to promote the recovery of the Cook Inlet beluga whale, including reducing anthropogenic noise in beluga whale habitat, protecting habitats that support foraging and reproduction, and ensuring the availability of healthy and plentiful prey.[78]

Construction and operation of the Alaska LNG Project would do just the opposite, by increasing these threats—including in the species' designated critical habitat—further

[73] NMFS, Stock Assessment Report: Beluga Whale (*Delphinapterus leucas*): Cook Inlet Stock at 112 (December 30, 2018) ("even one take every 2 years may still impede recovery").
[74] *See* NMFS, Species in the Spotlight Priority Actions: 2016–2020 Cook Inlet Beluga Whale *Delphinapterus leucas* (2015) (Species in the Spotlight).
[75] *Id.* at 1.
[76] *Id.* at 1, n.1
[77] *Id.* at 1.
[78] *Id*. at 4, 6, 10.

jeopardizing the species' chance of survival and recovery. Yet FERC failed to properly consider such impacts, including increased noise pollution, ship traffic, and water pollution.

i. FERC failed to consider the impacts of noise pollution properly.

The Alaska LNG Project will exacerbate impacts to Cook Inlet beluga whales including through noise pollution generated by construction of the main pipeline and LNG facility, increased vessel and plane traffic, pile driving, excavation, anchor handling, dredging, and operations.

Some of these activities will reach Level A (injury) and Level B (disturbance) harassment of Cook Inlet belugas. FEIS at 4-507. These activities can interfere with essential beluga life behaviors (feeding, breeding, rearing of calves), communication, and predator avoidance. Proposed mitigation measures (*e.g.*, ramp-ups) fall short of adequately protecting this species and necessary protections (*e.g.*, full adherence to time/area closures and use of PAM/night-vision devices to add in observation) are not required.

For example, the majority of the Cook Inlet beluga whale population (~83%) uses the western side of Cook Inlet near the Susitna Delta during the summer months. *Id.* NMFS thus recommends that any activities in the Susitna Delta Exclusion Zone be avoided from April 15-October 15. *Id.* Citing the need to operate during ice-free periods, FERC recommends restricting certain activity only during June-July—a mere one-third of the recommended space/time closure. *Id.* Yet the FEIS fails to consider the impacts of such activities properly.

FERC also failed to take a hard look at the impacts of increased noise pollution from increased vessel and air traffic. The agency notes whales exhibit behavioral responses including longer dive times and swimming away from aircraft disturbance, but says the whales "are generally less disturbed by aircraft when feeding." FEIS, App. O at O-103. This statement is

misleading. While belugas may not exhibit the same behavioral responses to aircraft while feeding, that does not necessarily mean they "are generally less disturbed." Stress responses, including increases in stress hormones, may still be impacting beluga whales. Their perceived failure to respond may simply be a result of the fact that the whales need to eat a seasonally available food resource when possible—and that they have nowhere else to go.[79]

FERC also failed to consider the impacts of noise pollution from increased vessel traffic—an especially glaring omission considering the agency's statement that the Alaska LNG Project would result in about 204 to 360 port calls per year during the life of the project, resulting in an increase of up to 74% over existing traffic levels of ships of this size. FEIS at 4-393. Moreover, numerous tugs will accompany each LNG tanker. *Id.* at 4-212. The FEIS, however, fails to consider properly the impacts of the additional noise pollution generated by both the tankers and the tug boats.

Such a failure is particularly arbitrary considering that of the "wide variety of anthropogenic noise sources that could potentially interfere with recovery . . . present in C[ook] I[nlet] beluga habitat," NMFS lists noise from tug boats and tankers as the most important threats.[80] Indeed, the FEIS says that some of the impacts from vessel noise will be limited because "[v]essel noise could cause marine mammals to avoid the area near the transiting vessel," FEIS at 4-385, but fails to consider that avoidance of an area constitutes harassment under the MMPA and could cause further harm to the species, particularly considering that Cook Inlet belugas cannot escape to quiet waters.

[79] K. Forney *et al*. *Nowhere to go: noise impact assessments for marine mammal populations with high site fidelity*, 32 ENDANGERED SPECIES RESEARCH 391 (2017) (Forney *et al.* 2017).
[80] Cook Inlet Beluga Whale Recovery Plan at III-11.

Relatedly, FERC cannot dismiss impacts to Cook Inlet beluga whales under the theory that the whales have habituated to noise. As one study explained,

> [T]he sustained presence of animals in an area under development is an insufficient indicator of the absence of adverse impacts, particularly given the challenges of detecting population trends. Some animals may have limited abilities to move elsewhere, and their decision to remain in an area *may likely reflect tolerance (i.e. persisting in an important area despite the cost) rather than habituation*.[81]

Moreover, the best available science shows that the impact thresholds used by NMFS are not sufficiently protective. For example, a 2018 study shows that beluga whales have sensitive hearing.[82] And, a 2019 publication by Tyack and Thomas supports the conclusion that the calculation of a single threshold approach (such as used by NMFS for Level B acoustic harassment) underestimates the number of animals affected.[83] Current exposure criteria also fail to reflect the best available science or the cumulative effects of noise pollution and stressors on marine mammals.[84]

ii. **FERC failed to consider the impacts from contaminants properly.**

FERC also failed to consider the impacts of the discharges associated with the project, that risk harm to both beluga whales and their prey. For example, according to AGDC, the initial dredging for the MOF will require removal and disposal of 800,000 cubic yards of sediment, followed by up to two subsequent maintenance dredging and disposal events during construction,

[81] D. P. Nowacek *et al*., *Marine seismic surveys and ocean noise: time for coordinated and prudent planning*, 13(7) FRONT ECOL ENVIRON 378 (2015) (Nowacek *et al.* 2015) (citations omitted) (emphasis added).
[82] T. A. Mooney *et al*., *Variation in hearing within a wild population of beluga whales (Delphinapterus leucas)*, 221 JOURNAL OF EXPERIMENTAL BIOLOGY (2018).
[83] P. Tyack & L. Thomas, *Using dose–response functions to improve calculations of the impact of anthropogenic noise*, 29 (S1) AQUATIC CONSERV: MAR FRESHW ECOSYST. 242–253.
[84] *See* Nowacek *et al*. 2015.

which will require removal and disposal of up to 140,000 cubic yards of material.[85] In total, AGDC estimates that it will dredged and fill 1.08 million cubic yards of material for the MOF.[86] Pipeline construction will also involve dredging and filling.[87]

According to NMFS, dredging elsewhere has "seriously impacted" other beluga whale populations.[88] Dredging is one of the anthropogenic activities NMFS identifies in the recovery plan for the Cook Inlet beluga whale that "can result in substantial changes in habitat, or temporary or permanent loss of habitat."[89] Dredging can increase sediment loading, impairing growth and survival of juvenile fish, including salmon—one of the whale's most important food sources.[90] Dredging can also degrade the acoustic propagation characteristics of the habitat.[91] Additionally, during dredging operations, "contaminants such as heavy metals and organochlorines settled on the seabed may be stirred up and redistributed into the water column."[92]

As apex predators, beluga whales are at risk of illness and injury due to the biomagnification of harmful chemicals when they eat prey that has been exposed to such contaminants.[93] For example, belugas in the Gulf of St. Lawrence in Canada have very high levels of contaminants in their bodies, including PCBs, DDT, Mirex, mercury, lead, and

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[85] Alaska LNG Project, U.S. Army Corps of Engineers Permit Application Supplemental Information at 28 (Nov. 22, 2019) (Army Corps Permit Supplemental Information).
[86] *Id.*
[87] *Id* at 36.
[88] NMFS, Conservation Plan for the Cook Inlet Beluga Whale (*Delphinapterus leucas*) at 55 (2008).
[89] Cook Inlet Beluga Whale Recovery at III-15 (Dec. 2016).
[90] NMFS, Anthropogenic and environmental stressors in Cook Inlet beluga whales (*Delphinapterus leucas*): Literature Review and Assessment at 48 (Sept. 2011) (Anthropogenic and Environmental Stressors); 76 Fed. Reg. at 20,203.
[91] Cook Inlet Beluga Whale Recovery Plan at III-15.
[92] Anthropogenic and Environmental Stressors at 48.
[93] 76 Fed. Reg. at 20,203.

indicators of hydrocarbon exposure.[94] These chemicals can have toxic effects on animal life and interfere with reproduction and resistance to disease; and they can also be transferred from mothers to their calves through nursing.[95]

NMFS has found that Cook Inlet beluga whales are predisposed to adverse effects of pollution because they often occur in dense aggregations within small nearshore areas in the most populated and developed region in Alaska. 76 Fed. Reg. at 20,203. Studies indicate that some of the chemicals detected in Cook Inlet belugas, such as PCBs, could be present at concentration ranges associated with the potential for endocrine disruption and immune functions in marine mammals.[96] These studies also indicate that copper levels in the livers of Cook Inlet belugas are higher than the levels at which renal damage was reported in bottlenose dolphins.[97] Indeed, FERC's FEIS on the project states that recent sampling revealed that copper, nickel, and silver were detected in sediment at concentrations exceeding the NOAA SQuiRT TEL values; and that arsenic, chromium, nickel, and selenium were detected at concentrations exceeding the ADEC Method 2 Cleanup Levels for migration to groundwater. FEIS at 4-83, 4-118. Moreover, because dredging would disturb more than just surface sediments "deeper sediments could have higher concentrations of contaminants than those identified in the grab samples." *Id.* at 4-81.

Even if these toxic chemicals are not present in the substrate in significant quantities in Cook Inlet, even small quantities can be harmful as these substances may bioaccumulate in whales over long periods of time through chronic exposure, causing potential long-term health

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[94] *Id.*
[95] *Id.*
[96] URS Corp., Chemical Exposures for Cook Inlet beluga whales: A Literature Review and Evaluation at ES-1 (Mar. 2010).
[97] *Id.*

problems.[98] As such, NMFS lists water quality as an important aspect of Cook Inlet beluga whale ecology and "essential to their conservation" within its designated critical habitat. 76 Fed. Reg. at 20,203. Yet FERC failed to carefully analyze the impacts the proposed discharges will have on the species and their designated critical habitat.

iii. FERC failed to take a hard look at other impacts to Cook Inlet beluga whales.

The Alaska LNG Project would irreversibly damage Cook Inlet beluga whale critical habitat. Beluga Critical Habitat Area 2 is the proposed site of a number of Alaska LNG facilities, including the Mainline, Mainline MOF, Marine Terminal, Product Loading Facility, Marine Terminal MOF, dredging for the Marine Terminal, and dredged material disposal sites. Yet FERC failed to take a hard look at such impacts.

In addition, year-round noise associated with project-related increased vessel traffic would further degrade habitat in the already-industrialized Cook Inlet. Cook Inlet beluga whales demonstrate a preference for quieter habitats such as the Susitna River mouth, and the project would further reduce the whales' ability to refuge. Noise associated with docking LNG carriers is expected to exceed threshold values for injury and harassment of Cook Inlet beluga whales, with other activities also contributing to Level B harassment. The proposed noise-related mitigation measures for beluga whales are insufficiently protective and some, like ramp-ups, may in fact be harmful.[99]

Project-related anthropogenic noise including (but not limited to) vessel traffic may further impact Cook Inlet beluga whale survival and recovery by negatively impacting their preferred prey species. Habitat degradation would affect preferred beluga whale prey species

[98] Anthropogenic and Environmental Stressors at 47-48.
[99] Forney *et al.* 2017.

including four species of Pacific salmon (Chinook, chum, coho, and sockeye), as well as Pacific eulachon, Pacific cod, walleye pollock, saffron cod, and yellowfin sole. In some cases the degradation would be temporary (*e.g.*, from construction-related turbidity) and in other cases permanent (*e.g.*, due to erosion, destruction of benthic habitat, or shading from the facility). Project-related activities would also impede beluga whales' transit between critical habitat zones, hindering the ability of mothers with young to find prey during the critical summer period.[100]

In short, given how little suitable habitat remains for Cook Inlet beluga whales,[101] the highly depleted status of the population, and the severity of the anticipated impacts of the Alaska LNG Project on the population, the construction and operation of the Alaska LNG Project will likely jeopardize the continued existence of this imperiled whale population, and adversely modify its critical habitat. FERC failed to properly consider this reality, or otherwise take a hard look at the impacts of the project on Cook Inlet beluga whales.

2. *FERC's FEIS fails to take a hard look at the impacts of the project on North Pacific* right whales.

FERC's FEIS does not take the requisite hard look at the impacts of the project on North Pacific right whales. The North Pacific right whale is one of the most critically endangered whales in the world, with a population hovering between 26 and 31 individuals.[102] Their Atlantic-based cousins experience substantial mortality from ship strikes,[103] and the Alaska LNG

[100] M. Castellote *et al.*, *Anthropogenic noise and the endangered Cook Inlet beluga whale,* Delphinapterus leucas*: acoustic considerations for management,* 80 MARINE FISHERIES REVIEW 63 (2018) (Castellote *et al.* 2018).
[101] Shelden & Wade 2019.
[102] M. M. Muto *et al.*, *Alaska Marine Mammal Stock Assessments, 2018,* NOAA Tech. Memo. NMFS-AFSC-393 at 246 (June 2019) (Muto *et al.* 2019).
[103] *Id*. at 247.

Project transportation route cuts through the North Pacific right whale's range.[104] Despite this risk, FERC dismissed the risk of vessel strikes to this whale, citing both lack of data and low population density. FEIS, App. O at O-123. This is unacceptable given the potentially catastrophic consequences of the loss of even one whale from this population—particularly if it is a reproductive-aged female.

FERC's FEIS also fails to assess properly the risks of vessel noise on the species. Recent research reveals that chronic stress in North Atlantic right whales is associated with exposure to low frequency noise from ship traffic. Specifically, "the adverse consequences of chronic stress often include long-term reductions in fertility and decreases in reproductive behavior; increased rates of miscarriages; increased vulnerability to diseases and parasites; muscle wasting; disruptions in carbohydrate metabolism; circulatory diseases; and permanent cognitive impairment."[105] These findings have led researchers to conclude that "over the long term, chronic stress itself can reduce reproduction, negatively affect health, and even kill outright."[106] North Pacific right whales likely suffer in the same ways. Yet FERC failed to properly consider such impacts.

3. *FERC's FEIS fails to take a hard look at the impacts of the project on polar bears.*

While FERC acknowledges that the Alaska LNG Project could adversely affect polar bears, it does not take a hard look at these impacts. Specifically, the FEIS fails to consider adequately the effects of increasing energetic costs, nutritional stress, vulnerability to conflicts

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[104] D. L. Wright *et al.*, *Acoustic detection of the critically endangered North Pacific right whale in the northern Bering Sea*, 35 MARINE MAMMAL SCIENCE 311 (2019).
[105] R. Rolland *et al.*, *Evidence that ship noise increases stress in right whales*, PROC. R. SOC. B. (February 8, 2012).
[106] R. M. Rolland *et al.*, *The Inner Whale: Hormones, Biotoxins and Parasites*, *in* THE URBAN WHALE: NORTH ATLANTIC RIGHT WHALES AT THE CROSSROADS 232-272 (S.D. Kraus & R.M. Rolland eds., 2007).

with humans, and long-distance swimming in the face of climate change. FERC also fails to consider properly that, absent significant reductions in greenhouse gas pollution, the Southern Beaufort Sea (SBS) polar bear population faces a high probability of extirpation within this century. Nor does the FEIS analyze how the greenhouse gas pollution from the Alaska LNG Project and other oil and gas development projects in the Arctic will frustrate recovery efforts.

i. The FEIS fails to take a hard look at the impacts of the project on polar bears in light of increasing energetic costs and nutritional stress.

The FEIS fails to consider adequately the impacts of the Alaska LNG Project on polar bears in light of increasing energetic costs and nutritional stress in the face of climate change. For example, a recent study found that radio-tracked adult female polar bears in the SBS population increased their activity time and/or their travel speed to compensate for rapid westward ice drift in recent years, as ice drift rates increased due to reduced ice thickness and extent.[107] This additional activity increased their estimated annual energy expenditure and "likely exacerbate[s] the physiological stress experienced by polar bears in a warming Arctic."[108]

Another recent study found that Beaufort Sea polar bears cannot use a hibernation-like metabolism to meaningfully prolong their summer fasting period and that bears are susceptible to deleterious declines in body condition, and ultimately survival, during the lengthening period of ice melt and food deprivation.[109] Scientists at the U.S. Department of the Interior interpret these

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[107] G.M. Durner *et al.*, *Increased Arctic sea ice drift alters adult female polar bear movements and energetics*, 23 GLOBAL CHANGE BIOLOGY 3460 (2017).
[108] *Id.*; *see also* J.V. Ware *et al.*, *Habitat degradation affects the summer activity of polar bears*, 184 OECOLOGIA 87 (2017) (finding that SBS bears were substantially more active than Chukchi Sea bears in lower quality habitat types and that on land, SBS bears exhibited relatively high activity associated with the use of subsistence-harvested bowhead whale carcasses) (Ware *et al.* 2017); A. M. Pagano *et al.*, *High-energy, high-fat lifestyle challenges an Arctic apex predator, the polar bear*, 359 SCIENCE 568 (2018).
[109] J.P. Whiteman *et al.*, *Summer declines in activity and body temperature offer polar bears limited energy savings,* 349 SCIENCE 295 (2015).

observations as a prelude to mass polar bear mortality events in the future: "As changes in habitat become more severe and seasonal rates of change more rapid, catastrophic mortality events that have yet to be realized on a large scale are expected to occur."[110]

The FEIS also fails to acknowledge the fact that polar bears are increasing long-distance swimming, which results in drowning, cub mortality, and physiological stress.[111] One study "indicates that long distance swimming in Arctic waters, and travel over deep water pack ice, may result in high energetic costs and compromise reproductive fitness" and that "[a]ssociated declines in body mass and losses of dependent young may ultimately become an important mechanism for influencing population trends."[112] Satellite telemetry records from 76 bears in the Beaufort Sea during 2007–2012, coupled with earlier results, indicated that the frequency of long-distance swims increased with (a) increases in the distance of the pack ice edge from land, (b) the rate at which the pack ice edge retreated, and (c) the mean daily rate of open water gain between June and August. these results indicate that "long-distance swimming by polar bears is likely to occur more frequently as sea ice conditions change due to climate warming."[113] FERC must consider all of these effects, together with those of the Alaska LNG Project.

ii. The FEIS fails to consider adequately threats from increased human-bear interactions, including oil and gas development.

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[110] Convention on International Trade in Endangered Species of Wild Fauna and Flora, Mar. 3rd., 1973, 993 U.N.T.S. 243, *Consideration of proposals for amendment of appendices I and II*, Sixteenth meeting of the Conference of the Parties, Bangkok (Thailand), 3-14 March 2013, Prop. 3 at 5.1.

[111] G.M. Durner *et al.*, *Consequences of long-distance swimming and travel over deep-water pack ice for a female polar bear during a year of extreme sea ice retreat*, 34 POLAR BIOLOGY 975 (2011).

[112] *Id.*; *see also* B. D. Griffen, *Modeling the metabolic costs of swimming in polar bears (Ursus maritimus)*, 41 POLAR BIOLOGY 491 (2018).

[113] N.W. Pilfold *et al.*, *Migratory response of polar bears to sea ice loss: to swim or not to swim*, 40 ECOGRAPHY 189 (2017).

The FEIS also fails to address properly the fact that, as the sea ice continues to melt, polar bears are increasingly using marginal habitats and will become increasingly vulnerable to interactions with humans and encounters with oil and gas development. For example, one recent study found that during the annual sea ice minimum between 1989 to 2014, adult female polar bears in the SBS population spent less time in their preferred, prey-rich, shallow-water sea ice habitat in recent years—corresponding with declines in availability of this preferred habitat type—and spent more time in lower-quality habitat, where they have reduced access to prey.[114] The study concluded that "[t]he substantially higher use of marginal habitats by SB bears is an additional mechanism potentially explaining why this subpopulation has experienced negative effects of sea ice loss."[115]

The percentage of bears coming ashore and staying for at least 21 days has more than sextupled as those bears are arriving earlier, staying later, and staying longer than ever before.[116] The more time bears spend on shore, the more likely they are to be negatively affected by industry. This higher rate of encounters has led, and will continue to lead, to a drastic increase in the harassment of polar bears.[117] Though hazing, in theory, decreases the number of polar bears killed in defense of life or property, it is well known that polar bears have extremely high energy

[114] Ware *et al.* 2017.
[115] *Id*. at 87; *see also* M.C. Rogers *et al.*, *Diet of female polar bears in the southern Beaufort Sea of Alaska: evidence for an emerging alternative foraging strategy in response to environmental change*, 38 POLAR BIOLOGY 1035 (2015).
[116] An average of 5.8% was recorded from 1986-1999 with an average of 20% from 2000-2014 and a high point of 37% in 2013. T. C. Atwood *et al.*, *Rapid Environmental Change Drives Increased Land Use by an Arctic Marine Predator*, 6 PLOS ONE e0155932 at 9, 12 (2016); Eni US Operating Co. Inc., Initial Exploration Plan, Harrison Bay Block 6423 Unit Proposed Drilling of Leases OCS-Y-1753, OCS-Y-1754, and OCS-Y-1757, App. O at 62 (Mar. 2017) (Eni Initial Exploration Plan 2017).
[117] Eni Initial Exploration Plan 2017, App. O at 62.

demands, and conserving energy is vital to their survival.[118] As such, harassment that results in movement, as hazing is intended to do, could lead to significant metabolic costs, especially if the metabolic response is sustained over an extended period of time.[119]

Harassment causing bears to run will always have a high metabolic cost.[120] Female polar bears that are energetically stressed may forgo reproduction, rather than risk incurring the energetic costs of an unsuccessful reproductive process, and the persistent deferral of reproduction could cause a declining population trend, further threatening a species with an intrinsically low rate of growth.

Additionally, polar bears in the SBS are increasingly denning on land in the winter.[121] This frequency of denning on land is directly linked to the distance that sea ice has retreated from land, hence this shift in denning habitat is predicted to continue.[122] Bears forced to den on land are increasingly vulnerable to human development, and denning mothers subjected to human disturbances and hydrocarbon development may abandon their dens, causing the death of cubs.[123]

FERC's failure to properly consider such impacts, and its dismissal of impacts that cause harassment is arbitrary, particularly considering available information indicating that increasing

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[118] *See, e.g.*, S. Schliebe *et al.*, *Range-wide Status Review of the Polar Bear (Ursus maritimus)* at 15, 76, 85 (Dec. 21, 2006) (Schliebe 2006).
[119] P. D. Watts *et al.*, *Energetic output of subadult polar bears (Ursus maritimus): resting, disturbance, and locomotion*, 98A COMP. BIOCHEM. & PHYSIOL. 191 (1991).
[120] *Id*. at 192; Schliebe 2006 at 75.
[121] A.S. Fischbach *et al.*, *Landward and eastward shift of Alaskan polar bear denning associated with recent sea ice changes*, 30 POLAR BIOLOGY 1395 (2007).
[122] J. W. Olson *et al.*, *Collar temperature sensor data reveal long-term patterns in southern Beaufort Sea polar bear den distribution on pack ice and land*, 564 MAR. ECOL. PROG. SER. 211 (2017).
[123] *See, e.g.*, S. C. Amstrup, *Human disturbances of denning polar bears in Alaska*, 46 ARCTIC 246 (1993).

harassment is likely having, and will continue to have, negative impacts on polar bears at the same time sea ice loss is increasing energetic and nutritional stress.

iii. The FEIS fails to take a hard look at the impacts of greenhouse gas pollution from the Alaska LNG Project on polar bear recovery.

The FEIS fails to analyze properly the effects of the Alaska LNG Project's greenhouse gas pollution, either in isolation or in combination with other oil and gas activities in the Arctic, on the survival and recovery of polar bears.

FWS's Final Polar Bear Conservation Management Plan includes a threats-based recovery criterion calling for stabilization of sea ice loss so that the ice-free period does not exceed a certain threshold.[124] While the FEIS and biological assessment acknowledge that polar bears are threatened by sea ice loss, they do not acknowledge how the direct, indirect, and cumulative impacts of the Alaska LNG Project will affect the likelihood of sea ice loss stabilizing at the established recovery thresholds.

The FEIS otherwise fails to consider adequately the high probability of the extirpation of the SBS polar bear population without significant reductions in greenhouse gas pollution to stem sea ice loss. For example, Amstrup *et al.* (2010) evaluated the future range-wide population status of polar bears under five greenhouse gas-emissions scenarios.[125] Under the A1B, B1, and "mitigation" emissions scenarios (where the "mitigation scenario" was characterized by 450 ppm CO2, radiative forcing of ~3.5 watts/m2, and mean global temperature rise limited to ~1.75ºC above preindustrial temperatures by 2100), extinction was the dominant outcome in the Divergent ecoregion (where sea ice pulls away from the coast in summer and polar bears must be

[124] FWS, Polar Bear Conservation Management Plan at 18 (Dec. 20, 2016).
[125] S.C. Amstrup *et al.*, *Greenhouse gas mitigation can reduce sea-ice loss and increase polar bear persistence*, 468 NATURE 955 (2010).

on land or move with the ice as it recedes north) encompassing the SBS population.[126] When the mitigation scenario was combined with the best possible management to reduce threats from harvest, bear human interactions, and oil and gas activities, reduced population was the dominant outcome for the Divergent ecoregion, although the probability of an extinction outcome was still substantial at 24% by 2100.[127]

A 2016 study by Atwood et al. updated the model used by Amstrup et al. (2010) with updated sea ice forecasts and new information about stressors.[128] The study concluded that polar bears in the Divergent ecoregion (where the SBS population lives) attained a clearly dominant probability of greatly decreased survival at all future decadal time periods for all three greenhouse gas forcing scenarios (RCP 2.6, 4.5, and 8.5).[129] Another recent study concluded that the probability of reductions in the median global polar bear population would be greater than 30%, 50%, and 80% over three generations (35–41 years) at 0.71 (range 0.20–0.95), 0.07 (range 0–0.35), and less than 0.01 (range 0–0.02), respectively.[130] However, as explained above, the Alaska LNG Project will cause greenhouse gas emissions, both directly and indirectly, thereby increasing the primary threat to polar bears and frustrating recovery. FERC's FEIS and biological assessment fail to acknowledge this reality or otherwise address how new oil and gas development can be consistent with the recovery of polar bears.

4. *FERC's FEIS fails otherwise to consider properly impacts to marine mammals*.

FERC's FEIS otherwise fails to take a hard look at the impacts on marine mammals

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[126] *Id*.
[127] *Id.*
[128] T.C. Atwood *et al., Forecasting the relative influence of environmental and anthropogenic stressors on polar bears*, 7 ECOSPHERE e01370 at 14 (2016).
[129] *Id.* at 12.
[130] E. V. Regehr *et al., Conservation status of polar bears (Ursus maritimus) in relation to projected sea-ice declines*, 12 BIOL. LETT. 20160556 at 4 (2016).

by discounting both the risks of ship strikes and ship noise, as well as other forms of noise pollution. FERC's FEIS fails to consider the seriousness of the harms posed by ship noise and ship strikes to the threatened and endangered marine mammals that will be affected by the Alaska LNG Project.

While FERC acknowledges these threats, it largely dismisses the significance of both. With respect to ship noise, the agency states that the "ephemeral nature" of transiting vessels would render vessel noise impacts "minor." FEIS at 4-385. If this rationale were to be accepted, noise from transiting ships would never impact marine mammals because the disturbance is always "ephemeral." A robust body of scientific research undermines this conclusion.[131] The cumulative effect of "ephemeral" ship noise from different vessels can lead to significant and disruptive noise in the marine environment.[132]

With respect to ship strikes, FERC again acknowledges the problem but proceeds to dismiss its potential significance. FERC repeatedly states that ship strikes pose no real threat to marine mammal species because "the risk . . . would be minimized with implementation of vessel traffic conservation measures." *E.g.*, FEIS, App. O at O-91, O-95, O-112 (regarding blue whales, bowhead whales, and fin whales, respectively). These vessel conservation measures are

[131] *See, e.g.*, R. S. Sousa-Lima & C. W. Clark., *Modeling the Effect of Boat Traffic on the Fluctuation of Humpback Whale Singing Activity in The Abrolhos National Marine Park, Brazil*, 36 CANADIAN ACOUSTICS 174 (2008); Castellote *et al.* 2018; C. W. Clark *et al.*, *Acoustic masking in marine ecosystems: intuitions, analysis, and implication*, 395 MAR. ECOL. PROG. SER. 201 (2009); M. L. Melcón *et al.*, *Blue whales respond to anthropogenic noise*, 7 PLOS ONE e32681 (2012); A. A. Bas *et al.*, *The effects of marine traffic on the behaviour of Black Sea harbour porpoises (*Phocoena phocoena relicta*) within the Istanbul Strait, Turkey*. 12 PLOS ONE e0172970 (2017).

[132] *See, e.g.*, Castellote *et al.* 2018 at 70 (noting that commercial ships were the most prominent source of anthropogenic noise across Cook Inlet, accounting for 63% of overall anthropogenic noise time).

not described, leaving the public to wonder what they are and how they might help adequately reduce the risk.

While FERC rightly states that the primary factor determining the lethality of a ship strike is vessel speed, and that slower vessel speeds reduce lethality, the agency acknowledges that vessels associated with the project will travel at speeds up to 26 knots. FEIS at 4-393, App. O at O-90. This is more than twice the speed (12 knots) at which the risk of lethal harm to marine mammals is significantly reduced. *Id.* at 4-393. The agency further describes substantial increases in overall vessel traffic as a result of the project; for example, vessel traffic in Cook Inlet will increase up to 74% over baseline levels, increasing the risk of strikes for the critically endangered Cook Inlet beluga whale and other marine mammal species that use the Cook Inlet area. FEIS at 4-393 to 4-394.

FERC's computation of the number of potential strikes on various marine mammal species as a result of the Alaska LNG Project is likewise faulty because it neither considers the full geographic or operational scope of the project nor accounts for undetected strikes. FERC lowballed the potential harm by only considering potential strikes in Cook Inlet and the Gulf of Alaska, omitting Prudhoe Bay and the Bering, Chukchi, and Beaufort Seas. Even in Cook Inlet, the agency omitted strikes related to certain activities such as pipelaying.

FERC further and inappropriately minimized ship strike risk to whales by not accounting for unreported whale strikes. While noting that ship strikes often go unreported, FEIS, App. O at O-104, the agency failed to address this issue when determining how many whales are likely to be struck by Alaska LNG Project-associated vessels. FERC also discounted ship strike risk to multiple species. The agency declined to estimate strikes of bearded seals, ringed seals, Stellar sea lions, blue whales, bowhead whales, North Pacific right whales, and sei whales, citing lack of

data (though noting their vulnerability per the scientific literature). *See, e.g.*, FEIS, App. O at O-90 (showing a failure to estimate strikes of these species and noting the vulnerability of these species). The agency thus wrote off potential impacts of vessel strikes on these species, again under the assurance that "vessel traffic conservation measures" will be sufficiently protective. The agency further failed to consider properly behavioral attributes that may make certain species more vulnerable to ship strikes. For example, humpback whales spend more time at or near the surface during migration, feeding, and calving. FEIS, App. O at O-116. This places them in the path of transiting vessels. Unsurprisingly, there were over 100 confirmed humpback whales strikes in Alaska between 1978 and 2011. *Id.* at O-119. The agency's failure to describe what "vessel traffic conservation measures" will address whales whose behaviors place them more squarely in harm's way, and the efficacy (or lack thereof) of such measures—particularly in the turbulent waters off Alaska—violates NEPA.

Moreover, FERC underestimates the extent of the project's take of marine mammals. As described by the Marine Mammal Commission in comments on NMFS's proposed rule to authorize take of marine mammals incidental to the Alaska LNG Project, NMFS proposed to use AGDC's method for estimating days of pile-driving activities, which sums fractions of days in which activities occur to generate the total number of days for each proposed activity.[133] Such an approach, however, is inconsistent with NMFS's policy for enumerating takes for construction activities in general and underestimates the numbers of days of pile driving activity, and hence Level A and B harassment takes.[134] As the MMC explained:

> Table 9 in the Federal Register notice indicated that 8 killer whales were estimated to be taken by Level B harassment in Year 1, based on 33 days of pile driving planned for that

[133] P. O. Thomas, Marine Mammal Commission, Letter to J. Harrison, NMFS at 7 (Aug. 5, 2019).
[134] *Id.*

> year (as indicated in Table 1). To account for group size and other factors, NMFS proposed to authorize taking of up to 10 killer whales by Level B harassment (see Table 9 in the notice). However, the Commission estimates that as many as 19 killer whales could be taken by Level B harassment in Year 1 if one considers the actual number of days that pile driving would occur (78 days), as indicated in Table 20 of AGDC's application.[135]

The proposed numbers of Level B harassment takes are similarly underestimated for humpback whales, harbor porpoises, harbor seals, and Steller sea lions in Year 1, with a similar trend for these species for Years 2 through 5 of the Alaska LNG Project.

5. *FERC failed to consider properly the cumulative impacts on wildlife*.

FERC also failed to take a hard look at the cumulative impacts on wildlife. As one example, with respect to increased turbidity, noise, and construction impacts, FERC arbitrarily concludes that "cumulative impacts on marine mammal species would be minor." FEIS at 4-1189. This conclusion is based, in part, on FERC's decision to truncate the cumulative impacts analysis to only those projects "in the same geographic scope as the Alaska LNG Project," expressly ignoring "[t]he effects of more distant projects." *Id.* at 4-1158. For example, FERC assumes that the Hilcorp Liberty Development Project in the Beaufort Sea would likely have no cumulative impacts to marine water resources because that project is twenty-five miles away. *Id.* at 4-1177. Similarly, FERC assumes that because dredging in the Beaufort Sea for the Point Thomson Unit Expansion Project would occur 55 miles to the east, "no cumulative impacts on marine mammals would result from these activities." *Id.* at 4-1188.

Such an approach violates NEPA because it fails to consider the impacts of the Alaska LNG Project on migratory species such as large whales that are exposed to multiple stressors throughout their range. *See Nat. Res. Def. Council v. Hodel*, 865 F.2d 288, 298-300 (D.C. Cir. 1988) (EIS was inadequate where it only evaluated impacts to species in each individual

[135] *Id.* (citations omitted).

planning region without also evaluating the impacts from projects in multiple regions). And it also contradicts other statements in FERC's analysis that acknowledge cumulative impacts to marine mammals from other more distant projects could be significant. *See, e.g.*, FEIS at 4-1187 ("Cumulative 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 Alaska's marine environment."); *id.* at 4-1188 ("[N]oise generated by pile driving in multiple locations could make it difficult for marine mammals to avoid these disturbances.").

For the impacts FERC did purport to consider, its "analysis" of cumulative impacts amounts to little more than general statements about activities that impact wildlife. The cumulative impacts analysis for protected species such as marine mammals and species protected under the ESA is particularly lacking. For example, FERC's analysis of cumulative impacts to ESA-protected species simply lists species impacted by the Alaska LNG Project rather than describing what those impacts will be. *See* FEIS at 4-1193 to 4-1195. While FERC may not consider the Alaska LNG Project to have significant impacts on imperiled wildlife, that does not absolve the agency from its duty under NEPA to consider the combined impacts of impacts to wildlife from the Alaska LNG Project and other industrial activity. As the Ninth Circuit has explained:

> [T]he addition of a small amount of [pollution] to a [waterway] may have only a limited impact on [fish] survival, or perhaps no impact at all. But the addition of a small amount here, a small amount there, and still more at another point could add up to some-thing with a much greater impact, until there comes a point where even a marginal increase will mean that *no* [fish] survive.

Klamath-Siskiyou Wildlands Ctr., 387 F.3d at 994 (emphasis in original). The same is true for the incidental take of species such as Cook Inlet beluga whales and North Pacific right whales—the addition of one take here, and one take there, could add up to cumulative significant impacts,

particularly considering the highly imperiled status of these species. Indeed, NMFS has repeatedly recognized that every animal counts when it comes to ensuring the recovery of both species, and that reducing the threats caused by the Alaska LNG Project (such as noise pollution and ship strikes) is a priority for ensuring their survival. *See* 40 C.F.R. § 1508.7 (defining cumulative impacts); *Kern v. Bureau of Land Mgmt.*, 284 F.3d 1062, 1075 (9th Cir. 2002) (the cumulative impact analysis "must provide 'a useful analysis of the cumulative impacts of past, present, and future projects.'") (quoting *Muckleshoot Indian Tribe*, 177 F.3d at 810).[136] The same is true for species like polar bears who are taken, and will continue to be taken, incidental to oil and gas activities in the Arctic and are threatened by the ongoing loss of their sea ice habitat that the Alaska LNG Project will exacerbate.

FERC's analysis nowhere attempts to quantify the total take suffered by species affected by the Alaska LNG Project, or to otherwise analyze the impacts of the Alaska LNG Project in light of prior, existing, and reasonably foreseeable harms to polar bears, Cook Inlet beluga whales, North Pacific right whales, caribou, and the other wildlife to be affected by the Alaska LNG Project. *See Te-Moak Tribe of W. Shoshone v. U.S. Dep't of the Interior*, 608 F.3d 592, 605-06 (9th Cir. 2010) (cumulative impact analysis was insufficient because it failed to analyze impacts in light of other projects that would impact the same resources). While the FEIS includes a chart that appears to contain the acreage of designated polar bear critical habitat that would be affected by various components of the project, FEIS at Tbl. 4.8.1-2, mere lists or tables are insufficient to constitute the hard look required by NEPA. For example, "[a] calculation of the total number of acres to be harvested in [a] watershed is a necessary component of a

[136] *See, e.g.*, NMFS, Stock Assessment Report: Beluga Whale (*Delphinapterus leucas*): Cook Inlet Stock at 112 (December 30, 2018) ("even one take every 2 years may still impede recovery"); NMFS, Species in the Spotlight at 4; Muto *et al.* 2019.

cumulative effects analysis, but it is not a sufficient description of the actual environmental effects that can be expected from logging those acres." *Klamath-Siskiyou Wildlands Ctr.*, 387 F.3d at 995. Similarly, "a tally of the total road construction anticipated in [an area] is definitely a good start to an analysis [but] it is not a description of *actual* environmental effects." *Id.*

D. FERC failed to take a hard look at impacts of air pollution from the Alaska LNG Project.

FERC's FEIS does not adequately disclose or analyze numerous other harmful impacts from the Alaska LNG Project related to air pollution. Such failures render its analysis arbitrary and capricious.

1. *FERC failed to take a hard look at the impacts of black carbon.*

FERC failed to properly examine and disclose the impacts of black carbon. Black carbon, or soot, consists of particles or aerosols released through the inefficient burning of fossil fuels, biofuels, and biomass.[137] Diesel engines are a particularly important source, with up to 80% of their sub-2.5 micrometer particulate matter composed of black carbon.[138] Black carbon warms the atmosphere, but it is a solid, not a gas. Unlike greenhouse gases, which warm the atmosphere by absorbing longwave infra-red radiation, soot has a warming impact because it absorbs shortwave radiation, or visible light.[139] Black carbon is an extremely powerful greenhouse pollutant. Scientists have described the average global warming potential of black carbon as about 500 times that of carbon dioxide over a 100-year period.[140] Black carbon

[137] P. K. Quinn *et al.*, *Short-lived pollutants in the Arctic: Their climate impact and possible mitigation strategies*, 7 ATMOS. CHEM. PHYS. DISCUSS. 15,669 (2007) (Quinn *et al.* 2007).
[138] V. Rao & J. H. Somers, U.S. EPA, *Black Carbon as a Short-Lived Climate Forcer: A Profile of Emission Sources and Co-Emitted Pollutants* (undated).
[139] W. L. Chameides & M. Bergin, *Soot takes center stage*, 297 SCIENCE 2214 (2002).
[140] J. Hansen *et al.*, *Dangerous human-made interference with climate: a GISS modelE study*, 7 ATMOS. CHEM. & PHYS. 2287 (2007); see also M. S. Reddy & O. Boucher, *Climate impact of black carbon emitted from energy consumption in the world's regions*, 34 GEOPHYS. RES. LETT. L11802 (2007) (Reddy & Boucher 2007).

contributes to Arctic warming through the formation of "Arctic haze" and through deposition of particles on snow and ice, which transforms heat-reflecting surface into heat-absorbing surface and thereby increases heat absorption.[141]

Soot also contributes to heating when it is deposited on snow because it reduces reflectivity of white snow and instead tends to absorb radiation. A recent study indicates that the direct warming effect of black carbon on snow can be three times as strong as that due to carbon dioxide during springtime in the Arctic.[142] Black carbon emissions that occur in or near the Arctic contribute the most to melting conditions in the far north.[143]

In recognition of the harms of black carbon emissions, the eight-nation Arctic Council in April 2015 adopted a framework agreement to hasten reduction of black carbon and methane emissions, in which those nations (including the United States) committed to taking "enhanced, ambitious, national and collective action to accelerate the decline in our overall black carbon emissions."[144] The framework established an Expert Group on Black Carbon and Methane, which met in 2017 and recommended "that black carbon emissions be further collectively reduced by at least 25-33 percent below 2013 levels by 2025.[145]

Allowing black carbon emissions to increase in the Arctic as the result of oil and gas development would accelerate Arctic warming and consequent loss of seasonal sea ice, leading

[141] Quinn *et al.* 2007; Reddy & Boucher 2007.
[142] M. G. Flanner *et al.*, *Present-day climate forcing and response from black carbon in snow*, 112 J. GEOPHYS. RES. D11202 (2007).
[143] Reddy & Boucher 2007; Quinn *et al.* 2007.
[144] Enhanced Black Carbon and Methane Emissions Reductions: An Arctic Council Framework for Action, Annex 4, Iqaluit 2015 SAO Report to Ministers (Apr. 2015).
[145] Arctic Council Secretariat, Expert Group on Black Carbon and Methane: Summary of progress and recommendations at 5 (2017).

to the extinction of the polar bear and other species. Yet FERC's FEIS completely failed to analyze the significant impacts from black carbon emissions.

FERC attempted to justify this failure in response to the Center for Biological Diversity's comments by stating that black carbon is not a regulated pollutant under the Clean Air Act but is a component of particulate matter. *See* FEIS, App. CC at CC-756 to 57. This attempt fails for several reasons. First, because black carbon is a subset of particulate matter, measures aimed at generally reducing particulate matter are untailored to black carbon's climate warming and reflectivity reducing characteristics and may not result in reductions in black carbon emissions. Black carbon not only has impacts on human health, it also affects visibility, harms ecosystems, and exacerbates global warming. Second, the Clean Air Act and NEPA serve different ends and are considerably different in purpose and scope. NEPA requires consideration and disclosure of impacts to inform decision-making and the public with the goal of implementing this nation's environmental policies; the Clean Air Act focuses on quantitative standards with specific regulatory consequences. Because NEPA is focused on providing information needed to make better decisions, NEPA necessarily sweeps in more than just those impacts that would violate substantive mandates in other laws. Agencies are required to consider in their NEPA documents impacts at levels below regulatory limits and also must consider impacts of actions even if those actions do not violate a substantive state or federal law. *See S. Fork Band Council of W. Shoshone of Nev. v. U.S. Dep't of the Interior*, 588 F.3d 718, 726 (9th Cir. 2009) (per curiam) (rejecting argument that "off-site impacts need not be evaluated because the Goldstrike facility operates pursuant to a state permit under the Clean Air Act"); *WildEarth Guardians v. U.S. Office of Surface Mining, Reclamation & Env't*, 104 F. Supp. 3d 1208, 1229 (D. Colo. 2015) *order vacated and appeal dismissed as moot by* 652 F. App'x 717 (10th Cir. 2016).

2. *FERC failed to take a hard look at the impacts of sulfur and acid deposition.*

The FEIS also fails to analyze adequately the impacts of sulfur and acid deposition from the proposed project, particularly in nationally designated protected areas. Air emissions from the gas treatment plant, compression stations, and the LNG facility will exceed threshold levels of sulfur and acid deposition, causing significant impacts in nationally designated protected areas. *See* FEIS at 4-943 (nitrogen deposition impacts from gas treatment plant would exceed deposition thresholds for the Arctic National Wildlife Refuge ("the Refuge")); *id.* at 4-955 (sulfur deposition thresholds could be exceeded by air emissions from the Galbraith Lake Compressor Station at the Refuge); *id.* at 4-974 (LNG emissions "could have a long-term significant impact on acid deposition at the Tuxedni NWR, DNRR, Kenai NWR, and Lake Clark NPP"); *id*. at 4-958, Tbl. 4.15.5-19; 4-955 ("compressor station and heater station operation could have significant impacts on ecosystems from nitrogen deposition in Class I and Class II nationally designated protected areas"); *id*. at 5-42 ("the FLM-established visibility threshold and sulfur deposition threshold at the Arctic National Wildlife Refuge could be exceeded by emissions from the Galbraith Lake Compressor Station. FLM-established nitrogen deposition thresholds at multiple Class I and II areas—including Arctic National Wildlife Refuge, Gates of the Arctic NPP, Gates of the Arctic Preserve, Yukon Flats NWR, Kanuti NWR, DNPP, and Kenai NWR—could also be exceeded by operation of the stations").[146] Such emissions would also harm visibility in these areas, degrading the quality of recreation. *See, e.g.*, FEIS at 4-943 (visibility impacts from the gas treatment plant could exceed threshold at the Refuge); *id.* at 4-943 (identifying cumulative impacts to visibility in the Refuge and Gates of the Arctic National

[146] *See also* Federal Land Managers' Air Quality Related Values Work Group (FLAG), Phase I Report—Revised (2010), Natural Resource Report NPS/NRPC/NRR—2010/232 (FLAG Phase I Report).

Park and Preserve); *id.* at 4-946 (gas treatment plant emissions would exceed the visibility change threshold at the Refuge and "could have a long-term significant impact on regional haze at [the Refuge]"); *id.* at 4-974 (LNG emissions could have a significant impact on regional haze at the Kenai NWR); *id.* at 4-955 (visibility plume perceptibility thresholds could be exceeded by the Galbraith Lake Compressor Station at the Refuge and by the Healy and Honolulu Creek Compressor Stations at the Denali National Park and Preserve).

The FEIS acknowledges that in cases where the deposition analysis threshold is exceeded, additional information is required, including ecosystem sensitivity in the affected areas, to determine whether adverse deposition effects would occur. FEIS at 4-943. Yet the FEIS fails to present any additional information about the sensitivity of affected ecosystems to sulfur and nitrogen deposition and fails to analyze the potential impact of acid rain and nitrogen deposition on the protected areas. Certain ecosystems are particularly sensitive to increased nitrogen, including alpine, arctic, and meadow ecosystems and wetlands. As the National Park Service (NPS) explains, "[t]hese systems generally evolved under low nitrogen conditions and are often nitrogen-limited. Very small nitrogen increases can alter nutrient cycling and plant species interactions in these areas."[147] The FEIS fails to analyze the impacts of sulfur and nitrogen deposition on these protected areas, including the impacts on the environmental resources that are threatened by acid and nutrient enrichment.

[147] NATIONAL PARK SERVICE, Nitrogen Risk Assessment, https://www.nps.gov/maps/air/nitrogen-risk-assessment/?ecosystem-sensitivity (under background tab) (last visited on June 20, 2020); *see also* National Park Service, *Evaluation of the Sensitivity of Inventory and Monitoring National Parks to Nutrient Enrichment Effects from Atmospheric Nitrogen Deposition Main Report*, Natural Resource Report NPS/NRPC/ARD/NRR—2011/313 at 9-17 (Feb. 2011) (identifying nutrient enrichment effects of nitrogen deposition).

The FEIS also fails to analyze the potential impacts on visibility in these protected areas. For example, after noting that gas treatment plant operations would exceed visibility thresholds, the FEIS simply concludes that visual impacts would be "moderate" to the Gates of the Arctic National Park and Preserve and that emissions could have a long-term significant impact on regional haze in the Refuge. FEIS at 4-946.

The FEIS therefore provides an inadequate basis for FERC and federal land managers to determine whether the proposed project would have an adverse impact on air quality related values of federally designed protected areas.[148] If the proposed action will likely cause or contribute to an adverse effect to air quality related values, the federal land manager (FWS or the NPS may recommend permit conditions that ensure mitigation, including stricter emissions controls and effective emissions offsets. If no mitigation is possible, NPS or FWS may recommend denial of the permit.[149]

Instead of assessing the potential impacts of air pollution on federally protected areas, FERC simply recommended in the DEIS that AGDC "prepare a plan that would ensure that the predicted visibility impacts and deposition impacts are below their associated NPS thresholds," and which would not be required until sometime prior to construction. DEIS at 4-939; *see also id*. at 4-909 (recommending that AGDC "mitigate emissions associated with the [gas treatment plant] to reduce predicted visibility impacts and deposition impacts to below their associated thresholds."); *id.* at 5-59. The Department of the Interior commented that any air permits should incorporate any emission limits agreed to under the mitigation plan; mitigation should be

[148] *See* FLAG Phase I Report at 66 ("In cases where a source's impact equals or exceeds the DAT, the NPS/FWS will make a project specific assessment of whether the projected increase in deposition would likely result in an 'adverse impact' on resources, considering existing AQRV conditions, the magnitude of the expected increase, and other factors.").
[149] *Id*. at 66-67.

considered "prior to constructing and finalizing minor source construction permits and associated Title V Operating Permits." FEIS, App. CC at CC-273 (Department of Interior comment FA3-78, enclosed with the Department's November 4, 2019 letter to FERC.). EPA similarly commented on the late-submitted Class I and Class II air emissions analysis to indicate its support for additional mitigation of potentially significant impacts on regional haze and acid deposition in Class I and II areas and request that mitigation plans to reduce operational emissions be included in FERC's Final Order. EPA Supplemental Comments at 2.

Incredibly, the FEIS walks back even the recommendation of a mitigation plan. The FEIS acknowledges that emissions would exceed screening-level visibility extinction thresholds and sulfur and nitrogen deposition thresholds at some Class I or Class II nationally designated protected areas, which "could have a significant impact on these areas." FEIS at 4-1210. Further, the FEIS states that "without mitigation, emissions from the gas treatment plant and Liquefaction Facilities *could* have a significant impact on regional haze and acid deposition in some Class I and Class II nationally designated areas." FEIS at 4-975 (emphasis added). Yet FERC made no effort to actually take a hard look at the impacts.

Enforceable mitigation measures "may be identified" during the air permitting process overseen by ADEC,[150] but FERC has washed its hands of the issue without even demanding a response to information requests to understand what the impacts will be, what mitigation is necessary, and even whether the mitigation is plausibly capable of being implemented through

[150] *See* FEIS, App. CC at CC-273 ("Additional mitigation measures may be identified during the PSD permitting process to further minimize predicted visibility and deposition impacts on Class I and Class II nationally designated protected areas."); *id*. at CC-659 ("The air quality permitting process, currently being completed by ADEC, provides additional opportunity to incorporate enforceable mitigation measures, if needed, based on input from FLMs. See the response to comment FA3-78.")

the air permitting process. *See* FEIS p. 4-943 ("While preparing the draft EIS, we issued information requests on July 28, 2017 and February 15, 2018 to AGDC requesting that they work with the FLMs to establish a mitigation strategy to ensure that air emissions from the proposed facilities would not negatively affect nearby Class I and Class II nationally designated protected areas. To date, AGDC has not provided a mitigation strategy or determined acceptable thresholds agreed upon by the FLMs."). FERC's failure to include specific, enforceable mitigation measures makes it unclear how the agency will ensure there will be no significant impacts to air quality—*i.e.*, that development will not adversely impact human health and the natural environment and will not result in significant deterioration of air quality. Refusing to analyze the significance of these emissions inhibits FERC and interested parties from "properly evaluat[ing] the severity of the adverse effects" of the project. *Robertson*, 490 U.S. at 351. FERC's failure to analyze mitigation measures sufficiently also violates NEPA. *See infra* pp. 42-122.

E. FERC failed to take a hard look at the impacts from ice and gravel roads.

FERC's FEIS also fails to consider adequately the numerous harmful impacts from the ice and gravel roads that would be constructed to support project activities. Studies have shown that roads and pipelines rapidly expand flooding and thermokarst in the Arctic; for example, thermokarst has expanded at a rate of 9.2 hectares a year over the history of the Prudhoe Bay Oilfield.[151] Gravel roads cause permanent hydrological changes to the landscape, altering permafrost freeze-and-thaw cycles and creating issues related to thermokarst. These effects can include deeper permafrost thaw, earlier snowmelt in close proximity to the road, and alterations

[151] M. K. Raynolds *et al.*, *Cumulative geoecological effects of 62 years of infrastructure and climate change in ice-rich permafrost landscapes, Prudhoe Bay Oilfield, Alaska*, 20 GLOBAL CHANGE BIOLOGY 1211 (2014).

to hydrology.[152] Gravel roads also generate significant amounts of dust; studies suggest the dust can affect soil and vegetation nearly 3,280 feet away.[153] The dust can smother vegetation and lead to a warming effect that can increase thaw in the summer, which in turn can lead to changes in geomorphology.[154] Ice roads can also have major impacts that persist into other seasons, severely altering hydrology and natural thermal regimes, and causing a wide variety of other ecological impacts.[155] As EPA noted multiple times, *see* EPA Comments at 19; EPA Supplemental Comments at 2, FERC inappropriately assumes that 100% fugitive dust control will be achieved when temperatures are below freezing. FEIS at 4-930. Dust emissions can occur when the ground is not covered by ice and snow and during material handling. EPA Comments at 19. As a result, FERC has failed to take the necessary hard look at particulate matter emissions associated with the project.

F. FERC failed to take a hard look at impacts to wetlands.

[152] *See, e.g.*, D. A. Walker *et al.*, *2016 ArcSEES Data Report: Snow, thaw, temperature, and permafrost borehole data from the Colleen and Airport sites, Prudhoe Bay, and photos of Quintillion fiber optic cable impacts, North Slope, Alaska*, Alaska Geobotany Center Data Report AGC18-01 (2018); M. K. Raynolds *et al.*, *60 years of landscape change within an arctic oilfield, Prudhoe Bay, Alaska, in* 12th International Circumpolar Remote Sensing Symposium (A. Colpaert *et al*. eds., 2012).

[153] T. Kumpula *et al.*, *Land use and land cover change in Arctic Russia: Ecological and social implications of industrial development*, 21 GLOBAL ENVIRONMENTAL CHANGE 550, 559 (2011) ("For example, although unpaved roads are just 15–20 m wide, the zones of impact reach up to 1 km on either side of the road, via windblown dust."); I. H. Myers-Smith *et al.*, *Cumulative Impacts on Alaskan Arctic Tundra of a Quarter Century of Road Dust*, 13 ECOSCIENCE 503 (2006).

[154] *See, e.g.*, D.A. Walker & K.R. Everett, *Road Dust and Its Environmental Impact on Alaskan Taiga and Tundra*, 19 ARCTIC & ALPINE RESEARCH 479 (1987); D. E. Ackerman & J. C. Findlay, *Road dust biases NDVI and alters edaphic properties in Alaskan arctic tundra*, 9 SCI. REP. 214 (2019).

[155] B. Sullender, Audubon Alaska, *Ecological Impacts of Road- and Aircraft-Based Access to Oil Infrastructure* at 16–17 (July 2017) (Sullender 2017).

The description of the project's extensive adverse impacts to wetlands in FERC's FEIS is insufficient and inaccurate, in violation of NEPA. The FEIS acknowledges the project will have significant adverse impacts on over 10,000 acres of wetlands and their many crucial functions, including carbon sequestration, water storage, groundwater recharge, nutrient cycling, fish and wildlife habitat, shoreline stabilization, and drainage. *See* FEIS at 4-245, 4-234 to 35. It also acknowledges that while the agency predicts some of these impacts would dissipate within 30 years or less, the estimated majority of wetlands impacts would be permanent. *Id.* at 4-235. However, these broad acknowledgements alone do not constitute a hard look. They are not adequate to fulfill the purposes of an FEIS, which include providing a full and fair discussion of significant environmental impacts and providing all information essential to a reasoned choice among alternatives. 40 C.F.R. §§ 1502.1, 1502.22.

As EPA explained in its comments on the DEIS, FEIS, App. CC at CC-223 to 24, the FEIS lacks key information about the severity and nature of impacts to wetlands, both in the aggregate and with regard to each affected wetland or ecosystem. FERC failed to remedy this error in its final NEPA analysis. The FEIS details in the abstract a wide variety of ways that construction modes and other project activities could affect wetlands, ranging from partial loss of function (for example, due to small increases in turbidity) to total loss of function (for example, from conversion of wetlands to uplands through filling). *See, e.g.*, FEIS at 4-248. It estimates the total number of acres affected and for how long, broken down by wetland classification. *Id.* at 4-235-36, Tbls. 4.4.2-1, 4.4.2-2. But the FEIS does not connect the dots by saying *how* those acres will be affected—*i.e.*, which functions will be impaired and how severely. There is no way for the reader to discern, for example, whether for the 8,225 acres "permanently' affected, the loss of wetland functions will be complete or only partial. Nor is there any attempt in the FEIS

to estimate impacts in terms of specific wetland functions or relevant locations/ecosystems, such as the total loss of carbon sequestration capacity due to wetland damage; the total loss of water storage capacity by wetland, region, or locality; or the nature, extent, and relative importance of fish and wildlife wetland habitat loss. Without this critical information, the only clear message the FEIS conveys is that wetlands impacts will be extensive and significant, which is not adequate. NEPA demands information sufficient to allow the agency and public to make choices among alternatives, including the no action alternative and alternative routes. That means forecasting not just what kinds of impacts will occur and how many acres will be affected, but about how much of each kind of impact will occur, how, where, and in what relevant environmental context. *See Klamath-Siskiyou Wildlands Ctr.*, 387 F.3d at 995 ("A calculation of the total number of [affected] acres . . . is a necessary component of" environmental analysis, "but it is not a sufficient description of the actual environmental effects that can be expected from [affecting] those acres.").

Just one example of how the lack of specificity about wetland impacts thwarts meaningful analysis is in the FEIS's discussion of impacts to birds. The FEIS notes that the Mainline Pipeline would cross the Alaska Range Foothills Important Bird Area where sensitive and watch list species like the Hudsonian godwit and red-throated loon occur. FEIS at 4-516. The FEIS reiterates that the project will cause permanent habitat loss in that region in some unspecified and unquantified "areas that are filled with granular fill and/or where full vegetation recovery is not possible," adding, "[s]pecies such as Hudsonian godwit and red-throated loon that use wetlands for breeding or foraging would be forced to find alternative habitats." *Id.* From that information alone, there is no way for FERC or the reader to understand how serious the impact is. The FEIS is not specific about how many acres of wetlands in the relevant area

will be filled, dewatered, fragmented, polluted, or otherwise affected; how important those acres are to Hudsonian godwit and red-throated loon; or whether suitable alternative habitats are actually available to these species. Thus, there is no way to fairly determine the project's impact on those species, or to compare the impacts of project alternatives.

The FEIS's alternatives section further highlights how the lack of detailed information about wetlands impacts impaired informed decision-making. When the FEIS alternatives section mentions wetlands impacts, it differentiates between alternatives solely in terms of acres or miles "affected." *See* FEIS at 3-7, 3-9, 3-11, 3-14, 3-19, 3-21, 3-23, 3-26, 3-27. There is no discussion about the specific nature of the impacts involved, the relative importance of each wetland for various functions and species, or the cumulative impact of the project alternatives in combination with other impacts and trends. In short, there is no meaningful way to compare impacts to wetlands by alternative.

Even the limited information that the FEIS provides about wetland impacts appears to be inaccurate. As commenters pointed out, AGDC reported a total of 10,323.78 acres of permanent impacts to wetlands in its application to the Army Corps of Engineers, compared to only 8,225 acres of permanent impacts to wetlands AGDC reported to FERC. Army Corps Permit Supplemental Information at 74-78, Tbl. 6; FEIS at 4-233. FERC dismisses the discrepancy for two reasons. First, FERC states that the Army Corps total includes riverine, lacustrine, and marine waters in addition to wetlands, and that those impacts to non-wetlands are addressed elsewhere in the FEIS. FEIS at 4-233. However, subtracting riverine, lacustrine, and marine waters from the Army Corps total only reduces the total to 9,545.82 acres, which still leaves over

1,300 acres reported in the Army Corps application that the FEIS does not address.[156] Second, FERC notes "the wetland impact data that AGDC filed with FERC was based on their field and desktop wetland studies; the wetland data in the [Department of the Army] permit application is based on the [Army Corps]-approved preliminary jurisdictional determination." FEIS at 4-233 to 34. However, that does not explain why the Army Corps total would be higher; as the FEIS itself notes, jurisdictional wetlands are only a subset of the total wetlands affected by the project, FEIS at 4-227 (noting that "most" of the wetlands affected by the project are subject to the Corps' jurisdiction), so they should comprise a smaller number of the total affected wetland acres. Thus, it appears that over 1,300 acres of permanent impacts to wetlands are wholly unaccounted for in the FEIS.

FERC maintains the discrepancy need not be reconciled. "While there are discrepancies between these data," the agency explains, "we have reviewed them and concluded that they do not change any of our conclusions regarding impact significance." FEIS at 4-234. That position incorrectly implies that the sole or overriding purpose of NEPA analysis is to determine and state whether an impact is significant or not. In order to allow the agency and public to make a reasoned choice among alternatives as NEPA requires, the FEIS must at a minimum explain how the project and alternatives will affect the environment, and where. FERC's FEIS cannot serve even that fundamental purpose because it fails to describe at least 1,300 acres of permanent

[156] *See* Army Corps Permit Supplemental Information at 74-78, Tbl. 6. The "Wetlands Impacts Total" in the Army Corps application, minus all the acreages listed as permanently affected during construction for NWI Classes R1, R2, R3, R4, L1, L2, M1, and M2 (riverine, lacustrine, and marine classes) for all project facilities, is 9,545.82 acres. *See id.* That total is still 1,320.82 acres more than the total acres of wetlands listed as permanently affected by the project in the FEIS. FEIS at 4-233.

impacts to wetlands that AGDC reported to the Army Corps, and fails to provide any non-arbitrary explanation for the omission.

In addition to the discrepancies in total permanent wetland impacts between the FEIS and Army Corps application, inconsistencies in FERC's own analysis suggest that its estimates of total affected acres exclude many of the project's serious wetland impacts. Of the 8,225 acres the FEIS states will be permanently affected, 6,220 acres would be converted to uplands by fill, 195 acres of palustrine forested wetlands would be converted to other types of wetlands "as a result of clearing and operational vegetative maintenance," and "[a]bout 1,809 acres of wetlands would be permanently affected by material sites, disposal sites, a water reservoir, and a stormwater pond." FEIS at 4-233. Of the 3,535 acres temporarily affected, the FEIS states these effects "are typically related to construction activities and would be restored to pre-construction conditions over time." *Id.* Yet, the FEIS elsewhere describes other impacts to wetlands, including permanent impacts, that do not appear to be included in any of the FEIS totals and that are not quantified anywhere in the FEIS. For example:

- "The conversion of wetlands to uplands would affect adjacent wetlands by fragmenting them into smaller sections and changing natural drainage patterns." *Id.* at 4-234.
- "Adjacent wetlands could also experience increased turbidity and sedimentation because fine particles would be transported from granular fill to adjacent wetlands by stormwater runoff during construction and operation." *Id.*
- "Equipment and vehicle traffic could permanently affect adjacent wetlands by creating fugitive dust. Dust deposition could permanently affect water quality and vegetation in wetlands." *Id.* at 4-237.
- "Blasting activities required for material site development and Mainline Pipeline trenching could affect adjacent wetlands, soils, and vegetation. Flyrock from blasting deposited outside the disturbance area could accumulate and create a layer of fill on top of wetlands, crush vegetation, cover existing soils, and diminish water storage capacity." 4-238.
- "In addition, permafrost wetlands are highly susceptible to anthropogenic impacts. For example, granular fill would increase soil thermal conductivity that, when coupled with

> increased solar radiation, would lead to permafrost thaw, causing thermokarst and ponding as the granular fill settles. Adjacent to granular fill areas, related construction activities (*e.g.*, clearing, grading, and fugitive dust from vehicles) could further degrade permafrost wetlands." 4-245.

The FEIS misleadingly omits these serious impacts from the "total" number of affected wetland acres and fails to estimate their extent or provide the contextual information necessary to determine their significance.

Damage to wetlands spanning the entire project route across State of Alaska is one of the Alaska LNG Project's most significant and extensive environmental impacts. FERC's failure to take a hard look at these impacts violates NEPA.

G. FERC failed to take a hard look at the impacts of hydrostatic test water discharges.

Between May and October, AGDC will hydrostatically test 20-mile sections of the pipeline by filling it with water and pressurizing it to ensure it can withstand operation without leaking. FEIS at 2-58. Afterward, up to 297.6 million gallons of this test water will be discharged in a variety of locations, including wetlands, uplands, and Cook Inlet. *Id.*; *id.* at 4-221. FERC's FEIS fails to take a hard look at the environmental impacts of this hydrostatic testing.

The FEIS fails to address adequately FWS's comment on the DEIS that the large volumes of proposed hydrostatic test water discharges on permafrost soils could cause thermal erosion or thermokarsting and impact wildlife habitat even if discharged at a cold or "natural" temperature. FEIS, App. CC at CC-253. In light of this risk, the Service recommended additional mitigation measures, including reusing test water where possible to minimize the number of discharges. *Id.* FERC responded that "[w]hile some impacts on permafrost could occur," the agency does not expect those impacts to be significant because "the water temperature would be expected to be within a few degrees of the surrounding ground temperature," and "in the majority of locations,

[the discharge] would be separated from the frozen subgrade by the depth of the active layer." FEIS at 4-99. FERC's response inappropriately minimizes the risk FWS identified without providing any detail or supporting authority, and is inadequate. *N. Plains Res. Council*, 668 F.3d at 1076 (explaining that "[G]eneral statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided."). That response is also inconsistent with FERC's acknowledgement elsewhere in the FEIS that when ambient temperatures drop below freezing during hydrostatic testing, "[h]eaters, enclosed shelters, and boilers would be utilized as necessary." FEIS at 2-58. Furthermore, FERC did not condition its authorization on any temperature limitations for hydrostatic test water discharges or address the risk that these discharges will harm permafrost through any other mitigation method. Nor did FERC provide any explanation for refusing to require AGDC to reuse hydrostatic test water as FWS suggested. Merely requiring AGDC to evaluate the potential for reusing test water "where practicable" at a later date, *id.* at 4-217, does not excuse FERC's failure to consider the impacts of the multiple high-volume discharges that AGDC is currently projecting as reflected in the FEIS.

The FEIS fails to address FWS's concern that hydrostatic discharges during the nesting season could destroy the eggs and nestlings of ground-nesting birds. *Id.*, App. CC at CC-253. FERC responds that AGDC will avoid high concentration locations "to the extent practicable consistent with the Project schedule" and that the company will likewise reuse test water where practicable, limiting the number of discharge points and "reducing the potential for impacts on ground-nesting birds." *Id.* at 4-336. However, citing the potential to reduce unquantified environmental impacts to an unspecified extent, subject to largely undefined limits on

practicability, does not constitute a hard look or excuse FERC from analyzing those impacts in the FEIS.

The FEIS fails to address the potential impacts of hydrostatic test water discharges on surface waters. While the FEIS contains preliminary lists of expected test water discharges that identify water sources, discharge volumes, discharge mileposts, and whether the discharge area is a wetland or upland, it contains virtually no analysis of how those discharges will affect the wetlands and nearby surface waters. FERC states that the potential for scour, erosion, and sedimentation due to these discharges would be "minimize[d]" by passing through energy dissipation devices, *id.* at 4-218, but does not say that the potential would be eliminated or estimate what the resulting potential would be. Common pollutants of concern in hydrostatic test waters such as welding slag left behind during construction "would be identified and handled [in an unspecified manner] through the APDES process." *Id.* From this vague and minimal information, the FEIS concludes that hydrostatic test water discharges would have unspecified "temporary" and "minor" impacts on wetlands. *Id.* at 4-237 to 38. Other than noting that discharges would be to the same basin, would be similar in quality (but not identical after testing) to the water source, and would be within a "few degrees" of the ground temperature at the time of discharge, the FEIS contains no specific conclusions about the impacts of those discharges on surface waters. *See Id.* at 4-218. FERC's analysis entirely ignores a wide range of information important to determining the impacts of these discharges, including but not limited to the effectiveness of the energy dissipation devices, the frequency and rate of the proposed discharges, the relative size of the receiving wetlands, the sensitivity of the receiving environment overall and across relevant seasons, the potential risks of temperature pollution of

even a few degrees' difference, and the potential to introduce pollutants to surface waters even if they are permitted by the APDES program. This does not constitute a hard look.

VII. FERC's treatment of mitigation measures was improper.

FERC's FEIS fails to include an adequate mitigation plan to minimize or eliminate all potential project impacts. NEPA requires the agency to "[i]nclude appropriate mitigation measures not already included in the proposed action or alternatives," 40 C.F.R. §1502.14(f); and "include discussions of: . . . [m]eans to mitigate adverse environmental impacts (if not already covered under 1502.14(f))." 40 C.F.R. §1502.16(h).

NEPA regulations define "mitigation" to include avoiding, minimizing, rectifying, reducing, or compensating for the impact of a potentially harmful action. 40 C.F.R. § 1508.20(a)-(e). As the Supreme Court has instructed, "omission of a reasonably complete discussion of possible mitigation measures would undermine the 'action-forcing' function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects." *Robertson,* 490 U.S. at 352. NEPA requires that FERC discuss mitigation measures with "sufficient detail to ensure that environmental consequences have been fairly evaluated." *Id*. "An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective. . . . A mitigation discussion without at least *some* evaluation of effectiveness is useless in making that determination." *S. Fork Band Council*, 588 F.3d at 727 (citations omitted).

As an initial matter, because the FEIS fails to characterize the nature and extent of the direct and indirect effects of the proposed project properly, the agency is unable to determine whether mitigation is reasonable and appropriate. The FEIS also fails to assess adequately

mitigation options and fails to describe how mitigation would be effective. For example, FERC assumed the impacts of the Alaska LNG Project on polar bears will be less than significant largely because AGDC would conduct den detection studies prior to various activities. However, FERC failed to consider information that den detection methods—one of the primary ways in which the federal government attempts to mitigate impacts to denning bears—are *not effective* at protecting polar bears because of their low rate of den detection. The most effective form of den surveying is forward-looking infrared radar (FLIR). However, as described in various studies, even when surveyors know exactly where a den is located, FLIR is effective at detecting those dens only half the time. For example, Amstrup, et al. (2004) evaluated the effectiveness of FLIR for detecting maternal polar bear dens by flying multiple survey flights over 23 dens for which exact locations were known in advance of the surveys. Although these known dens were visited multiple times, four of them (17%) were never detected, and just two of four dens that were visited on only one occasion were detected; the study recognized that even under ideal conditions and with multiple surveys, some dens would never be detected with FLIR due to snow conditions or interference.[157]

FERC also places a great deal of emphasis on "ramp-ups" and "soft-starts" as a means of minimizing harm to marine mammals from noise-producing activities. These techniques, which gradually increase sound level, are used under the theory that animals will flee an area before the sound reaches full (and potentially injurious) strength. Their use is precautionary and

[157] S. C. Amstrup *et al.*, *Detecting Denning Polar Bears with Forward-Looking Infrared (FLIR) Imagery*, 54 BIOSCIENCE 337 (2004); G. York *et al.*, U.S.G.S., *Using Forward Looking Infrared (FLIR) Imagery to Detect Polar Bear Maternal Dens Operations Manual* (Sept. 2004); R. Robinson *et al.*, *Factors Influencing the Efficacy of Forward-Looking Infrared in Polar Bear Den Detection*, 64 BIOSCIENCE 735 (2014); T.S. Smith *et al.*, *Efficacy of aerial forward-looking infrared surveys for detecting polar bear maternal dens*, 15 PLOS ONE e0222744 (2020) (T. S. *et al.* 2020).

theoretical; there is a dearth of scientific evidence discussing the efficacy of such mitigation measures and some research even suggests these measures may be harmful.[158] According to Compton *et al.* (2008),

> The effectiveness of the soft-start method is likely to vary between species and circumstances, and there is concern that this procedure may lead to habituation . . . Habituation leading to long-term exposure to high sound levels may lead to chronic auditory damage.[159]

In addition, the initial weak sounds used in ramp-ups may counterintuitively attract animals.[160] This has been shown with sperm whales, who oriented toward low received sounds rather than away from them.[161]

The problems associated with ramp-ups may be especially acute for animals that exhibit high site fidelity, such as Cook Inlet beluga whales. As explained by Forney *et al.* (2017),

> Most mitigation efforts attempt to minimize injury by enabling animals to move away as noise levels are increased gradually. Recent experiences demonstrate that this approach is inadequate or even counterproductive for small, localized marine mammal populations, for which displacement of animals may itself cause harm.[162]

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[158] Canadian Science Advisory Secretariat, *Review of the Potential Hydrophysical-related Issues in Canada, Risks to Marine Mammals, and Monitoring and Mitigation Strategies for Seismic Activities*, Research document 2004/121 (2004); C. R. Weir & S. J. Dolman, *Comparative Review of the Regional Marine Mammal Mitigation Guidelines Implemented During Industrial Seismic Surveys, and Guidance Towards a Worldwide Standard*, 10 J. INT'L WILDLIFE LAW & POLICY 1 (2007); R. Compton *et al.*, *A critical examination of worldwide guidelines for minimising the disturbance to marine mammals during seismic surveys*, 32 Marine Policy 255 (2008) (Compton *et al.* 2008); M. A. Ainslie & A. M. Benda-Beckmann, *Optimal soft start and shutdown procedures or stationary or moving sound sources*, 17 PROC. MTGS. ACOUST. 070077, ECUA 2012 11th European Conference on Underwater Acoustics (2012); Forney *et al.* 2017.
[159] Compton *et al.* 2008 at 258.
[160] *Id.*
[161] *Id.*
[162] Forney *et al.* 2017.

Such harms "likely include increased stress and reduced foraging success, with associated effects on survival and reproduction."[163] The authors suggest "explicit . . . consider[ation of the] biological risks posed by displacement during . . . planning, monitoring, and mitigation."[164] Such consideration is particularly critical for extremely imperiled populations like the Cook Inlet beluga whale. Yet the agency fails to discuss such shortcomings in one of its primary mitigation measures for noise pollution and marine mammals.

Additionally, as discussed above, FERC proposed that AGDC not conduct pile driving activities for construction of the Mainline MOF during June and July. Yet FERC failed to assess the degree to which this measure would be effective in avoiding impacts to marine mammals. The FEIS also fails to assess the effectiveness of monitoring shutdown zones with protected species observers, in particular when the limits of those zones are far from the observers or activities occur at night.

Moreover, FERC required that after construction of the Prudhoe Bay gas treatment plant and Point Thomson gas pipeline are complete, AGDC must conduct seasonal monitoring for three years "to track caribou herd movement and determine if project infrastructure is creating a barrier to caribou movement," and "file a report describing the results of the monitoring, and recommendations to minimize or mitigate any identified issues with caribou movement related to the project, for further consideration and potential action by [FERC]." Order ¶ 107. Yet FERC failed to consider that this measure would not prevent impacts to caribou from occurring in the first instance, and that options to correct the problem would be limited because the facilities would already be constructed.

[163] *Id*.
[164] *Id*.

FERC also relies on mitigation measures that have not yet been designed to support its analysis. The agency's conclusions about impacts that are based on such hypothetical mitigation measures are arbitrary. For example, the FEIS entirely defers any analysis of compensatory mitigation. The FEIS explains only that "AGDC is consulting with the [Army Corps] and other resource management agencies to determine the appropriate form of mitigation offsets for unavoidable impacts on waters of the United States." FEIS at 4-250. A compensatory mitigation plan (CMP) must clearly identify the extent and magnitude of impacts that will be subject to compensatory mitigation, including the indirect, secondary, and cumulative impacts. Because compensatory mitigation is designed to offset lost aquatic resource functions, the CMP should also describe the type and magnitude of aquatic resource functions that will be lost or degraded and assess whether the compensatory mitigation provides the same functions, including the lost wetland function of carbon sequestration. Without a functional assessment, the CMP must use a minimum one-to-one acreage or linear foot compensation ratio, and the Corps must require an even greater ratio if necessary. 33 C.F.R. § 332.3(f). The CMP must also explain, in the absence of a functional assessment, the rationale behind any determination that the proposed compensatory mitigation would provide sufficient offset for the lost aquatic functions. *Id.*

FERC similarly relies on mitigation that has not yet been designed in the air emissions context. FERC repeatedly defers to the Clean Air Act air permitting process even the evaluation of impacts to determine if mitigation is warranted. For example, the FEIS states that "emissions from the aboveground facilities, including the [gas treatment plant], compressor stations, heater station, and Liquefaction Facilities, *could* cause exceedances of visibility thresholds and sulfur or nitrogen deposition thresholds at some Class II nationally designated protected areas. Additionally, certain short-term activities, such as flaring at the [gas treatment plant] and

Liquefaction Facilities, have the potential to result in short-term significant effects." FEIS at 4-1209 (emphasis added). But AGDC has not provided a mitigation strategy or even "determined acceptable thresholds [for threshold exceedances at Class II areas] agreed upon by the FLMs." FEIS at 4-972. FERC made no attempt to determine what the impacts will be or what mitigation measures are even possible. It instead punts the issue, stating mitigation measures "*could* be implemented during the air permitting phase that would reduce these impacts." FEIS at 4-1210 (emphasis added). The FEIS also identifies that construction and operational emissions may have a significant effect on ambient air quality in construction years 7 and 8, but states only that AGDC will implement an Ambient Air Quality Monitoring Plan to identify those effects and ensure they are not significant. FEIS at 4-936. No information is provided about the mitigation measures that will be implemented if monitoring reveals exceedances of NAAQS/AAAQS. Order ¶ 210; FEIS at 4-962 (stating that the Plan "identifies protocols for managing any exceedances observed during monitoring" without providing any further information about the protocols or management options).

FERC's treatment of air emission impacts mitigation in the FEIS does not meet NEPA's requirement to include "a reasonably complete discussion of possible mitigation measures," *Robertson*, 490 U.S. at 352; *see also* 40 C.F.R. § 1505.2(c) (requiring FERC identify in its record of decision whether "all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not"). "Perfunctory descriptions" or "mere lists" of mitigation measures are insufficient. *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1380 (9th Cir. 1998). Rather, FERC must actually identify proposed mitigation measures and provide "an assessment of whether the proposed mitigation measures can be effective . . . [and] whether anticipated environmental impacts can be

avoided." *S. Fork Band Council*, 588 F.3d at 727; *see also id.* at 726 (reliance on a non-NEPA document and process is unacceptable). FERC's approach to mitigation measures fails to comply with NEPA.

VIII. FERC failed to consider properly the environmental justice impacts of the Alaska LNG Project.

The North Slope of Alaska is home to communities that are generally rural, contain many low-income households, and have a majority Iñupiat population. The North Slope is also home to a variety of oil and gas infrastructure, including several active development and exploration projects. Oil and gas activities on the North Slope disproportionately impact these communities, many of which are already bearing the brunt of climate disruption. FERC's approval of the project will exacerbate these impacts by leading to more drilling and fracking, more gas-related toxic air pollution, and more greenhouse gas emissions. Yet FERC failed to address adequately the significant environmental justice impacts of the Alaska LNG Project.

Analyzing the environmental justice implications of federal actions—particularly the approval of a project that is so massive in scale—is part of taking a hard look at the impacts of such actions under NEPA. On February 11, 1994, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations." 59 Fed. Reg. at 7629. The Executive Order makes it the responsibility of each Federal agency to "make achieving environmental justice part of its mission in identify and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." *Id.* Accompanying this Executive Order was a Presidential Memorandum stating that "each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and

low-income communities, when such analysis is required by the [National Environmental Policy Act]." Presidential Memorandum, *Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (Feb. 11, 2014).

The CEQ has also issued guidance on incorporating environmental justice considerations in the NEPA process. The guidance states in part:

> Early and meaningful public participation in the federal agency decision making process is a paramount goal of NEPA. CEQ's regulations require agencies to make diligent efforts to involve the public throughout the NEPA process. Participation of low-income populations, minority populations, or tribal populations may require adaptive or innovative approaches to overcome linguistic, institutional, cultural, economic, historical, or other potential barriers to effective participation in the decision-making processes of Federal agencies under customary NEPA procedures.

CEQ, Guidance Under the Nat'l Envtl. Policy Act at 13 (Dec. 1997). FERC failed to make diligent efforts to include environmental justice communities in the decision-making process. Indeed, other federal and state agencies raised concerns with FERC that the agency's consultation with tribes was inadequate. As highlighted by BLM's Alaska State Director in a letter to FERC just weeks before FERC approved the project, "FERC has indicated . . . that tribes have been contacted, however, this does not constitute required consultation" and the requisite level of tribal consultation has "been largely absent from the process up to this point."[165] The Alaska Department of Natural Historic Preservation Officer expressed concern that consultation "for such a large and complex project" has been inadequate.[166]

Moreover, as explained *supra* pp. 19-27, the slew of missing information in the DEIS and FEIS demonstrate that FERC has not properly informed the public, including environmental

[165] Letter from Chad B. Padgett, Bureau of Land Management to James Martin, FERC (Apr. 27, 2020) at 1-2.
[166] Letter from Judith H. Bittner, State of Alaska Historic Preservation Officer to James Martin, FERC (Apr. 23, 2020) at 1.

justice communities, of the true impacts of the Alaska LNG Project. And, as also explained above, FERC's failure to consider the climate impacts of the Alaska LNG Project means it also ignored how such impacts will affect environmental justice communities, particularly those on the North Slope of Alaska.

While FERC acknowledges that the Alaska LNG Project "could disproportionately affect some environmental justice populations due to impacts on subsistence practices and public health effects," FEIS at ES-7, it fails to analyze these impacts properly. For instance, the pollutants that will be emitted by compressor stations are documented as causing severe health effects and will do so for many years. Nitrogen oxide (NOx) and volatile organic compounds (VOCs) are known to harm respiratory, cardiological, neurological, and kidney functions and can cause premature death. Even small levels of NOx can cause nausea, irritated eyes and nasal passages, fluid in the lungs, and shortness of breath. Higher levels of NOx and VOCs can cause burning spasms, throat swelling, reduced oxygen intake, lung damage, dizziness, nausea, fatigue, nosebleeds, and cancer. Furthermore, NOx is a major contributor to the formation of fine particulate matter and ozone. Fine particulate matter is linked to increased heart attacks, aggravated asthma, decreased lung function, and premature death for people with heart or lung disease.[167] Ozone can cause coughing, chest pain, and throat irritation as well as exacerbating bronchitis, emphysema, and asthma. *See, e.g.*, 75 Fed. Reg. 2938 (Jan. 19, 2010). Consideration of air quality problems is especially important in the Arctic where the extremely cold temperatures and strong surface-based temperature inversions can trap local emissions.[168]

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[167] *See, e.g.*, Southwest Pennsylvania Environmental Health Project, *Summary on Compressor Stations and Health Impacts*, (Feb. 24, 2015).

[168] J. Schmale *et al.*, *Local Arctic Air Pollution: A Neglected but Serious Problem*, 6 EARTH'S FUTURE 1385 (2018); *see also* Univ. of Utah, *Arctic clouds highly sensitive to air pollution*, SCIENCEDAILY (Jan. 3, 2018).

Yet FERC largely dismissed the import of the additional air pollution that could result from the Alaska LNG Project because there is already significant oil and gas-related infrastructure on the North Slope and harmful air pollution as a result, and any emissions would need to comply with state and regulatory permitting requirements. This approach undercuts the purpose of a hard-look analysis, including cumulative impacts, and efforts to inform and engage environmental justice communities. *See, e.g.*, *Edwardsen v. U.S. Dep't of the Interior*, 268 F.3d 781, 789 (9th Cir. 2001) ("[T]he fact that [an] area will remain in compliance with [air quality standards] is not particularly meaningful . . . . A more relevant measure would be the degree to which [the Federal action] contributes to the degradation of air quality.").

FERC also relies on an appendix prepared by AGDC that FERC claims "supplement[s] the environmental justice discussion." FEIS, App. CC at CC-754. But FERC cannot delegate its NEPA duties to the applicant. *See S. Fork Band Council*, 588 F.3d at 726 ("A non-NEPA document—let alone one prepared and adopted by a state government—cannot satisfy a federal agency's obligations under NEPA"); *Idaho v. Interstate Commerce Comm'n*, 35 F.3d 585, 595 (D.C. Cir. 1994) (holding that attempting "to rely entirely on the environmental judgments of other agencies [is] in fundamental conflict with the basic purpose of NEPA"). Nor can FERC "circumvent its obligation to provide a clear assessment of environmental impacts simply by placing [vital] analysis in an appendix." *Or. Envt'l Council v. Kunzman*, 817 F.2d 484, 494 (9th Cir. 1987).

IX. FERC failed to consider cumulative impacts properly.

FERC's FEIS fails to consider cumulative impacts properly. Cumulative impacts are those that "result 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 . . . time." 40 C.F.R. § 1508.7. The cumulative impacts analysis "must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects." *Klamath-Siskiyou*, 387 F.3d at 994.

Yet, overall—and as explained in greater detail above for specific resources—FERC's FEIS wholly fails to conduct a "quantified assessment of [other projects'] combined environmental impacts," and "objective quantification of the impacts" from other existing and proposed activities in the region, as required by NEPA. *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 971-974 (9th Cir. 2006). Indeed, FERC's cumulative impacts analysis consists of little more than general statements, a table listing categories of activities and actions, and a bulleted list of reasonably foreseeable future projects. This is improper. *See Ocean Advocates* v. *U.S. Army Corps of Eng'rs*, 361 F.3d 1108,1128 (9th Cir. 2004) ("in considering cumulative impact, an agency must provide some quantified or detailed information; . . . general statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided"). For example, the "analysis" lists the numerous past, present, and reasonably foreseeable oil and gas projects on the North Slope and Cook Inlet, but fails to actually analyze the cumulative impacts of the Alaska LNG Project in light of these other activities.

Additionally, the scope of activities considered by FERC is incomplete. For example, the agency must consider the cumulative effects of producing the gas from Prudhoe Bay and Point Thomson. This is true not only because the produced gas is the essential resource for which the pipeline is to be built, but also because if the pipeline is not built, the gas will not be produced. FEIS at 3-2. The FEIS acknowledges that the Point Thomson Unit expansion and Prudhoe Bay

Unit major gas sale projects are "integral" to the proposed project, *see* FEIS at 4-1159, but it does not fully assess the cumulative impacts of these related projects. For example, although expansion at Prudhoe Bay Unit would require ten new production and injection wells and expansion of Point Thomson Unit would require three new production wells, FEIS at 4-1160, 4-1162, FERC's cumulative impacts analysis fails to address the impacts of these new wells and associated activity.

Moreover, FERC limited its cumulative impacts analysis of air emissions from the gas treatment plant, compressor stations, heater station, and Liquefaction Facilities to 31 miles. FEIS at 4-1208. However, given that the FEIS analyzes direct impacts from nitrogen and sulfur to nationally designated protected areas as far as 300 km away, *see id.* at 4-939, it is arbitrary for the agency to limits its cumulative impacts analysis to projects within 31 miles, particularly with respect to these protected areas.

Finally, FERC's failure to consider climate impacts also infected its cumulative impacts analysis. FERC recognizes that project emissions, "in combination with past, current, and future emissions from all sources," globally will "contribute incrementally to future climate change impacts." Order ¶ 216. Yet FERC failed to undergo any actual analysis to determine the significance of this incremental greenhouse gas contribution beyond quantifying the direct impacts and comparing these emissions to statewide and national emissions "as context." Order ¶ 215. This is arbitrary. As courts have explained, the impact of greenhouse gas "emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct." *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d at 1217; *see also WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 83 (D.D.C. 2019) ("Given the national, cumulative nature of climate change, considering each individual drilling project in a

vacuum deprives the agency and the public of the context necessary evaluate oil and gas drilling on federal land before irretrievably committing to that drilling").

X. The biological opinions on the Alaska LNG Project issued after FERC's authorization are unlawful, and FERC's reliance on them violates the ESA.

NMFS and FWS issued biological opinions for the project after FERC's Order and shortly before the June 22, 2020 deadline for this rehearing request: NMFS on June 3, 2020, and FWS on June 17, 2020. FERC made the opinions available to the public on June 5, 2020 (NMFS) and June 19, 2020 (FWS). In the short time available, Intervenors identified numerous facial deficiencies as detailed below. However, a comprehensive accounting of the flaws in these opinions was not possible under the circumstances. Therefore, Intervenors reserve the right to challenge the biological opinions and FERC's reliance on them for reasons not enumerated in this request.

A. NMFS's biological opinion on the Alaska LNG Project is unlawful.

NMFS's biological opinion that purports to analyze the effects of the Alaska LNG Project fails to comply with the ESA and APA. In particular, NMFS's biological opinion: (1) ignores highly pertinent information representing the best available scientific information; (2) fails to consider the *additional* impacts from the Alaska LNG Project in light of degraded baseline conditions that have already pushed numerous species in Alaska to the brink of extinction or actually analyze how the project will impact the recovery of these species; and (3) fails to include a proper incidental take statement for species that NMFS admits will be taken by the Alaska LNG Project.

1. *The biological opinion omits key factors from consideration and is not based on the best available science.*

The ESA requires the consultation process and resulting biological opinion be based on "the best scientific and commercial data available." 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(g)(8). To comply with this requirement, NMFS "cannot ignore available biological information" and must "give the benefit of the doubt to the species." *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988). NMFS's biological opinion fails to comply with this obligation by omitting important factors from consideration and otherwise ignoring information that constitutes the best available science.

NMFS failed to consider highly relevant information regarding the effects of the Alaska LNG Project on Cook Inlet beluga whales. As one example, while NMFS's biological opinion acknowledges that tug boats can produce noise at levels harmful to marine mammals, *see, e.g.*, BiOp at 200 (noting that "[t]he tugboat *Leo* produced the highest broadband levels of 149 dB re: 1 μPa at a distance of approximately 100 m (328 ft)," NMFS failed to consider the best available science regarding the threat tug boat noise poses to Cook Inlet beluga whales. For instance, NMFS failed to consider its own recovery plan, which prioritizes tug boat noise as among the most important "anthropogenic noise sources that could potentially interfere with recovery . . . based on signal characteristics and the spatio-temporal (space and time) acoustic footprint."[169] This is a significant omission considering that the Alaska LNG Project will increase large vessel traffic in the Inlet by more than 70%, that the majority of these vessels will be accompanied by multiple tug boats, and that, in contrast to other migratory marine mammals in the Inlet, Cook Inlet beluga whales cannot escape such noise as they have nowhere else to go and represent a population "for which displacement of animals may itself cause harm.[170]

[169] NMFS, Cook Inlet Beluga Whale Recovery Plan at III-11.
[170] Forney et al. 2017.

In addition, NMFS's biological opinion fails to consider a new study demonstrating that wild beluga whales have sensitive hearing.[171] NMFS uses thresholds of 120 dB re 1μPa (rms) for continuous and 160 dB re 1μPa (rms) for impulsive or intermittent sources. Such thresholds are insufficiently conservative to protect Cook Inlet beluga whales, which are highly sensitive to noise. NMFS also failed to consider another new study indicating that the calculation of a single-threshold approach (such as used by NMFS for Level B acoustic harassment) underestimates the number of animals affected.[172] NMFS also improperly dismissed the impacts of aircraft noise by claiming belugas have become habituated to this noise, despite evidence that the animals might not be habituated, and instead stay in the area despite the costs.[173] As such, NMFS's biological opinion fails to examine properly the effects of increased noise pollution caused by the Alaska LNG Project or estimate the full scope of take of beluga whales.

NMFS also failed to properly consider impacts to Chinook salmon and other ESA-listed fish species from the Alaska LNG Project. NMFS' biological opinion claims that it "considers the effects of the construction of a LNG pipeline and related facilities" and recognizes that "[t]he pipeline will run from Prudhoe Bay through the interior of Alaska and will cross Cook Inlet from the west side near the existing Beluga Landing to the liquefaction plant in Nikiski." NMFS BiOp at 17. The 807-mile pipeline will cross several streams and other waterways. Yet NMFS failed to consider the impacts of construction and operation of the pipeline on Chinook salmon and other ESA-listed fish anywhere but in Cook Inlet. *See id.* at 110-11 (considering only

[171] T. A. Mooney *et al.*, *Variation in hearing within a wild population of beluga whales (Delphinapterus leucas)*, 221 JOURNAL OF EXPERIMENTAL BIOLOGY jeb171959 (2018).
[172] P. L. Tyack & L. Thomas, *Using dose–response functions to improve calculations of the impact of anthropogenic noise*, 29 AQUATIC CONSERV.: MAR. FRESHW. ECOSYST. 242 (2019).
[173] D. P. Nowacek *et al.*, *Marine seismic surveys and ocean noise: time for coordinated and prudent planning*, 13 Front Ecol Environ 378 (2015).

project noise from vessels, pile driving, and dredging may affect listed salmonid as impact inducing factors). This was improper, particularly in light of FERC's conclusion that the project "would result in temporary, short-term, and permanent impacts on freshwater and marine fish habitat and fish communities, FEIS at 4-417, and the wealth of available information indicating harmful impacts from construction of the pipeline onshore.

For example, according to FERC, available data indicate that the Mainline Pipeline would cross 71 waters deemed "Important for the Spawning, Rearing, or Migration of Anadromous Fishes" and the PTTL would cross 14 such waters. *Id.* at 4-400. The Mainline Pipeline would also cross several waterbodies in the Nenana River watershed that provide valuable habitat for salmon migration. *Id*. at 4-409. And it would cross the Susitana River—a major producer of Chinook salmon. *Id.* These river crossings will cause increased turbidity and sedimentation, alteration or removal of in-stream and streambank cover, streambank erosion, and introduction of water pollutants which could increase stress, injury, and mortality of Chinook salmon and other ESA-listed fish. *Id.* at 4-417. Increased turbidity from waterbody crossings could temporarily reduce dissolved oxygen levels in the water column and reduce respiratory functions in fish, which could temporarily displace individuals, reduce fish health, or increase fish mortality. *Id.* at 4-430. Turbid conditions could also reduce the ability of fish to find food sources or avoid prey. *Id.* Yet NMFS failed to consider such impacts in its biological opinion.

Additionally, NMFS's biological opinion contains only a brief discussion of ocean acidification and how it will impact the availability of prey for ESA-listed species. The best available science indicates that ocean acidification will, and likely already is, negatively impacting coastal Alaskan fish populations and ultimately the marine mammals that depend on them, including Cook Inlet beluga whales. Ocean acidification is occurring more rapidly in the

coastal and pelagic waters of Alaska than in tropical climates, and is likely to result in a decrease in abundance of pteropods and other shelled planktonic species, which are unable to grow as rapidly in acidic waters.[174] These species represent an important food source for pink salmon and other species; given the short life cycle of salmon, prey quality and availability during the juvenile stage strongly affect salmon biomass and abundance.[175] Temporal and spatial reduction in pteropod abundance affects the species that rely on them. For example, 30% of the variability of pink salmon survival during spring-summer in Prince Williams Sound in southern Alaska has been directly associated with changes in the abundance and distribution of pteropods.[176] Studies estimate that a 10% reduction in pteropods could result in a 20% decrease in the weight of adult salmon. Salmon are also directly at risk from ocean acidification that has been shown to reduce growth, fitness, and predator response.[177] While the full impact of warming waters and ocean acidification on beluga prey species is difficult to predict, these changes will almost certainly be negative.

Pteropods can be used as an indicator for water impairment due to their striking vulnerability to ocean acidification. These mollusks are among the calcifier groups most sensitive to declines of aragonite saturation conditions because of their delicate aragonite

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[174] V. J. Fabry *et al.*, *Impacts of ocean acidification on marine fauna and ecosystem processes*, 65 ICES J. MAR. SCI. 414 (2008).
[175] K.Y. Aydin, *et al.*, *Linking oceanic food webs to coastal production and growth rates of Pacific salmon (*Oncorhynchus spp.*), using models on three scales,* 52 DEEP SEA RES. II 757 (2005).
[176] A. J. Doubleday & R. R. Hopcroft, *Interannual patterns during spring and late summer of larvaceans and pteropods in the Coastal Gulf of Alaska, and their relationship to pink salmon survival*, 37 JOURNAL OF PLANKTON RESEARCH 134 (2015).
[177] M. Ou *et al.*, *Responses of pink salmon to CO2-induced aquatic acidification,* 5 NATURE CLIMATE CHANGE 950 (2015).

shells.[178] In the California Current Ecosystem, pteropods are already impacted by ocean acidification with reduction in abundance and signs of shell damage due to acidic waters.[179] For example, sampling studies along the Washington-Oregon-California coast showed that, on average, severe dissolution is found in 53% of onshore pteropods and 24% of offshore individuals due to undersaturated waters in the top 100m with respect to aragonite.[180] Studies show that pteropods do not acclimatize to or tolerate ocean acidification, but instead are near their physiological threshold and at risk of extinction under near future ocean acidification scenarios.[181] NMFS failed to consider this science properly in analyzing the impacts of the Alaska LNG Project on ESA-listed fish, Cook Inlet beluga whales, North Pacific right whales, and other species in violation of the plain language of the ESA.

2. NMFS failed to conduct the proper jeopardy analysis.

NMFS failed to conduct the proper jeopardy analysis. In evaluating whether the Alaska LNG Project will jeopardize Cook Inlet beluga whales, humpback whales, North Pacific right whales, ice seals, and the other ESA-listed species affected by the Alaska LNG Project under NMFS's jurisdiction, the ESA requires NMFS to aggregate the cumulative effects, environmental baseline, and proposed action in light of the status of the species to determine

[178] N. Bednaršek *et al., Pteropods on the Edge: Cumulative Effects of Ocean Acidification, Warming, and Deoxygenation*, 145 PROGRESS IN OCEANOGRAPHY 1 (2016).
[179] N. Bednaršek & M. D. Ohman, *Changes in Pteropod Distributions and Shell Dissolution across a Frontal System in the California Current System*, 523 MAR. ECOL. PROG. SER. 93 (2015); N. Bednaršek *et al.*, Limacina helicina *shell dissolution as an indicator of declining habitat suitability owing to ocean acidification in the California Current Ecosystem*, 281 PROC. R. SOC. B. 20140123 (2014) (Bednaršek *et al.* 2014).
[180] Bednaršek *et al.* 2014.
[181] N. Bednaršek *et al., Systematic Review and Meta-Analysis Toward Synthesis of Thresholds of Ocean Acidification Impacts on Calcifying Pteropods and Interactions With Warming*, 6 FRONT. MAR. SCI. 227 (2019); N. Bednaršek *et al., Exposure history determines pteropod vulnerability to ocean acidification along the US West Coast*, 7 SCI. REP. 4526 (2017).

whether they collectively jeopardize the species' continued existence. *See* 50 C.F.R. §§ 402.02, 402.14(g)(4). As such, the proper analysis "is not the proportional share of responsibility the federal agency bears for the decline in the species, but what jeopardy might result from the agency's proposed action in the present and future human and natural contexts." *Pac. Coast Fed'n of Fishermen's Ass'ns v. U.S. Bureau of Rec.*, 426 F.3d 1082, 1093 (9th Cir. 2005). Moreover, in conducting a jeopardy analysis, NMFS must consider the impacts of an action on both a species' survival *and* recovery. *See* 50 C.F.R. § 402.02 (defining jeopardy); *see also Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 931 (9th Cir. 2008) (confirming that "the jeopardy regulation requires NMFS to consider both recovery and survival impacts").

NMFS's biological opinion runs afoul of both these fundamental components of a jeopardy analysis by considering the impacts of the Alaska LNG Project in isolation and failing to consider the impacts of the Alaska LNG Project on the recovery of ESA-listed species. For example, in analyzing impacts to Cook Inlet beluga whales, NMFS writes "[b]ecause the action will not reduce the reproduction, numbers, or distribution of the species, NMFS concludes that the proposed action is not expected to appreciably reduce the likelihood of survival or recovery of Cook Inlet beluga whales." NMFS BiOp at 304–05; *see also id.* at 301, 305 (finding no jeopardy to the bowhead whale, Cook Inlet beluga whale, or the Mexico DPS or Western North Pacific DPS of humpback whale because the Alaska LNG Project will not "reduce the viability of those populations" or "increase the extinction probability").

Such an approach arbitrarily fails to consider the impacts of the Alaska LNG Project when added to the environmental baseline and cumulative impacts in light of the status of the species, and myopically focuses on the impacts on the species' survival, rather than also considering impacts on recovery—writing the duty to analyze impacts on recovery out of the

statute. *See Pac. Coast Fed'n of Fishermen's Ass'ns v. Nat'l Marine Fisheries Serv*., 265 F.3d 1028, 1036–37 (9th Cir. 2001) (holding that if "individual projects are diluted to insignificance and not aggregated," then the Fisheries Service's "assessment . . . is tantamount to assuming that no project will ever lead to jeopardy of a listed species"). Indeed, NMFS makes no attempt to consider the impacts of the Alaska LNG Project on the survival and recovery of Cook Inlet belugas in light of noise pollution from existing and reasonably foreseeable vessel traffic and the numerous instances of take of the species NMFS has authorized incidental to other activities in the Inlet, such as Hilcorp's oil and gas activities and the expansion of the Port of Anchorage, to name just a few. *See* 85 Fed. Reg. 19,294 (Apr. 6, 2020); 84 Fed. Reg. 37,442 (July 31, 2019).

Moreover, NMFS failed to consider the effects of the action in light of the fact that the level of deaths and serious injuries of certain ESA-listed humpback whales are already above the species' potential biological removal (PBR) established under the MMPA. NMFS defines PBR as "the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population." 50 C.F.R. § 229.2. PBR for the California/Oregon/Washington stock of humpback whales is 16.7 per year.[182] NMFS, however, estimates the current annual level of serious injury and mortality for this stock is 17.3 whales from entanglements in commercial fishing gear and 2.2 whales from ship strikes, for a total of 19.5 whales.[183] The Alaska LNG Project will exacerbate these impacts by causing additional takes, including serious injury and mortality. *See* BiOp at 277, 310 (finding the operational phase of the project will kill or

[182] NMFS, Draft Stock Assessment Report: HUMPBACK WHALE (Megaptera novaeangliae): California/Oregon/Washington Stock at 52 (Aug. 15, 2019). NMFS has not yet updated the PBR to reflect the revised listing of humpback whales under the ESA. As such, this PBR level is excessively high and not supported by the best available scientific data.
[183] *Id.* at 54, 55.

seriously injure two humpback whale from the Mexico DPS due to vessel strikes and authorizing one Level A harassment and one Level B harassment take for the Mexico DPS from pile driving and anchor handling). But if takes occur at a rate at or

the PBR, the recovery rate for the stock will be retarded by definition. NMFS's no jeopardy conclusion is therefore illogical, particularly where NMFS did not even consider PBR in conducting its analysis. *See Conservation Council of Hawaii v. Nat'l Marine Fisheries Serv.*, 97 F. Supp. 3d 1210, 1228 (D. Haw. 2015) (adopting plaintiffs' position that "NMFS, having itself treated PBR as the best scientific evidence available, is acting arbitrarily and capriciously in disregarding PBR with respect to the Navy's request").

Finally, NMFS's determination that the Alaska LNG Project is not likely to adversely affect North Pacific right whales is arbitrary and illogical. NMFS bases its determination on the fact that project-related LNG vessels will either travel at 5 knots or less within the boundaries of North Pacific right whale critical habitat if no PSO is on board, travel at 10 knots or less when a PSO is on board and maintain a minimal distance of 500 yards from right whales, or avoid the area entirely. NMFS BiOP at 79. Yet elsewhere in the biological opinion NMFS states that "neither NMFS nor FERC have jurisdiction or control over vessels that will transport LNG during the operational phase of the project and cannot impose enforceable monitoring or reporting requirements on such vessels." *Id.* at 309.

NMFS cannot have it both ways. NMFS may rely on mitigation measures to support a no jeopardy or adverse modification conclusion "only where they involve 'specific and binding plans' and 'a clear, definite commitment of resources for future improvements' to implement those measures." *Ctr. for Biological Diversity v. Salazar*, 804 F. Supp. 2d 987, 1001 (D. Ariz. 2011) (quoting *Nat'l Wildlife Fed'n*, 524 F.3d at 935–36). Furthermore, "mitigation measures

supporting a [biological opinion's] no jeopardy or no adverse modification conclusion must be 'reasonably specific, certain to occur, and capable of implementation; they must be subject to deadlines or otherwise-enforceable obligations; and most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards.'" *Id.* (quoting *Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002)). A "sincere general commitment to future improvements" is not enough to offset the negative effects of an action "absent specific and binding plans." *Nat'l Wildlife Fed'n*, 524 F.3d at 936. NMFS's reliance on mitigation measures it admits are not enforceable to conclude there will not be any adverse effects to North Pacific right whales from the Alaska LNG Project (let alone no jeopardy) is improper. Such an approach is particularly alarming considering the highly imperiled status of North Pacific right whales, estimated at less than 30 individuals.[184]

3. NMFS failed to include a proper incidental take statement.

The ESA requires that, if NMFS's biological opinion concludes that the action (or the implementation of reasonable and prudent alternatives) will not cause jeopardy, but is reasonably likely to result in the take of an endangered species, NMFS's biological opinion must include an incidental take statement (ITS). The ITS must specify the impact—*i.e.*, the amount or extent—of incidental taking that may occur. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i)(1)(i). An ITS must also include "reasonable and prudent measures . . . necessary . . . to minimize such impact, 16 U.S.C. § 1536(b)(4), and must specify the permissible level of taking, "thus . . . serv[ing] as a check on the agency's original decision that the incidental take of listed species resulting from the proposed action will not [jeopardize the continued existence of the species]." *Id.*; *Center for*

[184] NMFS, Stock Assessment Report: NORTH PACIFIC RIGHT WHALE (Eubalaena japonica): Eastern North Pacific Stock at 177 (Aug. 2019).

Biological Diversity v. Salazar, 695 F.3d 893, 911 (9th Cir. 2012). In addition, when the endangered species to be taken are marine mammals, the take must first be authorized pursuant to the MMPA and the ITS must include any additional measures necessary to comply with the MMPA take authorization. 50 C.F.R. § 402.14(i)(1)(iii).

NMFS's biological opinion fails to comply with such requirements. For example, NMFS finds that vessel traffic will take numerous species of whales via noise pollution and ship strikes, yet NMFS fails to authorize such take or include measures to mitigate the impact of such take on these species. Such failures render the biological opinion arbitrary and capricious. FERC's reliance on such a facially flawed biological opinion violates the ESA. *See Ctr. for Biological Diversity v. U.S. Bureau of Land Mgmt.*, 698 F.3d 1101, 1127-28 (9th Cir. 2012) ("an agency cannot meet its section 7 obligations by relying on a Biological Opinion that is legally flawed or by failing to discuss information that would undercut the opinion's conclusions").

B. FWS's biological opinion on the Alaska LNG Project is unlawful.

The FWS's biological opinion on the Alaska LNG Project is unlawful. The biological opinion reaches unfounded conclusions, fails to consider the best available science, conducts an improper jeopardy analysis, and fails to include an incidental take statement for the take of polar bears the agency admits will occur.

1. *The biological opinion omits key factors from consideration and is not based on the best available science.*

The FWS's biological opinion omits information constituting the best available scientific information regarding the environmental baseline and threats from the Alaska LNG Project. As one example, the FWS summarily concludes that the project is not likely to adversely affect sea otters because "(1) vessels associated with the Proposed Action would move comparatively slowly through the Action Area, and (2) sea otters can respond to vessel presence or disturbance

by moving away to a safe distance." FWS BiOp at 40. This conclusion contradicts the FWS's own stock assessment report finding that "boat strike[s are] a reccurring cause of death" for various species of sea otters, including the southwest Alaska distinct population segment of northern sea otters.[185] Other scientific evidence also indicates that ship strikes can cause death and injury of sea otters.[186] The FWS nowhere supports its conclusion that project-associated vessels will not adversely affect sea otters or describes what it means by ships moving "comparatively slowly." The FWS also overlooks or arbitrarily discounts science documenting the significant negative impacts that climate change is having on polar bears in evaluating the status of the species and the environmental baseline. *See supra* pp. 80-86. Indeed, the biological opinion largely ignores the fact that the SBS polar bear population (which contains only about 900 animals after falling 50% since the late 1990s), is among the most imperiled—if not the most imperiled—of all polar bear populations worldwide.[187]

2. FWS failed to conduct the proper jeopardy analysis.

Second, the FWS's no jeopardy conclusion unlawfully relies on uncertain mitigation measures. For example, the FWS's no jeopardy conclusion for polar bears is based on the fact that AGDC will use den detection surveys prior to engaging in activities in polar bear habitat.

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[185] FWS, NORTHERN SEA OTTER (Enhydra lutris kenyoni): Southwest Alaska Stock at 16 (Apr. 2014).

[186] *E.g.*, R. P. Schoeman RP *et al.*, *A Global Review of Vessel Collisions With Marine Animals*, 7 FRONT. MAR. SCI. 292 (2020); *see also* S. Rep. No. 111-362, at 2 (2010) (noting that boat strikes are "low-level, but persistent, causes of direct human-caused mortality" of southern sea otters).

[187] *See* J. F. Bromaghin *et al.*, *Polar Bear Population Dynamics in the Southern Beaufort Sea during a Period of Sea Ice Decline*, 25 ECOLOGICAL APPLICATIONS 634 (2015) (Bromaghin *et al.* 2015); Polar Bear Specialist Group, *Scientific Report on Polar Bear Conservation Status and Research Efforts*, Meeting of the Parties to the 1973 Agreement on the Conservation of Polar Bears, Longyearbyen, Svalbard, Norway (2020) (Status Table showing SBS bears with the greatest population decline, worst sea ice metrics, and highest ratio of human-caused removals: population).

See, e.g., FWS BiOp at 34. However, the ability of such surveys to actually detect dens is uncertain. In fact, as described above, the best available science indicates that such surveys are often ineffective; and that weather conditions significantly impact the efficacy of FLIR surveys and the optimal conditions for conducting them exist only about 4% of the time.[188] Yet the FWS nowhere addresses this science or how the lack of effective den detection surveys could affect its no jeopardy conclusion. Such failure is especially troubling in light of scientific evidence indicating that polar bears are increasingly using terrestrial denning areas,[189] and thus increasingly likely to encounter project-related activities on the North Slope. The FWS's reliance on these and other uncertain mitigation measures to mitigate and minimize the effects to polar bears and other species under the FWS's jurisdiction violates the ESA. *See, e.*g, *Nat'l Wildlife Fed'n*, 524 F.3d at 935-36.

Third, the FWS failed to conduct a proper jeopardy analysis. Indeed, the biological opinion largely contains only broad descriptions of oil and gas activities on the North Slope and elsewhere in Alaska and then simply concludes that the additional activity under the Alaska LNG Project will not jeopardize polar bears or spectacled eiders. For instance, the FWS improperly dismisses its duty to analyze the impacts of the project on polar bears because "most infrastructure and human activities associated with the Proposed Project will be extensions or increases to facilities and activities that already currently exist to support oil development, processing, and transport." FWS BiOp at 105. And while the FWS at least acknowledges that the project could disturb polar bears, the Service shirks its duty to analyze such impacts by claiming that "[q]uantifying these effects over the life of the Proposed Action is made more

[188] *E.g.*, R. R. Wilson & G. M. Durner, *Seismic Survey Design and Effects on Maternal Polar Bear Dens*, 84 JOURNAL OF WILDLIFE MANAGEMENT 201, 206 (2020); T. S. *et al.* 2020.
[189] Bromaghin *et al.* 2015.

difficult due to possible future changes in the status, abundance, and distribution of polar bears in response to deteriorating arctic sea ice." *Id.* at 113. The FWS ignores the additional impacts of constructing a new pipeline, as well as new ice pads and roads, a gas treatment plant, transmission lines, and other project components in polar bear habitat, including areas designated as critical habitat. *See id.* at 107. In doing so, the FWS both failed to analyze properly the direct and indirect effects of the Alaska LNG Project on protected species, and failed to analyze properly the aggregate effects in light of the status of the species, environmental baseline, and cumulative impacts as required by law. *See, e.g.*, *Turtle Island Restoration Network v. Dep't of Comm.*, 878 F.3d 725, 735 (9th Cir. 2017); 16 U.S.C. § 1536(a)(2); 50 C.F.R. §§ 402.02, 402.14(g).

3. FWS failed to include a proper incidental take statement.

Finally, the FWS's biological opinion fails to include a valid incidental take statement (ITS). The section of the biological opinion labeled "incidental take statement" declares that while the FWS has "enumerated the extent of anticipated incidental take of polar bears, the [FWS] is not authorizing incidental take of polar bears under the ESA" in the biological opinion. FWS BiOp at 117. Rather, the FWS "will defer to [letters of authorization issued under the MMPA] in their future iterations as being the vehicles through which incidental take of polar bears will be enumerated and authorized." *Id.* This approach fails to comply with the FWS's ESA obligations in multiple ways.

The plain language of the ESA requires the FWS to include an ITS authorizing the take of protected species when the agency finds such take is reasonably likely to occur. Failure to include one under those circumstances "is about as straightforward a violation of the ESA as they come." *Ctr. for Biological Diversity v. Ross*, No. CV 18-112 (JEB), 2020 WL 1809465, at

*10 (D.D.C. Apr. 9, 2020). Moreover, despite the agency's contention, its biological opinion does not enumerate the amount or extent of incidental take from the Alaska LNG Project as required by the ESA. *See* 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i)(1)(i). By specifying the amount or extent of such take, an ITS "set[s] forth a 'trigger' that, when reached, results in an unacceptable level of incidental take, invalidating the safe harbor provision, and requiring the parties to re-initiate consultation." *Ariz. Cattle Growers' Ass'n v. U.S. Fish & Wildlife Serv*., 273 F.3d 1229, 1249 (9th Cir. 2001); *see also Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv*., 235 F. Supp. 2d 1143, 1159 (W.D. Wa. 2002) (finding that "[T]he purpose of establishing a permissible take in an ITS is to ensure that even if the project is implemented in strict accordance with the plan, it will not result in a level of harm to the protected species that would cause the agency to reconsider its jeopardy determination. . . . An ITS cannot be effective in its purpose if there is no such 'trigger' to require the agency to reconsider its approval of the incidental take."), *abrogated on other grounds by Winter*, 555 U.S. at 22. By not specifying the amount or extent of polar bear take from the Alaska LNG Project, the FWS failed to include this required trigger.

Such failure is a significant error because, as the Ninth Circuit has recognized, the ESA requires the FWS to specifically quantify the amount of take where possible, while the MMPA does not. *See Ctr. for Biological Diversity v. Salazar*, 695 F.3d at 911. Indeed, at least one court found that plaintiffs were likely to prevail on an ESA claim where the "biological opinion [made] no attempt at all to estimate the incidental take of threatened or endangered species, and s[ought] to defer estimating the incidental take until it review[ed] the annual letters of authorization [under the MMPA]." *See Natural Res. Def. Council, Inc. v. Evans*, 232 F. Supp. 2d 1003, 1048-49 (N.D. Cal. 2002). This is because "[t]he biological opinion itself is required to

contain an ITS that '[s]pecifies the impact, i.e., the amount or extent, of such incidental taking on the species.'" *Id.* (quoting 50 C.F.R. § 402.14(i)(1)).

In short, while the ESA and MMPA both prohibit the take of polar bears, the statutes establish distinct processes and standards to exempt an activity from those general prohibitions. As such, compliance with one statute cannot substitute for compliance with the other—the FWS must meet the separate requirements of the ESA. *See Washington Toxics Coal. v. EPA*, 413 F.3d 1024, 1032 (9th Cir. 2005) ("[A]n agency cannot escape its obligation to comply with the ESA merely because it is bound to comply with another statute that has consistent, complementary objectives"), *abrogated on other grounds by Winter*, 555 U.S. at 22; *see also Ctr. for Biological Diversity v. Salazar*, 695 F.3d at 910-11 (noting that the FWS's ESA 4(d) rule for polar bears specifically states that authorization of take under the MMPA *does not* exempt an agency from complying with section 7 of the ESA). Yet the FWS has failed to do so here, depriving polar bears of important legal protections.

XI. MOTION FOR STAY

The Commission should issue a stay prohibiting the Applicants from pursuing any action authorized by its Order including, without limitation, any construction activity or activities related thereto, until the Commission issues a final decision on this Request for Rehearing.

The Commission has the authority to issue such a stay under 5 U.S.C. § 705, and should do so where "justice so requires."[190] In determining whether to issue a stay, FERC's policy is to consider "(1) whether the party requesting the stay will suffer irreparable injury without a stay,

[190] Intervenors note that because their request for rehearing is paired with a motion for stay, their request for rehearing is not a "stand alone" request and, therefore, the Commission has not delegated authority to the Secretary to toll the time for action on Intervenors' request for rehearing. 60 Fed. Reg. 62,326, 62,327 (Dec. 6, 1995).

(2) whether issuing a stay may substantially harm other parties, and (3) whether a stay is in the public interest."[191]

Intervenors and the public at large will suffer irreparable harm if the project is allowed to go forward. For example, there is no complete and adequate remedy once vegetation is cut and wetlands are destroyed. *Idaho Sporting Cong. Inc. v. Alexander*, 222 F.3d 562, 569 (9th Cir. 2000) (finding injunctive relief appropriate where "old growth forests plaintiffs seek to protect would, if cut, take hundreds of years to reproduce"). Construction will destroy vegetation in sensitive habitats, including tundra, and courts recognize that such habitat destruction is an irreparable injury. FEIS ES-4 ("The Project would result in significant long-term to permanent impacts on thaw sensitive permafrost (about 6,218 acres), thaw stable permafrost (about 3,499 acres), forest (about 12,440 acres); and wetlands (about 8,225 acres)."); FEIS 4-284 (gas treatment facilities and mainline facilities impact arctic tundra). Studies have indicated that the natural recovery of tundra vegetation may occur only over millennia, if ever.[192] Not a single tundra rehabilitation site has returned to its original state in over thirty years of rehabilitation efforts. According to the Order, "[a]pproximately 3,535 acres of wetlands would be temporarily affected by construction and operation of the project; approximately 8,225 acres of wetlands would be permanently affected." Order ¶ 84.[193] Further, construction would harm many populations of protected species. Project construction will disturb marine mammals, including the imperiled Cook Inlet beluga whale, and the FEIS contains only an incomplete analysis of

[191] *See, e.g., Tenn. Gas Pipeline Co., L.L.C.*, 154 FERC ¶ 61,263 (Mar. 30, 2016).
[192] Sullender 2017 at 16-17.
[193] FERC likely underestimates affected wetlands, as AGDC has disclosed that the project will require work directly in over 19,000 acres of wetlands, AGDC, Draft Wetlands Compensatory Mitigation Plan at 15 (Draft Compensatory Mitigation Plan) (Nov. 8, 2019), and has described over 10,000 acres of permanent impacts to wetlands in its application to the Army Corps of Engineers. *See supra* pp. 106-07.

these risks.[194] In addition, project construction would lead to harassment or fatalities and loss of habitat for polar bears. FEIS, App. O at O-80. The FEIS also acknowledges that project facilities "would be located within sensitive habitat for the Central Arctic [caribou] Herd throughout the year and the Mainline Pipeline would bisect the known occupancy range for the herd." FEIS at 4-306. Many other irreparable harms would flow from project construction, as discussed throughout this request and the FEIS itself.

The Supreme Court has explained that injury to the environment is often irreparable because, "by its nature, [it] can seldom be adequately remedied by money damages and is often permanent or at least of long duration, i.e., irreparable." *Amoco Prod. Co. v. Vill. of Gambell*, 480 U.S. 531, 545 (1987). The Court has also stated that "[p]art of the harm NEPA attempts to prevent in requiring an EIS is that, without one, there may be little if any information about prospective environmental harms and potential mitigating measures." *Winter v. Nat. Res. Def. Council, Inc.*, 555 U.S. 7, 23 (2008). The NEPA process is especially crucial when an agency is considering an activity with unknown or uncertain effects on the environment. *See Monsanto v. Geertson Farms*, 561 U.S. 139, 177 (2010) (Stevens, J. dissenting). And, reflecting the importance of NEPA review, the Ninth Circuit has explained "in the NEPA context, irreparable injury flows from the failure to evaluate the environmental impact of major federal action." *High Sierra Hikers Ass'n v. Blackwell*, 390 F.3d 630, 642 (9th Cir. 2004). The Ninth Circuit has also held that harm to an endangered species is irreparable "because '[o]nce a member of an endangered species has been injured, the task of preserving that species becomes all the more difficult.'" *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 886 F.3d 803, 818 (9th Cir.

[194] *See supra* pp. 70-93.

2018) (quoting *Forest Conserv. Council v. Rosboro Lumber Co.*, 50 F.3d 781, 785 (9th Cir. 1995)).

A stay will not significantly harm AGDC. Nearly six years have already passed since it first applied for authorization to export LNG and under the Order's conditional authorization,[195] the project still must complete additional permitting processes. As discussed *supra* pp. 29-30, market demand does not exist for this project. Risk associated with this project, including denial, has already long been internalized by AGDC. Furthermore, any harm associated with a stay would be purely economic. *Wis. Gas Co. v. FERC*, 758 F.2d 669, 674 (D.C. Cir. 1985) ("Monetary loss may constitute irreparable harm only where the loss threatens the very existence of the movant's business.").

A stay will advance the public interest by preventing irreparable environmental harm, while FERC takes this opportunity to correct the legal deficiencies in its process and the Order. Preserving the "precious, unreplenishable resources" of our natural environment promotes the public interest. *Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094, 1125 (9th Cir. 2002), *overruled on other grounds by Wilderness Soc'y v. U.S. Forest Serv*., 630 F.3d 1173 (9th Cir. 2011). As such, the public is served by enjoining federal action undertaken without "careful consideration" of environmental impacts. *Cottrell*, 632 F.3d at 1138; *see also Sierra Club v. Bosworth*, 510 F.3d 1016, 1033 (9th Cir. 2007) ("the public interest favor[s] issuance of an injunction because allowing a potentially environmentally damaging program to proceed without an adequate record of decision runs contrary to the mandate of NEPA"). As discussed above, in

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

issuing the Order FERC has failed to comply with NEPA, the ESA, and the NGA. Staying the effect of the Order to allow the time to correct these errors is in the public interest.

In weighing the delay caused to AGDC against the irreparable harm that will occur to the Intervenors and the public, the balance tips decisively in favor of issuing a stay until FERC finally decides the issues raised in this request. *See Amoco Prod. Co.,* 480 U.S. at 545 ("the balance of harms will usually favor the issuance of an injunction to protect the environment). Therefore, FERC should issue a stay prohibiting AGDC from pursuing any action authorized by its Order including, without limitation, any construction activity or activities related thereto and any condemnation proceedings, until FERC issues a final decision on this Request for Rehearing.

XII. COMMUNICATIONS

The undersigned have all intervened in this proceeding, and in so doing provided their appropriate address for communications and correspondence. We repeat and update that information below in full, adding the law firm Earthjustice as a contact on behalf of Chickaloon Village Traditional Council, Northern Alaska Environmental Center, and Sierra Club. Communications and correspondence regarding this proceeding should be served upon the following individuals:

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CONCLUSION

For the foregoing reasons, Intervenors respectfully request that FERC:

1. Grant Intervenors' request for rehearing;

2. Grant Intervenors' motion for a stay and immediately stay AGDC and its contractors from taking any action authorized by the Order;

3. Upon completion of the rehearing process, rescind the Order;

4. Grant any and all other relief to which Intervenors are entitled.

Respectfully submitted this 22nd day of June, 2020:

s/ Kristen Monsell
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CERTIFICATE OF SERVICE

I certify that on the 22nd day of June, 2020, I electronically filed the REQUEST FOR REHEARING OF ORDER GRANTING AUTHORIZATION OF THE ALASKA LNG PROJECT, with attachments, on behalf of Intervenors with:

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

I further certify that I served this Motion to Intervene and Certificate of Service on behalf of Intervenor on all parties listed on the service list compiled by the Secretary in this proceeding electronically.

DATED: June 22, 2020

s/ Erin Whalen

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