Institute *for*
Policy Integrity
NEW YORK UNIVERSITY SCHOOL OF LAW

August 15, 2022

To: U.S. Department of Energy

Subject: Draft Supplemental Environmental Impact Statement for the Alaska Liquefied Natural Gas Project (DOE/EIS-0512-S1)

The Institute for Policy Integrity at New York University School of Law[1] (Policy Integrity) respectfully submits this comment letter on the Department of Energy's Draft Supplemental Environmental Impact Statement for the Alaska LNG Project (the Project).[2] Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decision-making through advocacy and scholarship in the fields of administrative law, economics, and public policy. Policy Integrity frequently submits comments to federal agencies on the consideration of climate change impacts under the National Environmental Policy Act and Natural Gas Act.

The Department expressly conducted this supplemental analysis to "more fully evaluate . . . [greenhouse gas] emissions of exporting LNG from the proposed Project" and in recognition of the President's priorities to address climate change.[3] Its lifecycle analysis, however, is not up to this task. While the Department concludes that the Project would reduce total greenhouse gas emissions[4]—a conclusion that some politicians and project proponents have emphasized to bolster their support[5]—**its lifecycle analysis applies obviously flawed assumptions and cannot reasonably be interpreted to offer meaningful insight into the Project's effects on net greenhouse gas emissions.** The Department should not reach conclusions about the Project's total climate impacts based on this lifecycle analysis—nor should it apply a similar methodology for future export projects.

Under the Natural Gas Act, the Department has broad authority to assess whether a proposed export license is "consistent with the public interest."[6] As part of that determination,

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[1] This document does not purport to represent the views, if any, of New York University School of Law.

[2] U.S. Dep't of Energy, Draft Supplemental Environmental Impact Statement for the Alaska LNG Project (June 2022) (hereinafter SEIS).

[3] *Id.* at S-2.

[4] *Id.* at S-6 tbl.S-1; *id.* at S-23 ("Exporting LNG from the North Slope would not increase [greenhouse gas] emissions when providing the same services to society (through production of natural gas and oil) as the No Action Alternative."); *id.* Sec. 4.19.

[5] For instance, Sen. Dan Sullivan (R-Alaska) said that the review "affirms what I and many Alaskans have been arguing for years: Natural gas is a proven source of desperately needed energy that also presents the opportunity to reduce global greenhouse gas emissions." Carlos Anchondo, *DOE: Major LNG Project 'Would Not Increase' CO2*, E&E NEWS (June 30, 2022), https://perma.cc/8LBE-Q8P8.

[6] 15 U.S.C. § 717b(a).

the Department should consider the environmental impacts of the proposed export project, including effects on climate change.[7] Case law from the U.S. Court of Appeals for the D.C. Circuit strongly indicates that the Department must look at full lifecycle emissions and not limit its analysis to direct emissions from the transport itself.[8] Yet as explained below, **the Department's analysis for the Project improperly focuses on direct transport emissions, while effectively ignoring the Project's effect on total emissions including downstream and upstream emissions.**

This is because the Department's lifecycle analysis rests on a simple and erroneous assumption: That if the Project is not completed, the same amount of liquefied natural gas would continue to be supplied to the same destination countries, using existing export terminals.[9] That assumption drives the results: Because the modeled destination countries in East Asia are closer to Alaska than the Gulf Coast (where most existing export terminals are located), if the Project is completed then export spans a shorter distance and thus results in lower direct emissions. Other relevant and potentially confounding factors—such as the effects of the Project on supply, demand, consumption, and the energy mix in the destination countries—are not integrated into the lifecycle analysis.[10] That is, the primary variable being used to compare alternatives is the emissions from producing and transporting LNG, inappropriately cabining the analysis.[11]

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[7] *See* Sierra Club v. Dep't of Energy, 867 F.3d 189 (D.C. Cir. 2017) (upholding Department's consideration of upstream and downstream greenhouse gas emissions, without disputing the agency's authority to consider those factors); NAACP v. Fed. Power Comm'n, 425 U.S. 662, 670 & n.6 (1976) (explaining that the Natural Gas Act "undoubtedly [contains] other subsidiary purposes" beyond "the orderly development of plentiful supplies of electricity and natural gas," including "conservation, *environmental*, and antitrust") (emphasis added).

[8] Several D.C. Circuit decisions rejecting claims that the Federal Energy Regulatory Commission must assess indirect greenhouse gas emissions under Section 3 of the Natural Gas Act explicitly rely on the fact that the environmental impacts of the commodity, like those associated with the production and combustion of natural gas, fell within DOE's purview. *E.g.*, Sierra Club v. Fed. Energy Regul. Comm'n, 827 F.3d 36, 46–47 (D.C. Cir. 2016) (stating that effects from "increased emissions and induced production" resulting from an export license fall "squarely and exclusively within the Department of Energy's wheelhouse"); EarthReports, Inc. v. Fed. Energy Regul. Comm'n, 828 F.3d 949, 956 (D.C. Cir. 2016) (explaining that "the effects of emissions arising from the transport and consumption of exported natural gas" result from the Department's approval of an export license and thus fall under DOE's authority). In a related context, in pipeline certification under Section 7 of the Natural Gas Act, the D.C. Circuit held that the Federal Energy Regulatory Commission must consider the downstream and upstream greenhouse gas emissions from induced consumption and production, and not limit its analysis to direct emissions from the transport itself. Sierra Club v. Fed. Energy Regul. Comm'n (Sabal Trail), 867 F.3d 1357 (D.C. Cir. 2017); *see also* Birckhead v. Fed. Energy Regul. Comm'n, 925 F.3d 510 (D.C. Cir. 2019); Food & Water Watch v. Fed. Energy Regul. Comm'n, 28 F.4th 277 (D.C. Cir. 2022).

[9] *See, e.g.*, SEIS, *supra* note 2, at 4.19-3 ("To ensure consistency in modeling and comparison across the three scenarios, DOE modeled the [greenhouse gas] emissions associated with generating an equal amount of electricity (i.e., 1 megawatt hour) in each destination country. Under Scenarios 2 and 3, the LNG would be supplied by the proposed Project. Under Scenario 1, DOE modeled [greenhouse gas] emissions associated with LNG produced and supplied from the lower 48, since energy demand from foreign markets would remain and would need to be fulfilled from an alternate source under that scenario.").

[10] The lifecycle analysis includes a qualitative discussion of the varying energy mixes and decarbonization plans in the four modeled destination countries. *See id.* Appx. C at 12–14. However, it does not factor this information into its quantitative assessment, nor does it otherwise consider how this information may affect the Project's net emissions.

[11] SEIS, *supra* note 2, Appx. C at 15 ("The ocean transport route from the Gulf Coast to Asia is longer compared to the route from Alaska to the Asian markets. The shortest distance between the Gulf Coast and China is 140%

As confirmed both by empirical evidence and economic principles, **the Department's assumption that the Project will not affect natural gas supply and consumption is unreasonable.** Empirically, two facts particularly dispel the Department's assumption about displaced supply. For one, existing LNG export terminals are already operating near capacity.[12] And second, as U.S. export capacity has rapidly increased in recent years, actual exports have kept pace.[13] The Department's assumption that existing terminals will simply absorb the supply expected from the Project is entirely inconsistent with these facts. In reality, the addition of new U.S. export capacity through the Project is very likely to increase actual exports—an important factor that the lifecycle analysis disregards.

Economic theory is consistent with this empirical evidence and further dispels the assumptions underlying the Department's lifecycle analysis. In particular, economic theory counsels that the addition of natural gas to the market will increase the total supply of natural gas, increase consumption, and potentially exacerbate climate change.[14] That additional supply could partially displace more carbon-intensive fossil fuels (such as coal), but particularly over the long-term, the additional supply could also partially displace carbon-free renewable energy sources.[15] Increased exports also partially displace forgone consumption, likely producing an increase in total energy consumption.[16] These effects can be far more significant than the transportation-related effects upon which the Department's analysis focuses.[17]

Moreover, **even if the Department were correct that the same natural gas would flow to the same destination countries if the Project were not approved—which is highly suspect, for the reasons discussed above—there would still be an impact on consumption**

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longer than the route from Alaska to China, so the impact of transporting LNG by ocean tanker is expected to be greater when moving from the Gulf Coast to Asia."). The lifecycle analysis finds a second "major reason" that the Project would reduce greenhouse gas emissions: that "the GHG intensity of natural gas from the Gulf Coast region would be expected to be higher" than the oil produced in Alaska. *Id.* at 16. This explanation is also based entirely on the Department's premise that if the Project is not approved, the same amount of oil would flow to the same destination countries, except that it would be supplied through the Gulf Coast.

[12] *The United States Became the World's Largest Exporter in the First Half of 2022*, U.S. Energy Info. Admin. (July 25, 2022), https://perma.cc/WK3H-2JRY (showing chart comparing LNG export capacity with actual LNG exports from 2016 to the present); Press Release, U.S. Dep't of Energy, DOE Issues Two LNG Export Authorizations (Mar. 16, 2022), https://perma.cc/Y4RW-RDKG ("U.S. exporters are already exporting at or near their maximum capacity[.]").

[13] U.S. Energy Info. Admin., *supra* note 12.

[14] *See* N. GREGORY MANKIW, PRINCIPLES OF ECONOMICS 74–78, 80–81 (5th ed. 2008); *see also* RACHEL ROTHSCHILD & MAX SARINSKY, INST. FOR POL'Y INTEGRITY, TOWARD RATIONALITY IN OIL AND GAS LEASING 11 (2021), https://perma.cc/A3ZN-YXQG.

[15] *See* Shuting Yang et al., *Global Liquefied Natural Gas Expansion Exceeds Demand 2 for Coal-to-Gas Switching in Paris Compliant Pathways*, ENV'T RSCH. LETTERS, June 7, 2022, at 6–7; *see also* LAURA A. FIGUEROA & SARAH LADIN, INST. FOR POL'Y INTEGRITY, THE PUBLIC INTEREST REVIEW FOR LNG-RELATED AUTHORIZATIONS 33–34 (forthcoming 2022).

[16] FIGUEROA & LADIN, *supra* note 15, at 32 ("Beyond displacing other resources, the addition of natural gas to the market also increases the total global supply of fossil-fuel energy, which generally has the effect of lowering prices and increasing consumption, furthering the potential for LNG exports to exacerbate climate change.").

[17] *See* JAMES BRADBURY ET AL., DEP'T OF ENERGY, GREENHOUSE GAS EMISSIONS AND FUEL USE WITHIN THE NATURAL GAS SUPPLY CHAIN 4 (2015) (attributing roughly 80 percent of all greenhouse emissions generated by natural-gas supply chain to combustion).

because the natural gas would cost more to transport,[18] that increased cost would be passed along to consumers,[19] and consumers would reduce consumption in response to higher prices. Even assuming the Department's baseless premise, therefore, its lifecycle analysis still omits key consumption effects that call into question its finding that the Project will reduce greenhouse gas emissions.

Because the Department's lifecycle analysis does not consider these various substitution effects, it cannot reasonably be interpreted to evaluate the Project's total effect on greenhouse gas emissions. Rather, **the Department's analysis effectively rests on the assumption of "perfect substitution" that numerous courts have rejected.** In one key case, for instance, the U.S. Court of Appeals for the Eighth Circuit rejected the Surface Transportation Board's assumption that a proposed coal railroad would not increase total coal supply, finding the assumption to violate basic economics.[20] Other courts have specifically rejected the notion that domestic natural-gas production does not affect foreign natural-gas consumption, recognizing that natural gas is a global commodity and so domestic policies influence foreign consumption patterns.[21] Thus, while the Department attempts to use this analysis to justify the position that the Project will not result in a net increase in emissions (and will actually reduce emissions), its analysis does not justify such a conclusion.

Rather than draw unfounded conclusions from its lifecycle analysis, the Department should more robustly assess how the Project may affect fuel consumption and substitution. Other agencies including the Department of the Interior and Environmental Protection Agency apply models of market dynamics that consider how the addition or subtraction of one source of energy will affect other energy sources.[22] Additional models are available—including one from the U.S. Energy Information Administration—that are designed to capture international market

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[18] *See* SEIS, *supra* note 2, Appx. C at 15 (recognizing "additional costs" from transporting to East Asia from Gulf Coast rather than from Alaska). *See also Gasoline Explained: Regional Gasoline Price Differences*, U.S. Energy Info. Admin. (last updated Jan. 5, 2022), https://perma.cc/KZ5X-N8JJ ("Retail gasoline prices tend to be higher the farther the source of supply is from where gasoline is sold because transportation costs increase when the distance from the source of gasoline supply increases. These supply sources include refineries, ports, and pipeline and blending terminals."); *Gasoline & Diesel Fuel Update*, U.S. Energy Info. Admin. (last updated Aug. 8, 2022), https://perma.cc/BRU9-ZYCB (reporting that between 8–14% of gas cost reflects distribution and marketing).

[19] *See* Justin Marion & Erich Muehlegger, *Fuel Tax Incidence and Supply Conditions*, 95 J. PUB. ECONS. 1202 (2011) (finding that "[c]onsistent with prior literature on gas tax incidence . . . state gasoline and diesel fuel taxes are on average fully and immediately passed on to consumers").

[20] Mid States Coal. for Progress v. Surface Transp. Bd., 345 F.3d 520, 549 (8th Cir. 2003) (explaining that "the proposition that the demand for coal will be unaffected by an increase in availability and a decrease in price, which is the stated goal of the project, is illogical at best."); *see also* WildEarth Guardians v. Bureau of Land Mgmt., 870 F.3d 1222, 1236 (10th Cir. 2017) (rejecting an analysis from the Bureau of Land Management finding that fossil-fuel leasing would not affect greenhouse gas emissions, finding the "perfect substitution assumption arbitrary and capricious because" it is "contrary to basic supply and demand principles").

[21] Ctr. for Biological Diversity v. Bernhardt, 982 F.3d 723, 736–40 (9th Cir. 2020); Sovereign Inupiat for a Living Arctic v. BLM, 555 F. Supp. 3d 739, 762–67 (D. Alaska 2021); Friends of the Earth v. Haaland, No. CV 21-2317 (RC), 2022 WL 254526, at *12–15 (D.D.C. Jan. 27, 2022).

[22] For a discussion of three of these models—the Department of the Interior's MarketSim, the Environmental Protection Agency's Integrated Planning Model, and the Energy Information Administration's National Energy Modeling System—see PETER HOWARD, INST. FOR POL'Y INTEGRITY, THE BUREAU OF LAND MANAGEMENT'S MODELING CHOICE FOR THE FEDERAL COAL PROGRAMMATIC REVIEW (2016), https://perma.cc/MAH8-ZWHD.

dynamics.[23] The Department should explore the possibility of applying one of these available models for its review of the Project and other proposed export licenses.

But even without detailed modeling, the Department can still make reasonable (if imprecise) assessments of energy substitution based on the current and long-term energy mix of the expected destination countries.[24] If the exports appear likely to replace coal—as DOE suggests may be the case in China[25]—then that would suggest that the project may lead to a net reduction in emissions. But for countries undergoing a more rapid transition to renewables—such as Japan[26]—this would suggest adverse and potentially substantial climate effects.[27] The Department should ensure that it considers substitution impacts over the lifetime of the Project and not assume that today's energy mix will remain for decades into the future, particularly for destination countries with legal requirements or international commitments to substantially reduce their carbon footprint.[28]

In order to make such an assessment, however, **the Department must more closely consider its selection of destination countries.** While the Department assumes that all approved export would flow to Japan, South Korea, China, and India,[29] it provides limited justification for that assumption. Specifically, while the Department offers some limited and general justification (to varying degrees by country) for why the selected countries may import more LNG in the future,[30] it does not justify its exclusion of other potential destinations or include sensitivity analysis for its assumptions. Nor does it point to any particular evidence from the record indicating the likely destination countries. Because a proper substitution analysis (as well as the

[23] EIA's model is known as the World Energy Projection System. *See Handbook of Energy Modeling Methods*, ENERGY INFO. ADMIN. (Oct. 14, 2020), https://perma.cc/Z95N-H6YK. The International Energy Agency has also developed a model of global energy, known as the World Energy Model. *See World Energy Model*, INT'L ENERGY AGENCY (Oct. 2021), https://perma.cc/65L2-GDZS.

[24] *See* JAN HASSELMAN & PETER ERICKSON, EARTHJUSTICE, NEPA REVIEW OF FOSSIL FUELS PROJECTS—PRINCIPLES FOR APPLYING A "CLIMATE TEST" FOR NEW PRODUCTION AND INFRASTRUCTURE 14 (2022), https://perma.cc/M44L-G6YH (suggesting qualitative substitution assessment).

[25] *See* SEIS, *supra* note 2, Appx. C at 13–14 ("China's high dependence on coal and future commitments to increase gas imports will mean that LNG and pipeline gas imports will also continue to rise in the near-term.").

[26] *Id.* at 12–13 (stating that Japan will rely more heavily on liquefied natural gas "in the next decade" but that "the energy supply profile for Japan needs to change drastically" for the country to meet its commitment to achieve net-zero greenhouse gas emissions by 2050).

[27] For instance, the Bureau of Ocean Energy Management recognizes that the long-term transition to renewable energy is likely to increase the net climate impact of today's fossil-fuel projects. Bureau of Ocean Energy Management, 2023–2028 National Outer Continental Shelf Oil and Gas Leasing Proposed Program 5-52 to -56 (July 2022).

[28] In its lifecycle analysis, the Department accounts for future policy and technological development by considering the possibility that combustion-related emissions may be substantially mitigated through the use of carbon capture and storage. *E.g.*, SEIS, *supra* note 2, at 4.19-3. At the moment, however, the use of carbon capture and storage is limited, including just a few operational facilities in the East Asian destination countries. GLOBAL CCS INSTITUTE, GLOBAL STATUS OF CCS 2020 at 17 fig.5 (2020), https://perma.cc/WAP2-9U5U. The fact that the Department projects long-term changes in carbon-capture technology that reduce the Project's potential climate impacts provides further support for the agency to also project reasonable long-term changes in renewable consumption that are likely to have a counteracting effect.

[29] *E.g.*, SEIS, *supra* note 2, at 2-19 ("The LCA Study evaluates the life cycle global warming potential of delivering LNG from Alaska to four destination countries: Japan, South Korea, China, and India.").

[30] *Id.* Appx. C at 12–14.

Department's narrow lifecycle analysis) can be sensitive to assumptions about destination countries, the Department should review those assumptions carefully and ground its choices in evidence. To the extent there is uncertainty, the Department should consider conducting sensitivity analysis applying different assumptions about the export destination.

Additionally, **the Department's substitution assumptions in its lifecycle analysis must be consistent with its assessment of economic benefits**. This is currently not the case. While the Department assumes for the purpose of assessing greenhouse gas emissions that the same production and transport would occur from existing locations if the Project is not approved, its analysis of economic impacts contains no mention of this alleged displacement and instead reports that the Project, if completed, would result in the construction of new wells that would bring "[b]eneficial economic impacts" including "[i]ncreased state and local government revenues."[31]

Of course, **if the Department is actually correct that the Project is merely displacing export that would occur from existing Gulf Coast terminals, with no cumulative impact on total export or production, then this would mean that the Project would cause natural gas production and export from the Gulf Coast to decline, thus offsetting the Project's supposed economic benefits. Yet this receives no mention in the economic analysis**. Instead, according to the Department's analysis, the Project is boosting gas production when considering economic impacts but not boosting gas production when considering climate impacts. The Department must reevaluate this lopsided and inconsistent analysis,[32] and should ensure that it incorporates the same assumptions into its economic analysis as it does its climate analysis (and vice-versa).

Finally, **the Department should apply the current global warming potential (GWP) values and not rely on outdated values**. In its lifecycle analysis, DOE relies on GWP values from the IPCC's Fourth Assessment Report.[33] But that report was released in 2007, and is now outdated. And strangely, DOE's lifecycle analysis reverts some key underlying data, which had been reported using more recent assessment reports, back to the Fourth Assessment values.[34] The Department should apply the most recent values from IPCC's Sixth Assessment Report, which was released earlier this year. In particular, the GWP values for methane have increased substantially since the 2007 estimates.[35]

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[31] *Id.* at 4.11-3. *See also id.* at 4.11-4 to -7 (describing beneficial economic impacts from upstream development).

[32] *See, e.g.*, Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172, 1198 (9th Cir. 2008) (Agency cannot "put a thumb on the scale" through a lopsided analysis); Bus. Roundtable v. Secs. & Exch. Comm'n, 647 F.3d 1144, 1148–49 (D.C. Cir. 2011) (criticizing agency for "inconsistently and opportunistically fram[ing] the costs and benefits" of its action).

[33] *Id.* Appx. C at 12–14

[34] *Id.* Appx. C at 20 ("[T]he transport distance was adjusted to represent the distance to each receiving country in this study and the GWP values were changed from IPCC AR5 to IPCC AR4 values, the default GWP for this report.").

[35] *See IPCC Sixth Assessment Report Global Warming Potentials*, ERCE (Aug. 26, 2021), https://perma.cc/V33V-4FQZ (comparing GWPs from AR4 through AR6).

In summary, the Department's lifecycle analysis is based on implausible assumptions about supply and demand, falsely assumes perfect substitution, insufficiently considers the choice of destination countries, and is inconsistent with the agency's analysis of the Project's economic impacts. The Department should conduct a more robust analysis that corrects for these flaws.

Sincerely,

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