The Public Interest Review for LNG-Related Authorizations
Copyright © 2022 by the Institute for Policy Integrity.
All rights reserved.

Institute for Policy Integrity
New York University School of Law
Wilf Hall, 139 MacDougal Street
New York, New York 10012

Sarah Ladin is a Senior Attorney at the Institute for Policy Integrity at New York University School of Law, where Laura A. Figueroa is a Legal Fellow. The authors thank Dena Adler, Adrienne Bloch, Lance Bowman, Eric Huber, Molly Lutton, Moneen Nasmith, Bakeyah Nelson, Bridget Pals, Alec Peters, Richard Revesz, Max Sarinsky, Derek Sylvan, Jill Tauber, Burçin Ünel, Amy Vernon-Jones, and Amanda Zerbe for their valuable contributions and feedback.

This report does not necessarily reflect the views of NYU School of Law, if any.
## Table of Contents

Executive Summary i

LNG Exports in Context v

I. Statutory and Regulatory Framework 1
   A. Division of Authority 1
      1. Bifurcation of Section 3 Responsibilities 1
      2. Bifurcation of Analytical Obligations 2
   B. Section 3 Public Interest Standard 3
      1. Authorization for Natural Gas Imports and Exports 4
      2. Authorization for Siting, Construction, Expansion, or Operation of LNG Terminals 6
   C. Authority for DOE and FERC to Consider Environmental Impacts 7
   D. The Regulatory Review Process 8
      1. FERC General Procedures 8
      2. Department of Energy General Procedures 9

II. Current Agency Review of Climate Impacts 11
   A. FERC Reviews in Practice 11
      1. Consideration of Climate Impacts 11
      2. Consideration of the No Action Alternative 14
      3. Judicial Review of FERC’s Orders 15
      4. FERC’s 2022 Draft Policy Statements 16
   B. DOE Reviews in Practice 18
      1. Consideration of Climate Impacts 18
      2. Judicial Review of DOE’s Orders 21
      3. 2020 Categorical Exclusion Rule 22

III. Improving Consideration of Climate Impacts for Section 3 Authorizations 24
    A. Avenues to Improve FERC’s Assessment 24
       1. FERC Must Properly Consider Direct Emissions by Assessing their Significance 24
       2. FERC’s Practice of Quantifying Emissions and Comparing Them to Larger Totals Is Inadequate 25
       3. FERC Should Meaningfully Consider the No Action Alternative 27
B. Avenues to Improve DOE’s Assessment

1. DOE Must Properly Consider Indirect Greenhouse Gas Emissions
2. Despite the Department’s Claims, DOE Can Apply Reasonable Assumptions to Quantify Indirect Emissions
3. DOE’s Analysis Overlooks Important Substitution Considerations

C. FERC’s and DOE’s LNG-Related Authorizations Are Connected Actions Under NEPA and Must Be Considered Together

IV. Current Agency Review of Environmental Justice Impacts

A. FERC Reviews in Practice
   1. Consideration of Environmental Justice Impacts
   2. Judicial Review of FERC’s Environmental Justice Analysis
   3. FERC’s Draft Updated Certificate Policy Statement

B. Department of Energy Reviews in Practice

V. Improving Consideration of Environmental Justice for Section 3 Authorizations

A. FERC’s Environmental Justice Review Should Be Consistent and Transparent
B. FERC Should Consistently Use Census Block Data and Appropriate Comparison Groups to Identify Environmental Justice Communities
C. FERC Should Analyze Impacts on All Affected Environmental Justice Communities
D. FERC Should Consider Pollution Impacts Below the NAAQS
E. FERC Should Better Account for Cumulative Impacts on Overburdened Communities
F. FERC Should Conduct a Full Environmental Justice Analysis for All Project Alternatives

VI. Recommendations for Programmatic Reform

A. DOE Should Repeal the Categorical Exclusion Rule
B. DOE Should Conduct New Studies on Greenhouse Gas Emissions
C. DOE and FERC Should Publish New Guidelines on Public Interest Review
D. DOE and FERC Should Consider Revisiting Prior Authorizations—Particularly for Long-Term Export

Conclusion
Executive Summary

The United States has dramatically increased its liquefied natural gas (LNG) export capacity in recent years. It will soon have the world’s largest LNG export capacity, and has set record highs for LNG shipments as numerous new export facilities have become operational. The country’s LNG exports increased more than 125-fold between 2015 and 2021, with further increases expected as previously approved facilities come online.

This increase in export capacity provides some economic and strategic benefits, especially as many U.S. allies are seeking to avoid purchasing gas from Russia in the wake of its invasion of Ukraine. However, additional export capacity also may come with substantial long-term environmental costs and equity impacts. In particular, LNG exports stimulate both natural gas extraction at home and consumption abroad, while locking in capital intensive fossil-fuel infrastructure with the potential to operate (and emit pollution) for decades. LNG infrastructure also causes localized pollution that can further burden nearby communities and exacerbate existing inequalities. Most approved LNG terminals are located along the Gulf Coast—home to communities already overburdened with high levels of pollution and poor health outcomes.

Despite these climate and environmental justice effects, federal regulators have paid little attention to the environmental impacts of LNG exports in approving the expansion in export capacity. This report offers recommendations for federal regulators to improve their evaluation of applications for LNG export, highlighting particular areas where agencies are not meeting their legal obligations to meaningfully consider climate and environmental justice effects. This report does not, however, take a position on whether any particular present or future application for LNG export serves the public interest. Russia’s invasion of Ukraine has intensified pressure to quickly approve new export capacity and to reassess the medium- and long-term strategic role that U.S. LNG exports must play. While an expansion of U.S. LNG exports is unlikely to offer near-term benefits given the time required to approve, finance, construct and bring online new infrastructure, there may be important strategic benefits to expanding U.S. export capacity to meet future energy needs of allies. Agencies should appropriately weigh these benefits when considering LNG-related authorizations.

Nonetheless, there are also important environmental implications to these decisions, including climate and justice implications, which have been understudied and under-considered by the agencies charged with evaluating the public interest. Long-term expansion of export capacity may impede global decarbonization efforts needed to meet international

---

7. Robert Rozansky, Global Energy Monitor, How Long Does It Take To Build an LNG Export Terminal in the United States? 1 (2022), https://perma.cc/3JZL-AA55 [hereinafter Timeline of LNG Export Terminals] (“Despite a renewed push by the US government and LNG industry to advance proposed export terminals, new projects are not a viable solution to Europe’s near-term gas needs” because “such facilities have typically taken three to five years to build in the United States.”).
climate targets and disproportionately harm already overburdened environmental justice communities in the United States. Such considerations merit careful attention when assessing consistency with the public interest. This report is centrally focused on ensuring federal agencies meet their legal obligation to conduct a robust review of LNG applications that carefully balances adverse impacts against potential benefits.

This report begins as a guide to understanding the legal obligations of the Federal Energy Regulatory Commission (FERC) and the Department of Energy (DOE), and the process by which these agencies review authorization requests. As detailed in Section I of this report, federal exports are subject to different legal regimes depending on the destination country. For natural gas exports to countries with which the United States has a free trade agreement, the export itself is deemed by statute to be in the public interest and thus subject to minimal review. The vast majority of U.S. LNG exports are to countries with which the United States does not have a free trade agreement, and under Section 3 of the Natural Gas Act (NGA), those exports must be consistent with the public interest to be authorized. This public interest review is conducted by DOE. Applications for construction and operation of the LNG terminal itself, regardless of export destination, are reviewed by FERC for consistency with the public interest.

DOE and FERC both have broad authority to consider environmental impacts under their respective Section 3 authorities. However, both agencies have continually fallen short of those obligations by rubber-stamping proposed projects with minimal environmental consideration, including inadequate consideration of both climate and environmental justice impacts. This report argues that climate and environmental justice considerations should play a much larger role in authorization decisions for LNG exports and terminals, and offers recommendations for regulators to ensure these factors are appropriately considered in future reviews.

While this report offers a comprehensive analysis of climate and environmental justice considerations in DOE’s and FERC’s reviews under Section 3, it is limited in scope. For instance, other areas of the agencies’ review—including the assessments of economic benefits by DOE and FERC—are beyond the focus of this report. This report also does not address related authorizations by federal agencies, including the U.S. Maritime Administration’s authorization of offshore LNG facilities or FERC’s assessment of interstate pipelines to supply LNG facilities under the NGA. Finally, the report focuses on long-term export authorizations, and does not consider unique issues related to blanket, short-term, or small-scale applications.

---

8 See Int’l Energy Agency, Net Zero by 2050: A Roadmap for the Global Energy Sector 18 (2021), https://perma.cc/EH65-CX2Z (explaining that meeting international energy goals requires “a huge decline in the use of fossil fuels”). Experts around the globe are increasingly calling for nations to rapidly decarbonize by transitioning away from fossil fuels. See, e.g., id. at 21 (explaining that attaining net-zero emissions by 2050 likely requires that “there are no new oil and gas fields approved for development, and no new coal mines or mine extensions”); Climate Action Tracker, Climate Target Updates Slow as Science Ramps Up Need for Action 6 (2021), https://perma.cc/R54U-C6HV (“[G]as is still a fossil fuel, and still needs to be phased out as soon as possible.”); Intergovernmental Panel on Climate Change, Climate Change 2021: The Physical Science Basis Summary for Policymakers 28–31 (2021), https://perma.cc/SHYG-E7FR.
Considerations in Reviewing LNG-Related Authorizations

This report focuses on ensuring that climate and environmental justice effects are part of a robust review of the costs and benefits of LNG-related authorizations.

- U.S. LNG export capacity has grown significantly over the past decade and has and will likely continue to provide **strategic and economic benefits** as the world moves away from reliance on Russian natural gas.

- But, there are also may be **negative climate impacts** due to the long-lived nature of the authorizations and infrastructure that can lock in emissions and impede global progress toward critical climate goals.

- There are also **environmental justice impacts** that come with siting nearly all terminals in and near environmental justice communities already overburdened by infrastructure and pollution.

To date, the agencies responsible for evaluating LNG-related authorizations have done a poor job of analyzing these costs, creating significant legal risk for LNG approvals. DOE and FERC can implement straightforward steps to better analyze the climate and environmental justice implications of export applications, improving their decisionmaking.

Climate Impacts

Section II of this report discusses DOE’s and FERC’s approaches to assessing climate impacts in LNG-related authorizations, providing a survey of previous authorization orders. In short, neither agency has performed a comprehensive assessment of the effect of LNG-related authorizations on global greenhouse gas emissions and climate change. In future assessments, these agencies should improve their consideration of climate impacts.

FERC quantifies the greenhouse gas emissions from terminal construction and operation only, but does not assess their significance or meaningfully factor them into the public interest analysis. FERC has declined to apply available tools to assess the climate impacts of the resulting emissions, although recently published draft guidance may improve this analysis in the future. DOE’s review of climate impacts is similarly lacking, if not more so. Although it is obligated to consider the environmental impacts resulting from the export authorization, DOE has never comprehensively assessed the greenhouse gas emissions resulting from U.S. exports due to induced natural gas extraction and combustion. DOE has offered several justifications for this failure: arguing that such an assessment is not feasible, suggesting without sufficient analysis that U.S. exports may in fact mitigate climate change, and even claiming at times that induced greenhouse gas impacts fall outside the agency’s purview.

As detailed in Section III of this report, both FERC and DOE should conduct a more thorough review of climate impacts—and failure to do so may subject their actions to legal challenge. With respect to FERC’s assessment, a growing body of case law concludes that federal regulators must do more than merely quantify greenhouse gas emissions before approving energy projects, and must carefully consider emissions’ climate impacts. Such case law suggests that FERC must more rigorously assess the climate impacts of proposed LNG facilities.

DOE’s limited analysis of climate impacts should also be substantially improved. Existing case law clearly establishes that DOE must consider the climate impacts resulting from induced natural gas production and combustion, rebutting the Department’s prior claims to the contrary. Precedent from other agencies also belies DOE’s claim that it is impossible
to assess those impacts, as both the Environmental Protection Agency (EPA) and Department of the Interior routinely assess both upstream and downstream impacts in related regulatory contexts, sometimes using estimates that DOE itself developed. FERC’s new guidance also suggests this is possible. Additionally, numerous federal courts have held that agencies must consider the greenhouse gas emissions resulting from the increased energy consumption that inevitably results from investments in fossil-fuel infrastructure—an analysis that DOE has failed to perform.

In light of these numerous deficiencies, both FERC and DOE should improve the way they consider climate impacts in LNG-related proceedings, and more rationally weigh climate effects in determining whether and on what conditions to grant approval. Additionally, the deeply interrelated nature of DOE’s and FERC’s LNG-related authorizations may require the analysis be carried out in a single review.

Environmental Justice

Sections IV and V of this report concern the treatment of environmental justice in LNG-related authorizations, focusing on FERC’s siting approval for LNG terminals. As detailed in these sections, FERC’s assessment of the environmental justice effects of LNG facilities on local communities has been limited, and the agency should more meaningfully incorporate environmental justice into its decisionmaking.

Due to numerous methodological shortcomings, FERC’s analyses have rarely identified key environmental justice implications of LNG authorizations. For instance, the agency has often failed to identify relevant environmental justice communities due to poor methodological choices such as the use of census tracts (rather than census blocks) and a narrow selection of comparison populations. Additionally, FERC has inappropriately used compliance with EPA’s national ambient air quality standards to conclude that a project would have no adverse impacts on local communities, even though pollutants can have considerable adverse health impacts below legal ambient levels—particularly in already overburdened communities facing pollution from numerous facilities.

Section V identifies numerous avenues for FERC to improve its consideration of environmental justice, highlighting relevant legal precedent that suggests the agency should improve upon its analysis.

Looking Forward

This report concludes in Section VI with broader suggestions for key reforms beyond the context of any single adjudicatory proceeding. Among other recommendations, the section suggests that DOE bolster its consideration of upstream and downstream greenhouse gas effects by rescinding the categorical exclusion rule that the agency inappropriately promulgated in 2020 and conducting new studies that holistically evaluate the effects of U.S. exports on global emissions. It also suggests that both DOE and FERC promulgate updated and new guidance on the public interest review with respect to export and terminal authorization applications. Finally, this section suggests that DOE revisit and potentially rescind or narrow prior authorizations of LNG exports, particularly if the agency conducts new analysis finding that LNG exports significantly exacerbate climate change.
LNG Exports in Context

This report begins with a short factual background that surveys the history of liquefied natural gas (LNG) export capacity, assesses the time needed for new projects to become operational, and discusses the geography of existing and proposed facilities. In a nutshell, domestic LNG export capacity has risen dramatically over the last few years due to the approval and operation of new facilities, with further increases expected as new projects become operational. Most of those new facilities are located along the Gulf Coast in Texas and Louisiana. But while many new projects have been constructed, they take time to become operational: the development process for export facilities can take years, typically three to five years to build after all approvals and financing have been secured. This means that approvals today are not likely to fill short-term energy needs.

**LNG Export Capacity Has Risen Dramatically**

In February 2016, LNG produced in the Lower 48 states was exported for the first time. Since then, LNG exports have risen steadily. While the nation exported 28 billion cubic feet of LNG in 2015 (all from Alaska), total U.S. exports jumped to 186 billion in 2016, over 700 billion in 2017, and more than 3.5 trillion in 2021. In other words, LNG exports have risen about 125 times since 2015. And that rise is likely to continue in the coming years, as previously-approved projects undergo construction and become operational.

### Growth in LNG Export Capacity

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S. quarterly liquefied natural gas peak export capacity (2016–2022) in billion cubic feet per day (Bcf/d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>Operating 4, Expected 7</td>
</tr>
<tr>
<td>2017</td>
<td>Operating 6, Expected 10</td>
</tr>
<tr>
<td>2018</td>
<td>Operating 9, Expected 18</td>
</tr>
<tr>
<td>2019</td>
<td>Operating 12, Expected 24</td>
</tr>
<tr>
<td>2020</td>
<td>Operating 15, Expected 30</td>
</tr>
<tr>
<td>2021</td>
<td>Operating 18, Expected 42</td>
</tr>
<tr>
<td>2022</td>
<td>Operating 20, Expected 24</td>
</tr>
</tbody>
</table>

*Source: EIA*

---

9. See Timeline of LNG Export Terminals, supra note 7, at 1–2. All projects required at least two years from proposal to final investment decision. Id. at 2–3.


11. See id.


This massive increase has been made possible by a rapid expansion in export capacity. The first shipment of LNG from the continental United States began with the opening of the Sabine Pass terminal along the Gulf of Mexico. Since then, a number of major facilities have become operational: Sabine Pass itself has undergone multiple expansions since opening in 2016, and in total, more than 20 major export facilities (including expansions) have been approved that are currently operational or expected to become operational later this year.

**Most New Facilities Are Located Along the Gulf Coast**

New facilities have overwhelmingly been sited along the Gulf Coast in Texas and Louisiana, in close proximity to one another. Of the seven LNG export facilities in the continental United States (including the Calcasieu facility that opened earlier this year), five are located along the Gulf Coast in these two states. Approved facilities—some of which are under construction, others of which are not—are also overwhelmingly located along the Gulf Coast, including major projects such as the Golden Pass and Lake Charles LNG export facilities.

---

14 See U.S. ENERGY INFO. ADMIN., supra note 1 (charting LNG export capacity increases).
17 See id. For a map of LNG facilities in operation as of February 2022, see FERC LNG Terminals Maps, supra note 13. The four existing terminals located along the Gulf Coast include the four largest by exports. Id.
18 FERC LNG Terminals Maps, supra note 13.
Construction and Development Take Years

LNG export terminals are not built overnight. Projects generally take approximately three to five years to become operational from the point of financial commitment, with several years spent on construction alone. In recent years, developers have also delayed numerous projects for financial reasons. As noted above, multiple projects have already received regulatory approval but are not yet in operation.

Due to the long lag time between regulatory approval and operation, experts generally agree that approving additional capacity cannot address short-term energy supply constraints—though it will have environmental and economic impacts for decades into the future.

---

19 Timeline of LNG Export Terminals, supra note 7, at 1–2.
20 See Lydia Plante & Ted Nace, Global Energy Monitor, Nervous Money: Global LNG Terminal Update 1–2 (2021), https://perma.cc/P6Q4-K42V (noting that, as of last year, in North America “10 of the 18 LNG export terminals [were] reporting [final investment decision] delays”).
21 See supra note 18 and accompanying text.
22 See, e.g., Clifford Krauss, Why the U.S. Can’t Quickly Wean Europe from Russian Gas, N.Y. Times (Mar. 25, 2022), https://perma.cc/Q3DZ-4MTG (“[E]nergy experts said that building enough terminals on both sides of the Atlantic to significantly expand U.S. exports of liquefied natural gas, or L.N.G., to Europe could take two to five years.”); Timeline of LNG Export Terminals, supra note 7, at 1 (“[N]ew projects are not a viable solution to Europe’s near-term gas needs.”).
I. Statutory and Regulatory Framework

The Natural Gas Act (NGA) is the primary framework for federal regulation of LNG. This section provides an overview of the Department of Energy’s (DOE or the Department) and the Federal Energy Regulatory Commission’s (FERC or the Commission) respective authorities under Section 3. It first outlines the division of authority between the two agencies and how this translates into differences in each agency’s analytical obligations. It then discusses how each agency has interpreted Section 3’s “public interest” standard, and highlights additional sources of authority requiring the agencies to consider environmental impacts as part of the public interest assessment. The section closes by outlining each agency’s regulatory processes and timelines.

A. Division of Authority

1. Bifurcation of Section 3 Responsibilities

The NGA originally assigned all statutory authority to FERC’s predecessor, the Federal Power Commission, but the Department of Energy Organization Act of 1977 transferred most of this authority to the Secretary of DOE. Relevant for this report, the statute granted DOE all authority over LNG imports and exports under Section 3. However, although not required by statute, the Secretary of DOE has formally and voluntarily delegated authority to FERC under Section 3 to “[a]prove or disapprove the construction and operation of particular facilities, the site at which such facilities shall be located, and with respect to natural gas that involves the construction of new domestic facilities, the place of entry for imports or exit for exports.” As part of that delegation, the Department has explicitly retained power to override FERC’s infrastructure determinations by “disapprove the construction and operation of particular facilities, [and] the site at which such facilities shall be located.”

2. Bifurcation of Analytical Obligations

In a series of cases discussed in this section, the U.S. Court of Appeals for the D.C. Circuit has clarified the respective analytical obligations of DOE and FERC under this bifurcated authorization and approval process. These cases indicate that DOE is responsible for assessing the environmental impacts of natural gas exports, whereas FERC is responsible for considering the direct environmental impacts of the LNG terminal and associated facilities.

25 15 U.S.C. § 717b (granting authority over exportation, importation, and LNG terminals to the Federal Power Commission, meaning that the power was then transferred to the Secretary of DOE through the Department and Energy Organization Act of 1977).
In each of the three cases relevant to these questions—Freeport, Sabine Pass, and EarthReports—petitioners challenged FERC’s approval of a different LNG export facility, claiming the Commission should have considered the indirect greenhouse gas emissions from induced natural gas production and combustion. The court rejected petitioners’ claims in all three cases, holding that the indirect effects associated with the export of natural gas as a commodity, including greenhouse gas emissions, are the responsibility of the Department of Energy.

In Freeport, the applicant sought to modify its existing facility and construct additional ones in order to shift from importing to exporting LNG. Challengers argued that FERC had failed to consider the indirect environmental effects of induced production, including increased domestic reliance on coal and the resulting increase in greenhouse gas emissions, and the cumulative environmental effects of all export projects. The court, however, found “the Commission’s [National Environmental Policy Act (NEPA)] analysis did not have to address the indirect effects of the anticipated export of natural gas.” Rather, the court explained, the impacts associated with the export fell “squarely and exclusively within the Department of Energy’s wheelhouse.” As such, FERC was not a legally relevant cause of the indirect effects of the export, including greenhouse gas emissions and other environmental impacts, and was not required to consider them.

Sabine Pass and EarthReports affirmed the decision in Freeport. In Sabine Pass, the D.C. Circuit again concluded that petitioners were challenging “the environmental effects flowing from greater natural gas exports at the [t]erminal,” but that FERC had not authorized an increase in exports, only an increase in production capacity. As such, the Commission did not need to consider the effects raised in the petition. EarthReports extended the logic to “the effects of emissions arising from the transport and consumption of exported natural gas” finding that “this indirect effect similarly ‘cannot occur unless a greater volume of [LNG] is shipped from [the terminal] and enters the international marketplace.’”

31 Freeport, 827 F.3d at 40 (“To the extent the Associations complain about the environmental consequences of exporting natural gas from Freeport’s terminal, those objections should be raised in the pending challenge to the Department of Energy’s order authorizing Freeport to export natural gas.”).
32 Id. at 42.
33 Id. at 42, 46.
34 Id. at 47.
35 Id. at 46–47.
36 Id. at 47.
38 Id.
These cases indicate that FERC is responsible for considering the direct effects of construction and operation of the LNG terminal and associated facilities, while DOE should consider the effects resulting from an increase in natural gas exports when deciding whether to approve such export under Section 3.  

B. Section 3 Public Interest Standard

According to Section 3 of the NGA, an application for either exports, imports, or LNG infrastructure shall be approved unless the overseeing agency finds that the approval will not be “consistent with the public interest.” The NGA does not define “public interest,” allowing DOE and FERC discretion to determine what factors to consider. DOE has issued policy guidelines interpreting the public interest standard and developed factors for consideration through approval orders. In general, both agencies have construed the public interest analysis to focus on economic concerns, with concurrent but separate assessment of environmental factors.

Summary Table: Review of LNG Activity

| All Imports                                                                 | Deemed by statute to be in the public interest. |
| Exports to countries with a free trade agreement with the United States   | Deemed by statute to be in the public interest. |
| Exports to countries without a free trade agreement with the United States| Reviewed by DOE for consistency with the public interest |
| On-shore infrastructure for export and import⁴³                           | Reviewed by FERC for consistency with the public interest |

⁴⁰ Notably, some stakeholders, like EPA have voiced disagreement with the D.C. Circuit’s position and noted that even if the court’s holding is correct, FERC should still quantify indirect emission and integrate that information into its public interest analysis. See Comments of U.S. Env’t Prot. Agency at 6, Consideration of Greenhouse Gas Emissions in Natural Gas Infrastructure Project Reviews, Docket No. PL21-3 (Apr. 25, 2022) (Accession No. 20220425-5440) (“EPA does not agree with the court’s reasoning that the Department of Energy’s authority over export licenses breaks the “causal chain” for NEPA purposes. Given the reasonably close causal relationship between upstream and downstream emissions and the Commission’s authorization role under the NGA for Section 3 projects, the Commission should explicitly decline to adopt the D.C. Circuit’s reasoning. Regardless, these opinions do not prevent the Commission from usefully disclosing and considering, in its NEPA and NGA analyses, the often large-scale upstream and downstream emission impacts of NGA Section 3 projects. To fully inform the Commission and public of these patently foreseeable environmental impacts, EPA continues to recommend that the Commission disclose upstream and downstream GHG emissions in its NGA certification process for NGA section 3 projects.”).

⁴¹ 15 U.S.C. § 717b(a). The public interest standard must be met for each new Section 3 application, and DOE and FERC have continuing authority to issue supplemental orders “as necessary or appropriate” to protect the public interest. Id.; see also Sabine Pass Liquefaction, LLC, Order No. 2961, Docket No. 10-111-LNG, Opinion and Order Conditionally Granting Long-Term Authorization to Export Liquefied Natural Gas from Sabine Pass LNG Terminal to Non-Free Trade Agreement Nations, at 33 n.45 (May 10, 2011) [hereinafter Sabine Pass DOE Conditional Order No. 2961]. The PGA also provides DOE with authority to “amend, and rescind such orders, rules and regulations as it may find necessary or appropriate to carry out the provisions of [the NGA].” 15 U.S.C. § 717o.

⁴² DOE has attempted to reduce the bifurcation by ending its practice of issuing conditional orders in most instances, see infra note 112.

⁴³ This report does not address off-shore infrastructure for export and import, although many of its recommendations may be relevant for that context.
1. Authorization for Natural Gas Imports and Exports

The Department retains exclusive authority to authorize the import and export of natural gas under Section 3. DOE shall approve such applications unless it “finds that the proposed exportation or importation will not be consistent with the public interest.”44 However, following the Energy Policy Act of 1992,45 all LNG imports (from any country)46 and exports to countries with which the United States has a Free Trade Agreement (FTA) are statutorily deemed to be “consistent with the public interest.”47 The U.S. has FTAs that require national treatment of natural gas with the following countries: Australia, Bahrain, Canada, Chile, Colombia, Dominican Republic, El Salvador, Guatemala, Honduras, Jordan, Mexico, Morocco, Nicaragua, Oman, Panama, Peru, Republic of Korea, and Singapore.48 The NGA thus directs DOE to grant such applications without “modification or delay”49 and the Department does so without conducting a public interest analysis or environmental review.50 However, the LNG export facility itself remains subject to public interest and environmental review regardless of the destination country.51

Export of LNG to non-free trade agreement (non-FTA) countries—currently over 70% of the nation’s total LNG exports52—has not been granted the same statutory presumption, and therefore must be reviewed for consistency with the public interest.53 Relying on the negative framing of Section 3(a), DOE begins this analysis with a rebuttable presumption that natural gas exports to non-FTA countries are in the public interest.54 Rather than affirmatively showing that the export is in the public interest, DOE looks at whether evidence in the record demonstrates that a proposed export is not.55

48 See Including Short-Term Export Authority in Long-Term Authorizations for the Export of Natural Gas on a Non-Additive Basis, 86 Fed. Reg. 2243, 2243 n.3 (Jan. 12, 2021). The United States also has FTAs with Israel and Costa Rica, but they do not require national treatment for trade in natural gas. Id.
54 See Sierra Club v. Dep’t of Energy (Sierra Club I), 867 F.3d 189, 203 (D.C. Cir. 2017) (“The Natural Gas Act provides that the Department ‘shall’ authorize exports to non-FTA nations ‘unless . . . it finds that the proposed exportation . . . will not be consistent with the public interest.’ 15 U.S.C. 717b(a) (emphasis added). We have construed this as containing a ‘general presumption favoring [export] authorization.’” W.Va. Pub. Serv. Comm’n v. U.S. Dep’t of Energy, 681 F.2d 847, 856 (D.C. Cir. 1982). Thus, there must be ‘an affirmative showing of inconsistency with the public interest’ to deny the application. Panhandle Producers & Royalty Owners Ass’n v. Econ. Regul. Admin., 822 F.2d 1105, 1111 (D.C. Cir. 1987).”); see also Smith House Testimony, supra note 50, at 45.
55 This is distinct from FERC’s affirmative obligation under Section 7. In order to approve a facility, FERC must issue a certificate after making a positive finding that a proposal “is or will be required by the present or future public convenience and necessity.” 15 U.S.C. § 717f(c), (e). The Section 7 review process is beyond the scope of this report, but the authors may provide notes about how Section 7 differs from Section 3, and where it may provide analogy.
The NGA does not define “public interest,” nor does it identify criteria to be considered in the public interest analysis.\textsuperscript{56} DOE has issued only one policy document explaining how it would review applications.\textsuperscript{57} The guidelines were issued in 1984 (prior to the 1992 legislation deeming imports and exports to FTA countries in the public interest), and crafted for evaluating LNG import applications. However, while the guidelines were initially developed for import applications, they remain relevant because DOE has since extended the guidelines to non-FTA export applications.\textsuperscript{58} The guidelines clarified the meaning of “public interest,” focusing on the competitiveness of the export, the need for the natural gas, and the security of supply as the key factors for analysis.\textsuperscript{59} The guidelines aimed to “establish a regulatory framework for buyers and sellers to negotiate contracts based on traditional competitive and market considerations, with minimal regulatory constraints and conditions.”\textsuperscript{60} The guidelines presumed commercial parties would develop competitive arrangements, placing the burden on “parties opposing an [export] . . . [to] demonstrate that the [export] arrangement is not consistent with the public interest.”\textsuperscript{61}

In applying these guidelines in the context of exports to non-FTA countries, DOE has similarly focused on economic considerations, mainly “(i) the domestic need for the natural gas proposed to be exported, (ii) whether the proposed exports pose a threat to the security of domestic natural gas supplies, (iii) whether the arrangement is consistent with DOE’s policy of promoting market competition, and (iv) any other factors bearing on the public interest, as determined by DOE.”\textsuperscript{62} As such, the Department has considered effects on the local economy, energy production, international relations, and the environment.\textsuperscript{63}

DOE has not issued further regulations or guidance on the factors relevant to assessing public interest. However, recognizing the Department’s “considerable latitude” in defining the public interest standard, a then-DOE assistant secretary described DOE’s process before Congress as one examining a “wide range of factors that Americans care about, everything from balance of trade, creation of jobs, GDP, impact of prices on consumers and American families, impact of prices on American industry, energy security and environmental issues.”\textsuperscript{64}


\textsuperscript{59} 1984 Guidelines, supra note 57, at 6688.

\textsuperscript{60} Id. at 6685.

\textsuperscript{61} Id.; see also Phillips Alaska DOE Order No. 1473, supra note 58, at 13 (citing Panhandle Producers & Royalty Owners Ass’n v. Econ. Regul. Admin., 822 F.2d 1105, 1111 (D.C. Cir. 1987)).

\textsuperscript{62} Corpus Christi Liquefaction Stage III, LLC, Order No. 4490, Docket No. 18-78-LNG, Opinion and Order Granting Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Nations, at 23 (Feb. 10, 2020) [hereinafter Corpus Christi Stage III DOE Order No. 4490].

\textsuperscript{63} Phillips Alaska DOE Order No. 1473, supra note 58, at 47–56; see also Cheniere Marketing, LLC & Corpus Christi Liquefaction, LLC, Order No. 3638, Docket No. 12-97-LNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Proposed Corpus Christi Liquefaction Project to Be Located in Corpus Christi, Texas, to Non-Free Trade Agreement Nations, at 13 (May 12, 2015) [hereinafter Corpus Christi DOE Order No. 3638] (“In prior decisions . . . DOE/FE has identified a range of factors that it evaluates when reviewing an application for export authorization. These factors include economic impacts, international impacts, security of natural gas supply, and environmental impacts, among others.”).

\textsuperscript{64} Smith House Testimony, supra note 50, at 76.
2. Authorization for Siting, Construction, Expansion, or Operation of LNG Terminals

Pursuant to its delegation from the Department, FERC is responsible for authorizing the siting, construction, expansion, and operation of LNG terminals. An LNG terminal includes “all natural gas facilities located onshore . . . that are used to receive, unload, load, store, transport, gasify, liquefy, or process natural gas,” excluding ships used in delivery and pipeline or storage facilities regulated under Section 7 of the NGA.

Although the plain language of Section 3(a) applies to the “proposed exportation” of natural gas, its public interest standard also applies to FERC’s consideration of LNG terminals under Section 3(e). However, FERC has not issued any regulations or guidance clarifying the meaning of “public interest” under Section 3 or the relevant factors to assess. FERC generally declines to consider economic or environmental issues relevant only to the exportation of LNG in its public interest analysis, concluding that these fall outside its regulatory purview. However, the Commission has considered economic effects from project construction and operation, including “increased employment opportunities and household income” in the nearby region and “state-wide economic benefits from worker spending and purchases of materials, supplies and services.”

65 See DOE Order Delegating Authority to FERC, supra note 26, at § 1.21.
66 15 U.S.C. § 717a(11). As noted above, FERC’s review of LNG terminals includes terminals to export LNG to FTA countries. See supra note 51 and accompanying text.
   FERC does not have jurisdiction over all LNG facilities, however. Outside the scope of this report, but worth mentioning for completeness, there are some LNG facilities that require an import or export authorization from DOE, but do not fall under FERC’s Section 3 authority. While the NGA defines an LNG facility broadly, FERC generally considers three criteria in determining whether a facility is subject to its jurisdiction: “(1) whether an LNG terminal would include facilities dedicated to the import or export of LNG; (2) whether the facility would be located at or near the point of import or export; and (3) whether the facility would receive or send-out gas via a pipeline.” New Fortress Energy LLC, 174 FERC ¶ 61,207, at P10 (2021) (Accession No. 20210319-3035). For interstate facilities, FERC considers “whether after leaving the facility the LNG is reintroduced into a pipeline such that the LNG terminal facilitates the interstate transportation of natural gas by pipelines.” Id.
67 See EarthReports, Inc. v. Fed. Energy Regul. Comm’n, 828 F.3d 949, 953 (D.C. Cir. 2016) (“Under NGA § 3, an LNG proposal shall be authorized unless the proposal will not be consistent with the public interest” (internal quotation marks omitted)); Vecinos para el Bienestar de la Comunidad Costera v. Fed. Energy Regul. Comm’n, 6 F.4th 1321, 1326 (D.C. Cir. 2021) (finding that FERC “must authorize the construction and operation of a proposed LNG facility unless it determines that the facility ‘will not be consistent with the public interest.’” 15 U.S.C. § 717b(a)” (emphasis added)).
   This standard applies regardless of whether the facility is intended at the time of application to be used for import and/or export to FTA nations, or for export to non-FTA nations. See Freeport LNG Devel., L.P., 107 FERC ¶ 61,278 (2004) (Accession No. 20040618-4001) [hereinafter Freeport FERC Import Authorization]. Thus, while an import may be statutorily found to be in the public interest, the statute does not provide that same presumption for the facility itself.
68 For its certification of interstate natural gas facilities under Section 7’s “public convenience and necessity” standard, 15 U.S.C. § 717f(c), FERC has issued policy statements discussing its balancing of relevant factors, including both economic and environmental factors. Certification of New Interstate Natural Gas Facilities, 178 FERC ¶ 61,107 (2022) (Accession No. 20220218-3034) [hereinafter Draft Updated Certificate Policy Statement]; see also Statement of Policy, Certification of New Interstate Pipeline Facilities, 88 FERC ¶ 61,227 (1999) (Accession No. 19990920-0193). However, the policy statement is not directly applicable under Section 3.
69 See, e.g., Alaska Gasline Devel. Corp., 171 FERC ¶ 61,134, at P 15 (2020) (Accession No. 20200521-3111) [hereinafter Alaska LNG FERC Order]; Tex. LNG Brownsville LLC, 169 FERC ¶ 61,130, at P 16 (2019) (Accession No. 20191122-3048) [hereinafter Brownsville LNG FERC Order]. As noted above, the D.C. Circuit has held that the Commission need not consider broader impacts resulting from the export, as opposed to from the LNG terminal itself. See supra notes 28–39 and accompanying text.
70 Alaska LNG FERC Order, supra note 69, at P 17.
71 Id. at PP 163–65; Brownsville LNG FERC Order, supra note 69, at P 58–59. In some older cases, FERC has also assessed the public interest with reference to factors similar to those it considers under Section 7: long-term capacity contracts, and the existence of adversely affected existing customers. See, e.g., Freeport FERC Import Authorization, supra note 67, at P 20 (authorizing import terminal construction and operation). Additionally, prior practice sometimes involved deferring to the public interest review undertaken by DOE because the Department’s Conditional Orders were published before FERC’s decision, and assessed the economic and public interest effects (aside from environmental impacts). FERC would “recognize DOE’s public interest findings in issuing [its] order.” Sabine Pass Liquefaction, LLC, 139 FERC ¶ 61,039, at P 28 (2012) (Accession No. 20120416-3033) [hereinafter Sabine Pass LNG FERC Order].
In evaluating environmental effects, FERC’s order typically summarizes the findings of the environmental documents prepared pursuant to NEPA. It often characterizes the environmental impacts of terminal construction and operation as “short term or temporary,” and after listing long-term impacts, invariably concludes that these may be “minimized” through mitigation measures. Rather than discussing and weighing these factors against economic impacts, FERC normally concludes that the environmental impacts of a project are “acceptable.”

C. Authority for DOE and FERC to Consider Environmental Impacts

As described above, the NGA does not prescribe specific public interest criteria, leaving DOE and FERC with discretion to determine the relevant factors under Section 3. The Supreme Court has concluded that the term “public interest” must be interpreted in a way that “take[s] meaning from the purposes of the regulatory legislation.” In particular, the Supreme Court stated that it is “clear that the [NGA’s] principal purpose . . . was to encourage the orderly development of plentiful supplies of electricity and natural gas at reasonable prices.” However, the Court also recognized that the NGA “undoubtedly [contains] other subsidiary purposes” such as “conservation, environmental, and antitrust” issues. This authority creates a duty for both DOE and FERC to “consider the public interest [that] is broader than promoting a plentiful supply of cheap gas, as important as that policy may be.”

Several other legal authorities also compel DOE and FERC to assess environmental impacts, including both greenhouse gas emissions and environmental justice effects. First, under NEPA, agencies must prepare a detailed analysis of any “[f]ederal actions significantly affecting the quality of the human environment” that includes the action’s environmental impacts and unavoidable adverse effects, analyzes potential alternatives, and balances both the short-term and long-term uses of the environment and irreversible and irretrievable commitments of resources. NEPA guidance has previously recommended that agencies assess both direct and indirect greenhouse emissions in their analysis.

NEPA guidance has also urged agencies to incorporate environmental justice principles into their planning and to identify approaches to avoid or minimize disproportionate health or environmental effects on minority and low-income populations.

72 See, e.g., Annova LNG Common Infrastructure, LLC, 169 FERC ¶ 61,132, at PP 20–21 (2019) (Accession No. 20191122-3047); Rio Grande LNG, LLC, 169 FERC ¶ 61,131, at P 22 (2019) (Accession No. 20191122-3046); Brownsville LNG FERC Order, supra note 69, at P 18; Cameron LNG LLC, 147 FERC ¶ 61,230, at P 58 (2014) (Accession No. 20140619-3026); see also Alaska LNG FERC Order, supra note 69, at P 251 (“The final EIS finds that, although the project would result in temporary, long-term, and permanent impacts on the environment, some of which would be significant, most impacts would be reduced to less-than-significant levels if the project is constructed and operated in accordance with applicable laws and regulations and the environmental mitigation measures recommended in the final EIS and required by this order”).


74 NAACP v. Fed. Power Comm’n, 425 U.S. 662, 669 (1976) (interpreting the phrase “public interest” in Section 201 of the Federal Power Act and Section 1 of the NGA). Courts “normally presume that . . . words . . . carry the same meaning when they appear in different but related sections” of a statute, although that presumption may be rebutted depending on the context. See Kirtsaeng v. John Wiley & Sons, Inc., 568 U.S. 519, 536 (2013). This suggests the phrase “public interest” should be interpreted consistently throughout the NGA.

75 NAACP, 425 U.S. at 669–70.

76 Id. at 670 n.6.


Several executive orders lend additional support for a thorough review of both the climate and environmental justice impacts of federal agency actions. Most significantly, Executive Order 12,898 instructs specified federal agencies to identify and address disproportionate health and environmental effects on minority and low-income communities, develop a strategy for implementing environmental justice, and promote nondiscrimination and access in federal programs. Executive Order 14,008 calls upon federal agencies to “address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities.”

D. The Regulatory Review Process

The regulatory review process under Section 3 involves at least two applications: a construction authorization application, which is reviewed by FERC, and an export authorization application reviewed by DOE. This section briefly describes each agency’s respective review process and highlights when and how stakeholders and the public can participate.

1. FERC General Procedures

FERC’s review of LNG facilities under Section 3 begins with a mandatory pre-filing process, in which the applicant will solicit stakeholder feedback and hold an “open house” with the affected community. Upon filing, the applicant will submit an environmental report discussing alternatives (including the no action alternative) and impacts. The Commission will provide public notice of the application, the initial deadline for intervention, and a schedule for the environmental review.

Once FERC provides public notice of an application, members of the public and other interested stakeholders may submit initial comments on and protests to the application. At this point, stakeholders may provide comment on the scope of the environmental review document, including what issues to consider and how, and raise concerns with the application. Upon publishing the environmental review document, whether a draft environmental impact statement...
(EIS) or a shorter environmental assessment (EA). FERC will provide another comment window before issuing a final version of the environmental analysis. Stakeholders can again raise concerns with the information gathered, and the analysis conducted, and seek amendment in the final version. Parties may also file to intervene at this point on environmental grounds based on the draft EIS. Parties have 30 days to seek rehearing or clarification of the order. Stakeholders must raise all arguments regarding flaws in the environmental review documents and the Commission's public interest analysis; any arguments stakeholders might wish to raise in litigation must be proffered in this request. The Commission then has 30 days to act upon such a request; failure to act results in a denial of the request for rehearing by the operation of law, allowing the petitioner to seek judicial review. If the Commission does not act within 30 days, it may still issue an order explaining its denial (or changing its position).

Only formal intervenors may request rehearing and challenge the authorization in federal court.

2. Department of Energy General Procedures

When an application for authorization to export to non-FTA countries is submitted that includes the required materials, DOE publishes a Federal Register notice inviting public participation and comment. The notice provides at least 30 days for the public to intervene, protest, or file comments on the application. This is the first opportunity for stakeholders to object to deficiencies in the application, provide evidence that the application is inconsistent with

---

93 Under NEPA regulations, agencies are instructed to “prepare an environmental assessment for a proposed action that is not likely to have significant effects.” 40 C.F.R. § 1501.5. FERC generally does not style its EAs as a “draft” but still provides a comment period. See, e.g., FM1000 Project & Leidy South Project Environmental Assessment, Nat’l Fuel Gas Supply Corp & Transco. Gas Pipe Line Co., LLC, Docket Nos. CP19-491 & CP19-494 (Feb. 2020) (Accession No. 20200207-3000).

94 Cf. 18 C.F.R. § 157.10(a)(2) (noting there will be a comment period for EIS).


96 “Any person may file to intervene on environmental grounds based on the draft [EIS] as stated at § 380.10(a)(1)(i) of this chapter. In accordance with that section, such intervention will be deemed timely as long as it is filed within the comment period for the draft [EIS].” 18 C.F.R. § 157.10(a)(2).

97 15 U.S.C § 717r(a); 18 C.F.R. § 385.713.

98 Exhaustion rules are stricter in the FERC context than for other agencies because the statute contains an identify requirement. 15 U.S.C. § 717r(b). Parties must themselves raise an argument in their request for rehearing to FERC in order to raise that argument in federal litigation. It is not enough that the argument was raised on the record before FERC by some other party. ASARCO v. Fed. Energy Regul. Comm’n, 777 F.2d 764, 774 (D.C. Cir. 1985) (“A mandatory petition-for-rehearing requirement, with or without the additional requirement of raising the very objection urged on appeal, is virtually unheard-of, but both requirements happen to exist in all three of the major statutes administered by FERC.”); Tenn. Gas Pipeline Co v. Fed. Energy Regul. Comm’n, 871 F.2d 1099, 1109 (D.C. Cir. 1989) (“Courts construe the jurisdictional rehearing requirements of § 19 strictly... § 19 permits judicial review of ‘an order’ only if both a timely petition for rehearing of ‘such order’ was filed with the Commission and any objections raised with the court were included in the petition.”).


100 In Allegheny Defense Project v. FERC, the D.C. Circuit concluded that FERC’s use of “tolling orders” to avoid making a determination on requests for rehearing within the statutory thirty day period was improper. 964 F.3d 1 (D.C. Cir. 2020) (en banc). FERC cannot prevent parties from seeking judicial review by using a “tolling order” to postpone issuing a final order that was ripe for review. However, the court also explained that the NGA (and the Federal Power Act) also allows the Commission to “modify or set aside” orders “[u]ntil the record in a proceeding [is] filed in a court of appeals.” Id. at 5 (quoting 15 U.S.C. § 717r(a)). The Commission has since styled these pre-record submission orders as an “order addressing arguments raised on rehearing.” See, e.g., Order Addressing Arguments Raised on Rehearing, ISO New England Inc., 173 FERC ¶ 61,161 (Nov. 19, 2020) (Accession No. 20201119-3057).

101 18 C.F.R. § 385.214.

102 See 10 C.F.R. § 590.202. This must include information on environmental impacts, id. § 590.202(b)(7), but may also include the applicant’s public interest analysis. See, e.g., Corpus Christi DOE Order No. 3638, supra note 63, at 22–38.

103 10 C.F.R. § 590.205(a).

104 Id.
the public interest, and request that DOE undertake further environmental review. DOE does not conduct its own environmental review initially, but instead acts as a cooperating agency, relying on FERC’s environmental review of the LNG terminal. DOE must then independently review the application to ensure that the agency meets its own NEPA obligations. If no further environmental review is warranted, it may adopt FERC’s review.

DOE will review any comments or protests, any information gained through the NEPA process, and any other information submitted to the docket by the Department or stakeholders. The Department will then issue an order determining whether the export is not inconsistent with the public interest. In a limited number of instances DOE may choose to issue a conditional order that includes its public interest analysis of “economic and public benefits,” but conditions final approval on the Department’s review and adoption of FERC’s environmental review documents. Parties have 30 days to seek rehearing or clarification of the order, challenging DOE’s analysis. The Department has 30 days to act upon such a request; the failure to act results in a denial by the operation of law, allowing the petitioner to seek judicial review.

See, e.g., Venture Global CP2 LNG, LLC; Application for Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Nations, 87 Fed. Reg. 1133, 1133 (Jan. 10, 2022) (“Parties that may oppose this Application should address these issues and documents in their comments and protests, as well as other issues deemed relevant to the Application.”); see also, e.g., Sierra Club’s Motion to Intervene, Protest, and Comments, Cameron LNG, LLC, Docket No. 11-162-LNG (Apr. 23, 2012) (arguing that the application is not in the public interest and has not provide adequate environmental and economic analysis, including sufficient NEPA analysis).


Id. at 22.

See, e.g., Corpus Christi DOE Order No. 3638, supra note 63, at 11 (detailing the contents of the administrative record).

Under current policy, conditional orders likely will only be published for exports from terminals in Alaska, although other circumstances are possible. See infra note 112.

Sabine Pass LNG FERC Order, supra note 71, at P 28 (recognizing DOE’s findings regarding economic and public benefits in Sabine Pass DOE Conditional Order No. 2961, supra note 41).

Conditional orders were standard practice until DOE announced in 2014 that it would no longer issue conditional authorizations for terminals located in the lower-48 states. Procedures for Liquefied Natural Gas Export Decisions, 79 Fed. Reg. 48,132, 48,135 (Aug. 15, 2014) [hereinafter Procedural Notice] (“DOE will suspend its practice of issuing conditional decisions on applications to export LNG to non-FTA countries from the lower-48 states.”). In proposing this change, DOE found that the regulatory certainty conditional orders provided was no longer necessary, and that conducting the analysis in one step would facilitate decisionmaking informed by better and more complete information. Proposed Procedures for Liquefied Natural Gas Export Decisions, 79 Fed. Reg. 32,261, 32,263 (proposed June 4, 2014). This notice did leave open the possibility for future conditional orders if circumstances required. Id. at 32,263 (“DOE . . . will retain its discretion to issue conditional decisions in the future should the reasoning set forth in this Notice no longer apply.”). Further, the notice did not apply to projects in Alaska, id. at 32,263 n.5, and in 2015, DOE granted Alaska LNG conditional authorization, pending the environmental review, Alaska LNG Project, LLC, Order No. 3643, Docket No. 14-96-LNG, Order Conditionally Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Proposed Alaska LNG Terminal in Nikiski, Alaska, to Non-Free Trade Agreement Nations, at 2 (May 28, 2015) [hereinafter Alaska DOE Conditional Order No. 3643].

15 U.S.C § 717r(a); 10 C.F.R. § 590.501. The same judicial review provision of the NGA that provides for review of FERC orders applies to DOE orders as well. See supra note 97. Thus, the same stricter exhaustion rule should apply to judicial review of DOE export authorizations. See supra note 98.

15 U.S.C. § 717r(a), (d); 10 C.F.R. § 590.504.
II. Current Agency Review of Climate Impacts

This section explains the extent to which FERC and DOE analyze climate impacts in their authorizations and discusses judicial review of these orders to date. In sum, both agencies have avoided meaningful consideration of climate change impacts under NEPA and the NGA, even as courts have signaled that the failure to do so may render an authorization deficient.

A. FERC Reviews in Practice

1. Consideration of Climate Impacts

The Commission’s analysis of environmental impacts (including climate impacts) is generally limited to direct effects from the LNG terminal itself, and excludes impacts from exportation such as induced production and consumption of natural gas. This means that FERC will consider the greenhouse gas emissions that result from the construction and operation of the terminal and other facilities (like compressor stations), including from transporting and cleaning, processing and liquefaction, and storage of natural gas.115 Recent FERC environmental review documents have conducted the same basic analysis for each application under Section 3.

As a general matter, the environmental review document provides information on direct emissions from project construction and operation.116 FERC quantifies those emissions but, to date, has not assessed their impact in terms of their contribution to climate change.117 In particular, the environmental reviews bemoan the supposed lack of a

---

115 See, e.g., Freeport LNG Liquefaction Project Phase II Modification Project Final Environmental Impact Statement at 4-207 tbl.4.11.1-3, Freeport LNG Devel., L.P., et al., Docket Nos. CP12-509 & CP12-29 (June 2014) (quantifying emissions, including carbon dioxide emissions, from “Facility Construction, Material Deliveries, Worker Commuting, and Construction Equipment”); id. at 4-208 tbl.4.11.1-4 (emissions from “Barge Deliveries”); id. at 4-211 (“operating emissions [from] existing and proposed facilities”); id. at 4-218 tbl.4.11.1-7 (emissions from “LNG Vessels and Support Vessels”); Alaska LNG Project Final Environmental Impact Statement at 4-932 to -934 & tbs.4.15.4-1 to 4.15.4-4, Alaska Gasline Devel. Corp., Docket No. CP17-178 (Mar. 2020) [hereinafter Alaska LNG EIS] (quantifying emissions from construction of gas treatment facilities and mainline facilities); id. at 4-935 tbl.4.15.4-5 (quantifying emissions from construction of liquefaction facilities); id. at 4-936 to -937 & tbl.4.15.5-1 (quantifying operational emissions from gas treatment facility “consisting of three natural gas processing trains that would receive natural gas . . . and clean the natural gas by removing CO2, H2S, and water before shipping”); id. at 4-947 to -950 & tbs.4.15.5-11 to 4.15.5-14 (quantifying operational emissions from compressor stations); id. at 4-959 to -961 & tbl.4.15.5-20 (quantifying operational emission from liquefaction facilities “consist[ing] of three liquefaction trains for processing and liquefaction of natural gas, LNG storage tanks, and a Marine Terminal to load LNG onto LNG carriers”).


117 See, e.g., Alaska LNG EIS, supra note 115, at 4-1222 (“Currently, there is no universally accepted methodology to attribute discrete, quantifiable, physical effects on the environment to the Project’s incremental contribution to GHGs. . . . Absent such a method for related GHG emissions to specific resource impacts, we are not able to assess potential GHG-related impacts attributable to this Project.”); Cameron LNG EIS, supra note 116, at 4-235 (same); Corpus Christi LNG EIS, supra note 116, at 4-232 (same); Jordan Cove LNG FEIS, supra note 116, at 4-850 (same); Magnolia LNG EIS, supra note 116, at 4-278 (same); Environmental Assessment for the Sabine Pass Liquefaction Project at 2-99 to -100, Sabine Pass Liquefaction, LLC & Sabine Pass LNG, L.P., Docket No. CP11-72 (Dec. 2011) [hereinafter Sabine Pass LNG EA] (same).
“universally accepted methodology to attribute discrete, quantifiable, physical effects on the environment to the Project’s incremental contribution to GHGs.” They then conclude that “[a]bsent such a method for relating GHG emissions to specific resource impacts, we are not able to assess potential GHG-related impacts attributable to this Project.”

The environmental review documents also typically explain that there are no federal reduction goals against which to consider the potential emissions of the project. However, where applicable, the analysis will compare the emissions from the project against state targets or emission levels. While recognizing that there will be an incremental contribution to climate change, the reviews then conclude that staff cannot determine whether the project will result in significant climate impacts.

Commission orders approving LNG facilities under Section 3 have concluded that this assessment of climate impacts in the environmental review documents is sufficient. In particular, Commission orders have repeated the claims from its environmental review documents that there is no methodology for assessing the significance of the environmental impacts of the project’s direct greenhouse gas emissions. The Commission has found it satisfactory to compare emissions to national emission totals, explaining that there is no federal benchmark against which to assesses significance.

While environmental reviews frequently compare project emissions to state goals, the Commission has to date concluded that such an assessment cannot measure significance. This question came to a head in the Jordan Cove decision, where

---

118 See, e.g., Alaska LNG EIS, supra note 115, at 4-1222; Cameron LNG EIS, supra note 116, at 4-235; Corpus Christi LNG EIS, supra note 116, at 4-232.

119 See, e.g., Alaska LNG EIS, supra note 115, at 4-1222; Cameron LNG EIS, supra note 116, at 4-235; Corpus Christi LNG EIS, supra note 116, at 4-232; Magnolia LNG EIS, supra note 116, at 4-278.

120 See, e.g., Alaska LNG EIS, supra note 115, at 4-1222 (“[W]e have not been able to find any GHG emission reduction goals established . . . at the federal level.”); Jordan Cove LNG FERC Reh'g Order, supra note 116, at 4-851 (same).

121 See, e.g., Corpus Christi LNG EIS, supra note 116, at 4-230 (explaining that direct emissions would increase emissions in Texas by 0.5% based on 2010 levels); Jordan Cove LNG FERC FIS, supra note 116, at 4-851 (comparing direct emissions to Oregon state reduction targets, and finding that the project’s direct emissions would represent 4.2 to 15.3% of the state’s 2020 and 2050 GHG goals, respectively); Sabine Pass LNG EA, supra note 117, at 2-99 (explaining that the project will contribute approximately 2% of Louisiana’s GHG emissions).

122 See, e.g., Alaska LNG EIS, supra note 116, at 4-1221 (“Project construction and operation would increase the atmospheric concentration of GHGs.”); Sabine Pass LNG EA, supra note 117, at 2-99 to -100 (same); Magnolia LNG EIS, supra note 116, at 4-278 (same).

123 See, e.g., Sabine Pass LNG EA, supra note 117, at 2-100 (“[W]e cannot determine the Project’s incremental physical impacts due to climate change on the environment.”); Magnolia LNG EIS, supra note 116, at 5-26 (same); Cameron LNG EIS, supra note 116, at 4-235 (same).


125 See, e.g., Corpus Christi LNG FERC Order, supra note 124, at P 122; Magnolia LNG FERC Order, supra note 124, at P 90; Jordan Cove LNG FERC Order, supra note 124, at P 262 (“[W]e have neither the tools nor the expertise to determine whether project-related GHG emissions will have a significant impact on climate change and any potential resulting effects, such as global warming or sea rise.”).

126 See, e.g., Jordan Cove LNG FERC Rehearing Order, supra note 124, at P 243 (“[T]he Commission discussed the significance of the projects’ direct GHG emissions by quantifying those emissions, and those emissions were placed in the context of cumulative emissions from other sources.”); see also Jordan Cove LNG FERC Order, supra note 124, at P 259 (explaining that direct and indirect emissions (the latter from vessel traffic) of greenhouse gases from operation of the facility and pipeline “could potentially increase annual CO2e emissions based on the 2017 levels by approximately 0.0374% at the national level”).

127 E.g., Jordan Cove LNG FERC Order, supra note 124, at P 259; Alaska FERC Order, supra note 69, at P 215.
FERC concluded that “although an important consideration as part of our NEPA analysis, Oregon’s emission goals are not the same as an objective determination that the GHG emissions from the projects will have a significant effect on climate change.” FERC concluded that “without industry sector or regional emission targets or budgets with which to compare project emissions, or established GHG offsets to assess the projects’ relationship with emissions targets, [it could not] assess significance based on Oregon’s climate reduction goals alone.” Accordingly, FERC has explained that even the limited information it provides on greenhouse gas emissions does not constitute an evaluation of significance or climate impacts, but rather provides purely contextual information.

FERC has refused to apply the social cost of greenhouse gases to assess the significance of climate impacts. The social cost of greenhouse gases (of which the social cost of carbon is a component) estimates how the emission of an additional unit of greenhouse gas affects atmospheric concentrations, how the change in atmospheric concentrations affects temperature, and how the change in temperature incrementally contributes to health harms and economic damages. However, the Commission has rejected this method for assessing the impacts and significance of greenhouse gas emissions on three grounds, asserting that:

(1) the EPA states that “no consensus exists on the appropriate [discount] rate to use for analyses spanning multiple generations” and consequently, significant variation in output can result; (2) the tool does not measure the actual incremental impacts of a project on the environment; and (3) there are no established criteria identifying the monetized values that are to be considered significant for NEPA purposes.

FERC has also rejected other options for assessing significance, such as applying a project’s emissions “to the remaining global carbon budget as outlined in the IPPC’s Special Report”; and comparing emissions to the nation’s climate-reduction goals under the Paris Agreement.

Some protests of FERC’s orders have also focused on the Commission’s failure to consider induced upstream production and downstream combustion of natural gas and the associated environmental impacts that will result from approval of the LNG terminal. As discussed above, however, both the Commission and the D.C. Circuit have rejected these

128 Jordan Cove LNG FERC Order, supra note 124, at P 262.
129 Jordan Cove LNG FERC Rehearing Order, supra note 124, at P 252.
130 See, e.g., Alaska LNG FERC Order, supra note 69, at P 216.
133 Corpus Christi LNG FERC Rehearing Order, supra note 124, at P 51 (alteration in original); see also Jordan Cove LNG FERC Rehearing Order, supra note 124, at P 247.
134 See Jordan Cove LNG FERC Rehearing Order, supra note 124, at PP 248–52.
135 E.g., Magnolia LNG FERC Order, supra note 124, at P 107 (noting EPA comments asking FERC to consider the potential for increased natural gas production and associated impacts).
2. Consideration of the No Action Alternative

In addition to assessing the climate impacts of the proposed facility, the Commission also briefly looks at the environmental impacts of the “no action alternative”—that is, rejecting the proposal. FERC concludes that the no action alternative would likely not yield better environmental outcomes than development because another project would likely be built were the application under consideration denied.

The Commission’s more recent assessments have been particularly dismissive of the no action alternative. In its 2020 analysis of the Alaska LNG terminal, for instance, the Commission stated that if it were to reject the proposed facility, “exports of LNG from one or more other future LNG facilities designed to export [the region’s] gas would be authorized by the DOE and eventually constructed.” Because “[a]ny expansion of existing systems or construction of new facilities would result in specific environmental impacts that could be less than, similar to, or greater than those associated with the proposed [p]roject,” FERC concluded that the no action alternative was “not likely to provide a significant environmental advantage.” While assessments of LNG facilities in the mid-2010s recognized that the no action alternative could have environmental benefits if it resulted in an increase in renewable energy or reduction in energy demand, the Commission has recently concluded that such considerations were both speculative and outside the agency’s analytical scope.

FERC also occasionally rejects the no action alternative because it does not meet the project applicant’s stated goals. In fact, one of FERC’s three criteria for evaluating whether an alternative would be preferred is whether it can reasonably meet the applicant’s primary objective. The Commission generally explains that “[b]ecause the purpose of the

---

136 See supra notes 28–39 and accompanying text.

137 FERC has applied this same reasoning even in orders evaluating both a Section 3 and Section 7 application together. E.g., Jordan Cove LNG FEIS, supra note 116 (applicant sought both a Section 3 authorization for the LNG facility and Section 7 certificate for a connecting interstate pipeline). Parties have argued that, where a related Section 7 application is involved (i.e., a pipeline being built to serve an LNG terminal for which FERC has deemed the two projects connected actions under NEPA), FERC is required to consider indirect emissions. See, e.g., Jordan Cove LNG FERC Order, supra note 124, at P 172. FERC has rejected this argument, relying on the same reasoning under Section 3 for downstream emissions: namely, because the majority of gas transported in the Section 7 infrastructure is destined for export, it falls within DOE’s purview and FERC need not consider the impacts of combustion. See id. at PP 172–76. FERC has gone further to apply this reasoning even where there is no Section 3 application at issue. See, e.g., ANR Pipeline Co., 179 FERC ¶ 61,040, at P 44 (2022) (Accession No. 20220421-3089) (“Under D.C. Circuit precedent, the Commission need not consider the effects of upstream production or downstream transportation, consumption, or combustion of exported gas because the DOE’s ‘independent decision to allow exports . . . breaks the NEPA causal chain and absolves the Commission of responsibility to include [these considerations] in its NEPA analysis.’ Thus, where, as here, it is known that the natural gas being transported by a proposed project is intended to be delivered to a LNG export terminal for liquefaction and ultimate, [sic] export to other countries, the Commission’s environmental analysis will not consider the upstream or downstream effects of increased natural gas exports.” (alteration in original) (citing Freeport etc.).)

138 See, e.g., Sabine Pass LNG FERC Order, supra note 71, at PP 96–99; Jordan Cove LNG FERC Order, supra note 124, at PP 174–76; Corpus Christi LNG FERC Order, supra note 124, at P 120; Corpus Christi LNG FERC Rehearing Order, supra note 124, at PP 10–23; Magnolia LNG FERC Order, supra note 124, at PP 114–17 (explaining that “the environmental effects resulting from natural gas production are generally neither caused by a natural gas infrastructure project nor are they reasonably foreseeable consequences of our approval of an infrastructure project, as contemplated by the CEQ regulations”).

139 E.g., Alaska LNG EIS, supra note 115, at 3–2 to -3; Corpus Christi LNG EIS, supra note 116, at 3–2; Jordan Cove LNG FEIS, supra note 116, at 3–4 to -5.

140 Id.; see also Corpus Christi LNG EIS, supra note 116, at 3–2; Jordan Cove LNG FEIS, supra note 116, at 3–4 to 5.

141 Cameron LNG EIS, supra note 116, at 3–1 to -4; Magnolia LNG EIS, supra note 116, at 3–2 to -4.

142 See, e.g., Tex. LNG Project Final Environmental Impact Statement at 3-1 to -2, Tex. LNG Brownsville LLC, Docket No. CP16-116 (Mar. 2019) (hereinafter Texas LNG EIS) (“An alternative that cannot achieve the purpose for the project cannot be considered as an acceptable replacement for the project.”).
projects is to construct and operate a terminal to serve the domestic and export markets for LNG," selecting the no
action alternative and facilitating the “development or use of renewable energy technology would not be a reasonable
alternative to the proposed action.”

3. Judicial Review of FERC’s Orders

Only a handful of cases have challenged FERC’s analysis of climate impacts from LNG export terminals. Those cases
indicated that analysis of upstream and downstream impacts was beyond the Commission’s purview under Section 3,
and that these challenges were more appropriately directed toward DOE. Just a few cases analyze whether FERC’s
assessment of direct greenhouse gas emissions is sufficient.

In *EarthReports*, the D.C. Circuit deferred to the Commission’s decision not to apply the social cost of greenhouse gases
to assess the severity and significance of the LNG terminal’s direct climate impacts. Over the next three years, the D.C.
Circuit relied on the reasoning in *EarthReports* in two unpublished (i.e., non-precedential) opinions deferring to FERC’s
judgment not to apply the metric in approving interstate pipeline infrastructure under Section 7.

Last year, however, the D.C. Circuit declined to rely on its previous holdings and rejected FERC’s approval of an LNG
terminal because the agency insufficiently considered the application of the social cost of greenhouse gases. As the
court explained, when FERC cannot obtain the information relevant to reasonably foreseeable significant adverse
impacts because the means to obtain it are unknown, 40 C.F.R. § 1502.21(c) requires FERC to apply “theoretical
approaches or research methods generally accepted in the scientific community” to assess those impacts. The court
found that regulation to be “applicable on its face” with respect to the social cost of greenhouse gases methodology, given
FERC’s acknowledgement that it could not obtain information relevant to the extent of future climate impacts. The
court further stated this regulation may “oblig[e]” FERC “to use the social cost of carbon protocol” in its environmental
analyses, notwithstanding the Commission’s various concerns about the methodology. Challengers in previous cases
had not raised arguments under this regulation. Finding that FERC had not adequately responded to arguments based
on this provision, the court remanded the case to the Commission to explain whether this regulation requires application
of the social cost of greenhouse gases or another method, and if not, why.

---

143 Magnolia LNG EIS, supra note 116, at 3–4; see also Jordan Cove LNG FEIS, supra note 116, at 3–5 (“[T]he No Action Alternative would not
meet the Project’s purpose and need.”).
144 See supra notes 28–39 and accompanying text.
considering climate damages is discussed in more detail infra Section III.A.2.
curiam).
148 Id. (quoting 40 C.F.R. § 1502.21(c)).
149 Id. at 1329.
150 Id.
151 Id.
152 Id. at 1329–30.
4. FERC’s 2022 Draft Policy Statements

The Commission recently issued a draft “Updated Policy Statement on Certification of New Interstate Natural Gas Facilities” (Draft Updated Certificate Policy Statement)\(^{153}\) and a draft policy statement on “Consideration of Greenhouse Gas Emissions in Natural Gas Infrastructure Project Reviews” (Draft GHG Policy Statement).\(^{154}\) At the time of writing, both Policy Statements are still in draft form and subject to change when finalized.\(^{155}\) But both offer a window into how the Commission may update its approval process in the future.

While the Draft Updated Certificate Policy Statement is not directly applicable because it explicitly pertains only to Section 7 (interstate natural gas infrastructure), it can provide insight into how DOE might integrate climate considerations into its NGA assessment.\(^{156}\) The Draft GHG Policy Statement, on the other hand, lays out how the Commission might account for climate change in its Section 3 proceedings, making it directly relevant to this report.\(^{157}\) Furthermore, while some portions of the Draft GHG Policy Statement are directed exclusively at Section 7 authorizations—laying out how FERC will approach quantifying and considering indirect GHG emissions associated with a Section 7 project\(^{158}\)—those sections can provide useful guidance to DOE in its own assessment of upstream and downstream emissions from LNG export under Section 3, which is required under NEPA and the NGA.

The Draft Updated Certificate Policy Statement is intended to provide a more comprehensive analytical framework for how the Commission will conduct its public interest review for Section 7 applications.\(^{159}\) It seeks to provide greater clarity on how FERC will evaluate all factors bearing on the public interest, including environmental interests such as climate change.\(^{160}\) Environmental interests are elevated to be included in the list of key factors that may be adversely affected by project approvals and will be considered in the NGA evaluation.\(^{161}\) The Draft Updated Certificate Policy Statement also eliminates the sequential review of economic and environmental interests that previously guided Section 7 approvals, finding that this created unnecessary confusion about how FERC would consider environmental impacts.\(^{162}\) Instead, the draft proposes that all impacts be balanced together in the public interest determination under the NGA.\(^{163}\)

The Draft GHG Policy Statement sets out how the Commission will quantify and consider the climate impacts of applications under both Section 3 and Section 7. It explains that FERC will evaluate climate impacts under NEPA and integrate climate considerations into its public interest determinations under the NGA.\(^{164}\) The Draft GHG Policy Statement proposes a threshold for determining the “appropriate level of NEPA review”; in other words, whether the agency should conduct a detailed EIS rather than a more streamlined EA.\(^{165}\) Using a full-burn assumption (i.e., a 100%
utilization rate), if a project would result in at least 100,000 metric tons per year (mtpy) of carbon dioxide equivalent on a gross basis, then FERC will complete an EIS.

The Draft GHG Policy Statement also provides guidance on how the Commission will quantify direct, upstream, and downstream emissions, and what information project applicants should provide. The Commission explains that it will quantify and consider only direct emissions for Section 3 projects, relying on the D.C. Circuit case law discussed above. For Section 7 applications, FERC will also consider upstream and downstream emissions on a case-by-case basis. The treatment of these two categories differs somewhat, though. The Commission will presume that downstream emissions are reasonably foreseeable, finding that there is a “substantial likelihood” of GHG emissions from end-use combustion. For upstream emissions, the Commission does not reach the same conclusion, instead reiterating concerns about the feasibility of estimating these emissions.

For quantifying reasonably foreseeable emissions, the Commission will not use a full-burn assumption, but rather a proposal’s “projected utilization rate.” The utilization rate is “a projection of what amount of project capacity will actually be used” and will be relevant to calculating upstream and downstream emissions (for Section 7 applications), as well as the direct operational emissions (for both Section 3 and Section 7 applications). FERC concludes that using a projected utilization rate is justified because most projects are planned to address peak demand, and therefore do not operate at 100% utilization on most days. As such, a full-burn assumption “does not accurately capture the project’s climate impacts.” Applicants are asked to submit information on this rate, which may be calculated using, for example, the expected utilization data from project shippers; historical usage data; demand projections; and estimates of capacity to be used on an interruptible basis.

In calculating the upstream and downstream emissions associated with a Section 7 project, the Commission will also consider other relevant evidence submitted by the applicant or other stakeholders. In the Draft GHG Policy Statement, the Commission explains that FERC will consider:

- Evidence of a net-reduction in GHG emissions where the use of transported gas displaces the use of a higher emitting alternative fuel; evidence of anticipated changes in downstream usage rates over time; evidence of any real, verifiable, and measurable reduction efforts taken by the pipeline or downstream users to reduce their GHG emissions or offset their impacts; and evidence that a project would displace zero-emissions electric generation.

---

166 The full-burn assumption assumes that the pipeline will continuously transport its full capacity, that all transported gas will be combusted and that all combusted gas is additional and displaces no other fuels. See Florida Southeast Connection, LLC, 162 FERC ¶ 61,233, at P 24 (2018) (Accession No. 20180314-4005).
168 Id. at P 41.
169 Id. at P 31.
169 Id. at P 31.
170 Id. at P 38.
171 Compare id. at PP 38–41 (discussing downstream emissions), with id. at PP 31, 42–43 (stating that FERC will consider upstream emissions on a case-by-case basis, but providing significantly less discussion compared to downstream emissions).
172 Id. at PP 44–45.
173 Id. at P 29.
174 Id. at PP 49–51.
175 Id. at P 50.
176 Id. The Draft Updated Certificate Policy Statement likewise encourages applicants to provide information relevant to assessing climate impacts, including (1) how the gas “will ultimately be used”; (2) “why the project is needed to serve that use”; and (3) the “expected utilization rate.” Draft Updated Certificate Policy Statement, supra note 68, at P 55.
177 Draft GHG Policy Statement, supra note 154, at P 52.
In the Updated Certificate Policy Statement, FERC similarly explains that the Commission will weigh potential climate benefits of proposed projects, including “evidence that the project will displace more pollution-heavy generation sources, [and/or] facilitate the integration of renewable energy sources.”

In the Draft GHG Policy Statement, FERC also encourages applicants to propose mitigation activities to minimize climate impacts, which will be considered “on a case-by-case basis when balancing the need for a project against its adverse environmental impacts.” Emissions offsets, for example, may be used to reduce the emissions associated with the project. The Commission will only encourage mitigation of downstream emissions, but may require additional mitigation of direct emissions as a condition of authorization. The Commission will not mandate a certain level of mitigation for all projects, but will instead consider mitigation plans in comparison to the project’s benefits. The burden will be on the applicant to demonstrate that mitigation measures are verifiable and propose a means for monitoring and tracking measures throughout the life of the project.

The 100,000 mt/py threshold for determining whether to prepare an EIS or an EA will also be used for assessing the significance of climate impacts, although using an estimate of emissions based on a projected utilization rate (not full-burn). The Commission will also consider any offsets and mitigation in calculating whether the threshold is met. The draft GHG Policy Statement does not direct the use of the social cost of greenhouse gases, but instead explains that “to the extent permitted by law, the Commission could consider the SC-GHG in the future,” citing the ongoing cases challenging the use of the Interagency Working Group’s interim values.

B. DOE Reviews in Practice

1. Consideration of Climate Impacts

The Department’s assessment of climate impacts has been essentially the same since 2012, using boilerplate language to dismiss concerns about induced upstream natural gas production and downstream combustion. Discussed in more detail below, DOE relies heavily on two environmental documents, and the supposedly speculative nature of indirect greenhouse gas impacts from production and combustion, to avoid any substantive consideration of climate impacts.

---

178 Draft Updated Certificate Policy Statement, supra note 68, at P 97 (declaring that the Commission intends to consider “all benefits” of a project).
179 Draft GHG Policy Statement, supra note 154, at P 98.
180 Id. at PP 113–124.
181 Id. at P 105 (“[T]he Commission’s priority is for project sponsors to mitigate, to the greatest extent possible, a project’s direct GHG emissions. The Commission also encourages project sponsors to propose mitigation of reasonably foreseeable indirect emissions, and will take such proposals into account in assessing the extent of a project’s adverse impacts.”).
182 Id. at P 111.
183 Id. at P 112.
184 Id. at P 81.
185 Id.
186 Id. at P 96.
Procedurally, DOE adopts FERC’s environmental review documents, regardless of whether the Commission produces an EIS or an EA. The Department does so as a matter of course, and explains that “[b]ecause DOE was a cooperating agency, [DOE] is permitted to adopt FERC’s final EIS, provided that [DOE] has conducted an independent review of the EIS and determines that its comments and suggestions have been satisfied. DOE adopts FERC’s analysis regardless of whether FERC has quantified and considered indirect greenhouse gas emissions resulting from the export itself (which, as noted, courts have indicated fall under DOE’s purview). DOE has rejected arguments that “the nature of DOE’s authority over the export of natural gas requires a broader or different environmental analysis than the one performed by the FERC.”

In instances where FERC does not consider indirect greenhouse gas emissions in its review, DOE also does not complete the analysis by quantifying such impacts, instead finding that they are not reasonably foreseeable. The Department has rejected comments requesting that it assess the impacts of induced upstream natural gas production resulting from LNG exports, stating that “[f]undamental uncertainties constrain our ability to foresee and analyze with any particularity the incremental natural gas production that may be induced by permitting exports of LNG to non-FTA countries.” DOE concludes that “without knowing where, in what quantity, and under what circumstances additional gas production will arise, the environmental impacts resulting from production activity induced by LNG exports to non-FTA countries are not ‘reasonably foreseeable’ within the meaning of the CEQ’s NEPA regulations.”

In incorporating FERC’s environmental review, DOE also frequently adopts FERC’s explanation of why indirect greenhouse gas emissions from induced production and combustion would be too remote and indeterminate to consider, even if they fell within FERC’s purview. In particular, FERC has alleged that “the location and subsequent production activity [from any induced production] is unknown, and too speculative to assume based on the interconnected interstate natural gas pipeline system.” FERC has therefore concluded—and DOE has adopted—that it would be “virtually impossible” to estimate how much if any of the export volumes come from either new or existing production, and thus the extent of greenhouse gas emissions resulting from the export is not reasonably foreseeable.

Even after rejecting the need to consider indirect greenhouse gas impacts, however, DOE nonetheless cites two reports to claim that those impacts are negligible and should not affect the agency’s decisionmaking. First, DOE relies on its 2014 Addendum to Environmental Review Documents Concerning Exports of Natural Gas from the United States

---

188 Where FERC issues an EA, DOE will incorporate that reasoning into and issue its own Finding of No Significant Impact. See, e.g., Corpus Christi Stage III DOE Order No. 4490, supra note 62, at 5.
189 See, e.g., Corpus Christi DOE Order No. 3638, supra note 63, at 192; see also Venture Global Plaquemines LNG, LLC, Order No. 4446, Docket No. 16-28-LNG, Opinion and Order Granting Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Nations, at 37 (Oct. 16, 2019) [hereinafter Venture Global Plaquemines DOE Order No. 4446]; Jordan Cove DOE Final Order No. 3413-A, supra note 187, at 106–07.
190 For example, in a 2015 Order, DOE adopted FERC’s EIS, in which FERC explicitly stated that it “did not attempt to assess climate change impacts of upstream production and downstream use because (among other reasons) it is ‘unable to predict the nature and extent of any such impacts and thus such impacts are not reasonably foreseeable for purposes of [FERC’s] analysis under NEPA.” Corpus Christi DOE Order No. 3638, supra note 63, at 10 (quoting Corpus Christi Liquefaction, LLC, 151 FERC ¶ 61,098 (2015) (Accession No. 20150506-3042)).
191 See, e.g., Sabine Pass DOE Order No. 2961-A, supra note 106, at 27.
192 See, e.g., Corpus Christi DOE Order No. 3638, supra note 63, at 193.
193 E.g., id. Specifically, DOE contends “there is uncertainty as to the aggregate quantity of natural gas that ultimately may be exported;” that authorization “does not guarantee that a particular facility would be financed and built” or that “if built, market conditions would continue to favor export once the facility is operational.” Id. at 194. And, DOE argues there is “fundamental uncertainty as to where any additional production would occur and in what quantity.” Id.
194 Id. at 194.
196 See, e.g., Sabine Pass LNG FERC Rehearing Order, supra note 124, at P 9.
(Addendum), to review existing literature on the potential impacts of unconventional gas production. 197 While the Addendum primarily provides a broad discussion of environmental impacts from natural gas production such as impacts on climate, air quality, and water resources, 198 DOE has since concluded, based on little analysis, that the environmental impacts discussed therein do not lead us to conclude, however, that exports of natural gas to non-FTA nations should be prohibited. Rather, we believe the public interest is better served by addressing these environmental concerns directly—through federal, state, or local regulation, or through self-imposed industry guidelines where appropriate—rather than by prohibiting exports of natural gas. Unlike DOE, environmental regulators have the legal authority to impose requirements on natural gas production that appropriately balance benefits and burdens, and to update these regulations from time to time as technological practices and scientific understanding evolve. 199

That is, DOE conducted a generic review of environmental impacts from natural gas production in the Addendum and concluded that rejecting applications for export due to environmental impacts is:

too blunt an instrument to address these environmental concerns efficiently. A decision to prohibit exports of natural gas would cause the United States to forego entirely the economic and international [benefits] discussed herein, but would have little more than a modest, incremental impact on the environmental issues. 200

On this basis, DOE has rejected concerns about upstream greenhouse gas impacts resulting from exporting natural gas.

DOE has pointed to the Life Cycle Greenhouse Gas Report produced by DOE’s National Energy Technology Laboratory (NETL) to argue that induced emissions from extraction and combustion of exported gas are negligible or nonexistent. 201 This report was first published in 2014 and updated in 2019, with the goal of determining “how domestically-produced LNG exported from the United States compares with regional coal (or other LNG sources) for electric power generation in Europe and Asia from a life cycle GHG perspective,” and “how those results compare with natural gas sourced from Russia and delivered to the same markets via pipeline.” 202 It concluded that “to the extent U.S. LNG exports are preferred over coal in LNG-importing nations, U.S. LNG exports are likely to reduce global GHG emissions on per unit of energy consumed basis for power production” and “to the extent U.S. LNG exports are preferred over other forms of imported natural gas, they are likely to have only a small impact on global GHG emissions.” 203 Owing to the fact that LNG exports have lower life cycle emissions in many cases than other sources of fossil-fuel energy abroad, DOE has claimed that U.S. exports “may reduce [greenhouse gas] emissions.” 204

198 See id.
199 Corpus Christi DOE Order No. 3638, supra note 63, at 196; Venture Global Plaquemines DOE Order No. 4446, supra note 189, at 37–38 (using identical language).
200 Corpus Christi DOE Order No. 3638, supra note 63, at 197; Venture Global Plaquemines DOE Order No. 4446, supra note 189, at 38 (using identical language).
203 Id. at 109.
204 Alaska DOE Final Order No. 3643-A, supra note 187, at 34; accord DOE Addendum, supra note 197, at 44 (“To the extent that unconventional natural gas production replaces the use of other carbon-based energy sources, there may be a net positive impact in terms of climate change.”).
2. Judicial Review of DOE’s Orders

There are only two federal cases discussing the Department’s obligations under NEPA and the NGA to assess indirect greenhouse gas emissions under Section 3. In 2017, the D.C. Circuit rendered its first opinion regarding the export authorization for the Freeport facility (Sierra Club I).\(^\text{205}\) and then a second in a consolidated opinion regarding export authorizations for three facilities: Sabine Pass, Corpus Christi, and Cove Point (Sierra Club II).\(^\text{206}\) The court affirmed the Department’s public interest determination in both instances.

In Sierra Club I, the court recognized that FERC’s EIS had not analyzed indirect effects of authorizing the export, but that DOE had supplemented that review with two environmental reports: the Addendum and the Life Cycle Greenhouse Gas Report.\(^\text{207}\) The court upheld DOE’s examination of potential greenhouse gas emissions resulting from the exports—both those emitted by export-induced gas production and downstream use.\(^\text{208}\) It found that the Life Cycle Greenhouse Gas Report had provided sufficient information on upstream emissions even if these emissions were not included in the EIS itself.\(^\text{209}\) The court further rejected the challenger’s opposition to the Life Cycle Greenhouse Gas Report’s assessment of downstream emissions as “flyspecking.”\(^\text{210}\) Sierra Club argued that DOE should have provided an analysis not only comparing emissions from U.S. LNG exports to coal and other potential sources of natural gas, but also to renewables.\(^\text{211}\) In rejecting that claim, the court credited DOE’s explanation that there were multiple other fuels sources that U.S. exports might compete with and that it would be extremely complicated to model the effect that exports would have on net global emissions using projections from all those fuels.\(^\text{212}\) DOE explained that this analysis “would require consideration of the dynamics of all energy markets in LNG-importing nations, and given the many uncertainties in modeling such market dynamics, the analysis would be ‘too speculative to inform the public interest determination.’”\(^\text{213}\) The court found there was nothing arbitrary with DOE’s decision given these foreseeability limitations and feasibility considerations.\(^\text{214}\)

The court also rejected Sierra Club’s arguments that exports would lead to increased emissions by causing an increase in domestic coal consumption. It affirmed DOE’s conclusion that the causal chain proffered—that exports lead to increased domestic natural gas prices, which would cause domestic power use to switch from gas to coal—was too attenuated.\(^\text{215}\) It also dismissed claims regarding the effects of induced upstream production more generally, finding DOE had “offered a reasoned explanation as to why it believed the indirect effects pertaining to increased gas production were not reasonably foreseeable”: the difficulty in predicting the incremental quantity that might be produced in response to incremental increase in exports at the terminal, given links to a variety of uncertain factors.\(^\text{216}\)

\(^{205}\) Sierra Club v. Dep’t of Energy (Sierra Club I), 867 F.3d 189 (D.C. Cir. 2017).


\(^{207}\) Sierra Club I, 867 F.3d at 195. Notably, the Court rejected DOE’s position that these reports were part of DOE’s effort to go “above and beyond what NEPA requires,” finding “DOE plainly relies on these supplemental records to justify its hard look.” Id. at 197.

\(^{208}\) Id. at 202.

\(^{209}\) Id.

\(^{210}\) Id. Flyspecks are minor deficiencies, which are not sufficient to defeat the goals of informed decisioning and informed comment. See, e.g., Sierra Club v. Fed. Energy Regul. Comm’n (Freeport), 867 F.3d 36, 46 (D.C. Cir. 2016); Nevada v. Dept. of Energy, 457 F.3d 78, 93 (D.C. Cir. 2006).

\(^{211}\) Sierra Club I, 867 F.3d at 202.

\(^{212}\) Id.

\(^{213}\) Id. (quoting Freeport LNG Expansion, L.P., Order No. 3357-B, Docket No. 11-161-LNG, Final Opinion and Order Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Freeport LNG Terminal on Quintana Island, Texas, to Non-Free Trade Agreement Nations, at 93 (Nov. 14, 2014)).

\(^{214}\) Id.

\(^{215}\) Id. at 201.

\(^{216}\) Id. at 198–99.
In *Sierra Club II*, the court relied on *Sierra Club I* to reject challenges to DOE’s review, and addressed only three narrow remaining issues, unrelated to DOE’s climate assessment: (1) its choice to rely on an EA rather than an EIS; (2) its refusal to use more specific information about where incremental production would occur to assess localized impacts; and (3) its consideration of distributional economic impacts when evaluating the public interest.\(^217\)

**Although these two decisions reject challenges to DOE’s consideration of climate impacts, they—together with the trio of FERC cases discussed above—recognize that (1) DOE has authority to consider and reject an application for LNG exports on the basis of adverse environmental impacts; and (2) DOE has an independent duty to ensure it reviews all reasonably foreseeable environmental impacts of its authorizations.** While the court rejected challenges to the Department’s current approach, some potential arguments regarding DOE’s authority were not raised in these cases, and new information and modeling approaches have become available in recent years.

### 3. 2020 Categorical Exclusion Rule

While past DOE assessments have dismissed the environmental impacts of Section 3 determinations on a case-by-case basis, in 2020 the Department promulgated a regulation to simplify dismissal and further reject the need for careful environmental analysis.\(^218\) NEPA regulations provide a streamlined process—known as “categorical exclusions”—through which agencies may define “categories of actions that normally do not have a significant effect on the human environment, and therefore do not require preparation of an environmental assessment or environmental impact statement.”\(^219\) Once DOE defines a categorical exclusion for a particular class of actions, future actions within that class do not require environmental analysis so long as there are no “extraordinary circumstances related to the proposal” and the proposal has not been improperly segmented to meet the definition of the categorical exclusion.\(^220\)

Until recently, DOE’s application of categorical exclusions under Section 3 was limited to applications for export authorizations that involved minor operational changes and no new construction.\(^221\) In 2020, however, the Trump administration finalized a rule purporting to enable it to apply a categorical exclusion to all authorizations to export

---


\(^218\) This rule is just one of several rules and policy statements issued under the Trump Administration seeking to fast-track DOE’s public interest review of export authorization applications. Others include DOE’s policy statement, “Extending Natural Gas Export Authorizations to Non-Free Trade Agreement Countries Through the Year 2050,” 85 Fed. Reg. 52,237 (Aug. 25, 2020), which changed standard practice from granting long-term authorizations for 20-year periods to granting authorizations through the end of 2050. This has been used as a basis to extend existing authorizations through 2050, while applying a categorical exclusion to avoid further environmental review. See, e.g., *Freeport LNG Expansion, L.P. et al.*, Order No. 2913-C et al., Docket No. 10-140-LNG et al., Order Extending Export Term for Authorizations to Free Trade and Non-Free Trade Agreement Nations Through December 31, 2050 (Oct. 21, 2020) (applying pre-2021 categorical exemption because the application will not require any new construction or modifications to facilities, and extending previously granted authorizations by approximately 10 years). Additionally, DOE promulgated a Small-Scale Natural Gas Exports Rule, 83 Fed. Reg. 35,106 (July 25, 2018), which deems small-scale natural gas exports to non-FTA countries (less than 0.14 Bcf/d) as in the public interest, so long as an EA or EIS is not required.

\(^219\) 40 C.F.R. § 1500.4(a).

\(^220\) 10 C.F.R. § 1021.410(b)(2)–(3); see also 40 C.F.R. § 1501.4 (outlining process for applying categorical exclusions).

\(^221\) 10 C.F.R. Subpart D Appendix B (2011). For example, the exclusion could apply where the applicant sought to increase the capacity exported, but the total capacity with the increase would be equal to the production capacity already approved for the facility. See *Cameron LNG, LLC*, Order No. 3797, Docket No. 15-67-LNG, Final Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from Cameron Terminal Located in Cameron and Calcasieu Parishes, Louisiana to Non-Free Trade Agreement Nations (Mar. 18, 2016) (explaining that the applicant’s facility had already been approved by FERC and that the additional export capacity sought in the application at hand would cause the total approved capacity to equal the production capacity of the already approved facility, thus requiring no new construction).
natural gas to non-FTA countries.\textsuperscript{222} Consistent with its prior analyses for export authorizations, DOE claimed in the rule that induced upstream and downstream emissions were not reasonably foreseeable and would not increase global emissions.\textsuperscript{223} The rule also cites the Life Cycle Greenhouse Gas Report for the Department’s conclusion that “the use of U.S. LNG exports for power production in European and Asian markets will not increase global GHG emissions from a life cycle perspective.”\textsuperscript{224}

The Department also claimed that the proper scope of DOE’s environmental review of exports applications is limited to “marine transport effects,”\textsuperscript{225} and stated that any impacts aside from those “starting at the point of delivery to the export vessel, and extending to the territorial waters of the receiving country” are beyond the scope of its consideration.\textsuperscript{226} DOE claimed that impacts occurring both before and after the export itself—including the production and combustion of fossil fuels—lack a “sufficiently close causal connection to the granting of the export authorization” and thus do not merit consideration.\textsuperscript{227} Given this narrow scope, the Department concluded there would be no significant environmental impacts from approval of export applications,\textsuperscript{228} warranting a categorical exclusion. However, DOE did confirm that, as required by the regulations, it would consider whether extraordinary circumstances are present on a case-by-case basis such that an environmental analysis should be conducted.\textsuperscript{229}

The categorical exclusion rule has been in effect for over a year, and has been applied only on a handful of occasions, in relatively narrow proceedings.\textsuperscript{230} Accordingly, it is not clear whether and to what extent DOE will rely on the rule in future analyses, as it only presumes an exclusion can apply and does not prevent the Department from preparing further analysis in individual cases. To date, this rule has not yet been challenged in court or rescinded by the Department, but both options remain a possibility. In fact, the Department recently indicated that it intends to revise the rule.\textsuperscript{231}

\begin{itemize}
\item \textsuperscript{222} National Environmental Policy Act Implementing Procedures, 85 Fed. Reg. 78,197 (Dec. 4, 2020) [hereinafter DOE Categorical Exclusion Rule] (“[I]nduced upstream production impacts are not reasonably foreseeable for NEPA purposes . . . [and] downstream emissions at the point of consumption are too attenuated to be reasonably foreseeable and do not have a reasonably close causal relationship to the granting of an export authorization.”).
\item \textsuperscript{223} Id. at 78,200.
\item \textsuperscript{224} Id. at 78,201.
\item \textsuperscript{225} Id. at 78,197.
\item \textsuperscript{226} Id. at 78,197 n.9.
\item \textsuperscript{227} Id. at 78,197.
\item \textsuperscript{228} Id. at 78,198.
\item \textsuperscript{229} Id. at 78,199.
\item \textsuperscript{230} Categorical Exclusion Determinations: B5.7, DEP’T OF ENERGY, https://www.energy.gov/nepa/listings/categorical-exclusion-determinations-b57 (Mar. 30, 2021). The listed applications of the categorical exclusion rule involve either small-scale exports, short-term exports, or extensions of 20-year export authorizations to 2050 (consistent with DOE’s Order Extending Export Term for Authorizations to Free Trade and Non-Free Trade Agreement Nations Through December 31, 2050, discussed in supra note 218). They are all narrower in scope than the proceedings primarily discussed throughout this report authorizing large quantities for long-term export.
\item \textsuperscript{231} See Categorical Exclusion B5.7: Export of Natural Gas, OFF. OF INFO. & REG. AFFAIRS, https://perma.cc/N9TQ-9RFJ (Fall 2021) [hereinafter OIRA Notice for DOE Categorical Exclusion] (stating that the Department plans to “review DOE Categorical Exclusion B5.7, consistent with updates to DOE’s environmental review of natural gas export decisions”).
\end{itemize}
III. Improving Consideration of Climate Impacts for Section 3 Authorizations

Because FERC and DOE analyses of climate impacts under Section 3 have been very limited, there are many avenues for improvement. This section outlines those avenues and then argues that FERC and DOE should perform a joint rather than bifurcated review under Section 3.

A. Avenues to Improve FERC’s Assessment

FERC’s approach to estimating the direct greenhouse gas emissions from LNG facilities without assessing their significance or meaningfully weighing them in its public interest analysis is deficient in several broad respects. This section provides three key recommendations to properly consider climate impacts, thereby improving decisionmaking.

1. FERC Must Properly Consider Direct Emissions by Assessing their Significance

FERC should give the requisite consideration to direct greenhouse gas emissions from terminal construction and operation. In many instances, the impacts of these direct emissions alone may be significant. Yet, the Commission consistently finds that the environmental impacts are acceptable. FERC should actually assess the significance of direct emissions, not merely quantify them.

There is a fundamental inconsistency between concluding that climate impacts are unmeasurable yet acceptable, without further analysis. As now-Chairman Glick has explained in a dissent:

[T]he Commission will always conclude that a project will not have a significant environmental impact irrespective of that project’s actual GHG emissions or those emissions’ impact on climate change. If the Commission’s conclusion will not change no matter how many GHG emissions a project causes, those emissions cannot, as a logical matter, play a meaningful role in the Commission’s public interest determination. 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.

Chairman Glick’s rationale compels FERC to improve its consideration of greenhouse gas emissions under Section 3. As the Supreme Court has explained, agency actions are arbitrary and capricious if they are not “based on consideration of the relevant factors,” including if the agency “entirely failed to consider an important aspect of the problem.” By approving the terminal without any meaningful consideration of its climate impacts—the Commission is “fail[ing] to consider an important aspect of the problem.” Until it assesses significance, greenhouse gas emissions cannot be a meaningful factor in the agency’s decisionmaking.

232 See, e.g., Rio Grande LNG FERC Order, supra note 72, at P 108 (explaining that operation of the facility may result in over 9 million metric tons of greenhouse emissions per year).
233 Id. at P 7 (Glick, Comm’r, dissenting); id. at P 294 (majority opinion).
234 Id. at P 7 (Glick, Comm’r, dissenting).
236 Id. at 42.
It is clear that, under *Freeport* and its progeny, this is the Commission’s responsibility and not one that it can pass on to the Department. Those cases have established that the environmental impacts from construction and operation of the facility are causally related to FERC’s decision to approve the facility under Section 3. And as detailed further below, the limited assessment of climate impacts which the Commission does perform—which, it acknowledges, is unable to inform a significance assessment—is lacking.

2. *FERC’s Practice of Quantifying Emissions and Comparing Them to Larger Totals Is Inadequate*

In place of assessing the significance of direct greenhouse gas emissions, the Commission normally quantifies direct emissions from the LNG terminal and compares those emissions to larger baselines such as total statewide emissions. But that practice improperly minimizes the climate impacts of the terminal, and courts have rejected similar analyses from other agencies.

Comparing a project’s greenhouse gas emissions to geographic climate targets or inventories frequently makes large quantities of emissions from an individual project seem relatively small. As one federal court recently recognized, “[t]he global nature of climate change and greenhouse-gas emissions means that any single . . . project likely will make up a negligible percent of state and nation-wide greenhouse gas emissions.” Yet while agencies assessing percentage comparisons of greenhouse gas emissions should recognize this phenomenon and adjust their standards accordingly, agencies including the Commission have normally trivialized small probabilities. In other words, agencies all too often fail to recognize, as one federal court explained, that even a seemingly “very small portion of a gargantuan source of . . . pollution” may “constitute[] a gargantuan source of . . . pollution on its own terms.”

The Commission’s analysis also suffers from a distinct but related problem—that merely quantifying emissions (and comparing them to larger totals) does not “disclose the actual environmental effects of the proposed project in a way that “brings those effects to bear on [the agency’s] decisions,” as NEPA requires. Merely quantifying emissions is insufficient if the agency “does not reveal the meaning of those impacts in terms of human health or other environmental values,” since “it is not releases of [pollution] that Congress wanted disclosed” but rather “the effects, or environmental significance, of those releases.” More recent court decisions have applied this doctrine in the climate change context, holding that an agency’s analysis of the climate impacts of a project was deficient due to its failure to capture the real-world impact on environmental and health factors.

---

237 See supra Section I.A.2.
239 See, e.g., *Northern Natural Gas Co.*, 175 FERC ¶ 61,146, at PP 33–34 (2021) (Accession No. 20210520-3089) (dismissing without explanation significance of project’s climate impacts that would contribute up to 4.5% of Minnesota’s greenhouse gas emission goals by 2050).
240 Sw. Elec. Power Co. v. EPA, 920 F.3d 999, 1032 (5th Cir. 2019) (internal quotation marks omitted).
243 E.g., Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin., 538 F.3d 1172, 1215–16 (9th Cir. 2008); High Country Conservation Advocs. v. U.S. Forest Serv., 52 F. Supp. 3d 1174, 1190 (D. Colo. 2014) (“Beyond quantifying the amount of emissions relative to state and national emissions and giving general discussion to the impacts of global climate change, [the agencies] did not discuss the impacts caused by these emissions.”); Mont. Env’t Info. Ctr. v. U.S. Off. of Surface Mining, 274 F. Supp. 3d 1074, 1095–99 (D. Mont. 2017) (rejecting the argument that the agency “reasonably considered the impact of greenhouse gas emissions by quantifying the emissions which would be released if the [coal] mine expansion is approved, and comparing that amount to the net emissions of the United States”); California v. Bernhardt, 472 F. Supp. 3d 573, 623 (N.D. Cal. 2020) (rejecting NEPA assessment of greenhouse gas emissions because the agency’s approach of quantifying emissions and comparing them to nationwide totals failed to “communicate the actual environmental effects resulting from emissions of greenhouse gas” rather than “just quantify them”) (internal quotation marks omitted).
 Whereas the Commission’s current assessment falls short, an available and widely-used tool—the social cost of greenhouse gases—allows for the assessment of climate impacts that NEPA requires. The tool captures the factors that actually affect public welfare and assesses the degree of impact to each factor in ways that simply estimating the volume of emissions cannot. In fact, various agencies have used the social cost of greenhouse gases to assess a project’s climate impacts under NEPA.244 The U.S. Court of Appeals for the Seventh Circuit has upheld agency reliance on these estimates,245 and although ongoing litigation has cast some doubt on the legal status of these estimates, agencies remain free to apply the social cost of greenhouse gases in all regulatory processes.246 And, although the Commission has long rejected the use of the social cost of greenhouse gases for assessing climate impacts,247 in 2021 the D.C. Circuit rejected FERC’s approval of an LNG terminal because the agency insufficiently considered (and thus improperly rejected) the social cost values.248

Just as the Commission monetizes other socioeconomic impacts such as rates, payroll, and tax revenues, FERC could present monetized estimates of climate harms. Several federal courts have held that it is arbitrary and capricious for an agency to monetize a project’s economic impacts but fail to monetize its climate costs using the social cost of greenhouse gases.249 As these courts recognize, monetizing only beneficial economic impacts and not climate impacts presents a skewed picture that inappropriately tips the scales in the applicant’s favor.250 Monetizing climate impacts, in contrast, allows for easy comparison and integration into the NGA assessment and thereby facilitates a rational and transparent assessment of whether the project is in the public interest.


245 Zero Zone, Inc. v. U.S. Dep’t of Energy, 832 F.3d 654, 678 (7th Cir. 2016).

246 The district court decision enjoining the use of the social cost of greenhouse gases, see infra note 131, has been widely criticized for violating basis principles of administrative law, with conservative legal scholar Jonathan Adler calling it a “mess.” Jonathan H. Adler, Federal Court Bars Federal Agencies from Considering the Costs of Climate Change in Rulemakings, REASON: VOLOKH CONSPIRACY (Feb. 21, 2022), https://perma.cc/KP9U-R52W. And just a few weeks after the injunction was issued, the U.S. Court of Appeals for the Fifth Circuit stayed the injunction on the grounds that plaintiffs could not establish standing. Louisiana v. Biden, No. 22-30087, 2022 WL 866282 (5th Cir. Mar. 16, 2022). Further, another district court has rejected substantially similar arguments as those in the Louisiana case. See Missouri v. Biden, 558 F. Supp.3d 754 (E.D. Mo. 2021).

247 Notably, the Commission has begun including estimates of the social cost of greenhouse gases in recent Section 7 decisions. In two orders involving Section 7 infrastructure to increase firm service to LNG terminals, FERC disclosed staff’s estimates of the social cost of greenhouse gases associated with the direct emissions from operation of the projects, although (citing pending litigation) also stated that it was not “relying on or using the social cost of carbon estimates to make any finding or determination regarding either the impact of the project’s GHG emission on whether the project is in the public convenience and necessity.” See Columbia Gulf Transmission, LLC, 178 FERC ¶ 61,198, at PP 51–52 (2022) (Accession No. 20220325-3074); Tenn. Gas Pipeline Co., LLC, 178 FERC ¶ 61,199, at PP 92–93 (2022) (Accession No. 20220325-3077).


249 High Country Conservation Advocs. v. U.S. Forest Serv., 52 F. Supp. 3d 1174, 1190–91 (D. Colo. 2014) (finding it “arbitrary and capricious to quantify the benefits of the lease modifications and then explain that a similar analysis of the costs was impossible when such an analysis”— namely, using the social cost of greenhouse gases — “was in fact possible”); Mont. Envt’l Info. Ctr. v. U.S. Off. of Surface Mining, 274 F. Supp. 3d 1074, 1096–99 (D. Mont. 2017) (holding it was arbitrary for the agency to quantify benefits in an environmental impact statement while failing to use the social cost of carbon to quantify costs); WildEarth Guardians v. Bernhardt, No. CV 17-80-BLG-SPW, 2021 WL 363955, at *9 (D. Mont. Feb. 3, 2021).

250 See generally Calvert Cliffs’ Coordinating Comm., Inc. v. U.S. Atomic Energy Comm’n, 449 F.2d 1109, 1113 (D.C. Cir. 1971) (NEPA mandates a rather finely tuned and systematic balancing analysis” of “environmental costs” against “economic and technical benefits”) (internal quotation marks omitted); Chelsea Neighborhood Ass’ns v. U.S. Postal Serv., 516 F.2d 378, 386 (2d Cir. 1975) (“NEPA, in effect, requires a broadly defined cost-benefit analysis of major federal activities.”); Sierra Club v. Sigler, 695 F.2d 957, 978–79 (5th Cir. 1983) (holding that NEPA “mandates at least a broad, informal cost-benefit analysis,” and so agencies must “fully and accurately” and “objectively” assess environmental, economic, and technical costs).
Regardless of the necessity of applying the social cost of greenhouse gases, it is clear that merely quantifying emissions and comparing those volumes to larger baselines without a broader assessment of the severity of the project’s contribution to climate change is deficient. The Commission should more robustly consider the impact of a project’s direct greenhouse gas emissions and incorporate that assessment when deciding whether, and on what terms and conditions, the project serves the public interest.

3. **FERC Should Meaningfully Consider the No Action Alternative**

As noted above, in prior analyses FERC has swiftly brushed aside the no action alternative by claiming that it would likely yield few, if any, environmental benefits and would not fulfill the project applicant’s aims. This limited consideration is deficient, and in future assessments, the Commission should more meaningfully consider the no action alternative.

Under NEPA, FERC has an obligation to give full and meaningful consideration to all reasonable alternatives in its environmental compliance documents. At a minimum, this includes proper consideration of the no action alternative. Yet FERC has not fully or meaningfully analyzed the environmental implications of a no action alternative in past authorizations. Instead, the agency has simply asserted, without analysis, that a similar alternative would likely be approved if the proposal were rejected. As the Ninth Circuit has explained in rejecting a similar logic, “[a] no action alternative in an EIS is meaningless if it assumes the existence of the very plan being proposed.” Indeed, this assumption ignores that the Commission (or, potentially, another government regulator) would have to consider an alternative project’s environmental impacts prior to approval, and overlooks the possibility that no project would be built. This assumption is also inconsistent with the Commission’s assessment of economic benefits, which considers the project’s gross impacts and presumes a no action alternative without hypothetical alternative projects.

FERC’s rejection of potential non-LNG alternatives because they do not fulfill the applicant’s goals is similarly misguided. As the U.S. Court of Appeals for the Seventh Circuit has explained, NEPA requires “evaluation of alternative means to accomplish the general goal of an action; it is not an evaluation of the alternative means by which a particular applicant can reach his goals.” Accordingly, agencies cannot “contrive a purpose so slender as to define competing reasonable alternatives out of consideration.” Based on this case law, the Council on Environmental Quality recently rescinded a 2020 regulatory amendment calling for agencies to narrowly define a project’s purpose and need according to “the goals of the applicant,” explaining that such an approach—which mirrors some of FERC’s prior assessments of LNG terminals—is contrary to NEPA. Further, centering alternatives evaluation around a set of criteria that requires

251 W. Watersheds Project v. Abbey, 719 F.3d 1035, 1050 (9th Cir. 2013).
253 Friends of the Yosemite Valley v. Kempthorne, 520 F.3d 1024, 1038 (9th Cir. 2008); see also N.C. Wildlife Fed’n v. N.C. Dep’t of Transp., 677 F.3d 549, 604 (4th Cir. 2012) (“Without [accurate baseline] data, an agency cannot carefully consider information about significant environment impacts . . . resulting in an arbitrary and capricious decision. Accordingly, courts not infrequently find NEPA violations when an agency miscalculates the ‘no build’ baseline or when the baseline assumes the existence of a proposed project.” (internal quotations and citations omitted) (alterations in original)).
254 See supra note 143 and accompanying text.
255 Van Abbema v. Fornell, 807 F.2d 633, 638 (7th Cir. 1986).
256 Simmons v. U.S. Army Corps of Eng’rs, 120 F.3d 664, 666 (7th Cir. 1997) (internal quotation marks omitted); see also Nat’l Parks & Conservation Ass’n v. Bureau of Land Mgmt., 606 F.3d 1058, 1070 (9th Cir. 2010) (“Agencies enjoy considerable discretion to define the purpose and need of a project. However, an agency cannot define its objectives in unreasonably narrow terms.” (internal quotation marks omitted)).
compatibility with the applicant’s goals ensures the no action alternative can never be preferred. By definition, the no action alternative, which rejects the applicant’s application, is incompatible with and cannot fulfill the applicant’s stated project goals. This standard inherently undermines the goal of NEPA and its requirement that agencies thoroughly consider the no action alternative.

Accordingly, FERC’s analysis of the no action alternative is insufficient. The Commission must carefully analyze alternatives distinct from the applicant’s own goals and incorporate such an analysis into its NGA determination as appropriate.

B. Avenues to Improve DOE’s Assessment

Like FERC, the Department’s analysis of climate impacts is deficient in several key ways. Even though the Department must consider indirect greenhouse gas emissions, it arbitrarily neglects available tools for doing so and ignores fundamental economic principles in concluding that natural gas export may have positive climate impacts.

1. DOE Must Properly Consider Indirect Greenhouse Gas Emissions

If FERC continues to exclude information on indirect emissions, then DOE should supplement its review to quantify and assess the impacts of upstream and downstream greenhouse gas emissions associated with the export authorization. Two lines of case law strongly indicate that DOE should assess indirect greenhouse gas emissions from natural gas exports. First, the D.C. Circuit decisions discussed above rejecting claims that FERC must assess indirect greenhouse gas emissions explicitly relied 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. As explained in Freeport, “the Department of Energy . . . has sole authority to license the export of any natural gas.” The court elaborated on this reasoning in Sabine Pass, explaining that “the potential environmental effects flowing from greater natural gas exports,” including indirect greenhouse gas impacts, are properly directed to DOE because it “authorize[s] [applicants] to increase exports.”

If these cases were not sufficiently clear, D.C. Circuit case law regarding FERC’s consideration of indirect greenhouse gas emissions under Section 7 of the NGA should eliminate any ambiguity. Under Section 7, the Commission alone (and not DOE) is responsible for reviewing applications for interstate pipelines and other natural-gas transmission facilities. In that context, pipeline developers have previously claimed—like DOE did in the categorical exclusion rule—“that FERC would [not] be the legally relevant cause of any [indirect] carbon emissions” and thus need not consider those emissions in its analysis. But the court rejected that argument, explaining that fossil-fuel combustion is the “entire purpose” of the project and thus a legally relevant effect. The same basic logic applies to DOE’s analysis under Section 3, and compels the same result.

258 See supra notes 142–143.
259 See supra notes 28–39 and accompanying text.
264 Id. The same can be said for upstream emissions. As EPA has explained, where the purpose of a proposed natural gas pipeline “is to transport natural gas for consumption; that natural gas must be produced.” Comments of U.S. Env’t Prot. Agency at 1–2, Enhancement by Compression Project Final Environmental Impact Statement, Iroquois Gas Transmission Sys., L.P., Docket No. CP20-48 (Dec. 20, 2021) (Accession No. 20211220-5086); see also Comments of U.S. Env’t Prot. Agency at 4, Delta Lateral Project Draft Environmental Impact Statement, Kern River Transmission Co., Docket No. CP21-197 (Dec. 27, 2021) (Accession No. 20211227-5110). Again, the same logic applies to exports—where the purpose of the authorization is to export natural gas for consumption, that gas must be produced, making upstream production and the related emissions reasonably foreseeable.
Until recently, DOE had not argued that indirect emissions are outside the scope of its analysis. Prior to 2020, DOE simply relied on a life cycle analysis comparing U.S. LNG exports to coal and other natural gas. However, in DOE’s 2020 categorical exclusion rule, discussed in Section II.B.iii, the agency argued that indirect effects fall beyond the scope of the agency’s consideration, and are “too attenuated to be reasonably foreseeable.”

The contention over indirect emissions runs counter to D.C. Circuit case law finding that such indirect effects of LNG exports must be assessed by DOE. These indirect effects fall “squarely and exclusively” within DOE’s purview, and a failure to properly quantify and assess the impact of increased emissions from LNG projects would render DOE’s environmental review in those cases arbitrary and capricious. DOE’s responsibility here is analogous to FERC’s responsibility to consider greenhouse gas emissions under Section 7. Just as courts have concluded indirect emissions are a reasonably foreseeable impact of FERC’s certification of interstate pipelines, indirect emissions are a reasonably foreseeable impact of DOE’s authorization of new exports. DOE could deny an export application on the basis of these environmental concerns, and thus is a legally relevant cause.

In short, the Department must consider the effects of indirect greenhouse gas emissions under NEPA and incorporate those impacts into its public interest analysis under the NGA.

2. Despite the Department’s Claims, DOE Can Apply Reasonable Assumptions to Quantify Indirect Emissions

DOE has also repeatedly claimed that indirect greenhouse gas emissions are speculative and impossible to reasonably quantify. This claim also stands on tenuous legal footing and is belied by the experience of other agencies. Moving forward, DOE should apply reasonable assumptions to quantify indirect emissions.

Other agencies routinely use reasonable assumptions to quantify both downstream and upstream greenhouse gas emissions. With downstream emissions, for instance, FERC has employed a full-burn assumption to provide an upper-bound estimate of greenhouse gas emissions from power generation. This assumption is widely accepted in the regulatory and scientific communities, and it provides a clear and consistent way to compare different projects. Similarly, DOE can use reasonable assumptions to quantify indirect emissions from upstream production, such as the use of “well-to-wire” emissions factors to estimate the total greenhouse gas emissions associated with each stage of the LNG supply chain.

265 See 2014 Life Cycle Report, supra note 201; 2019 Life Cycle Report, supra note 201; see also Jordan Cove Energy Project L.P., Order No. 3413-A, Docket No. 12-32-LNG, Final Opinion and Order Granting Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Nations, at 109 (July 6, 2020) (“[T]o the extent U.S. LNG exports are preferred over coal in LNG-importing nations, U.S. LNG exports are likely to reduce global GHG emissions on per unit of energy consumed basis for power production” and “to the extent U.S. LNG exports are preferred over other forms of imported natural gas, they are likely to have only a small impact on global GHG emissions.”).

266 DOE Categorical Exclusion Rule, supra note 222, 85 Fed. Reg. at 78,197 n.9 (cabining scope of analytical assessment to activities “starting at the point of delivery to the export vessel, and extending to the territorial waters of the receiving country”).

267 Id. at 78,200.

268 Freeport, 867 F.3d at 46.

269 Notably, EPA recently provided a succinct explanation of why upstream emissions from production are a reasonably foreseeable indirect effect of FERC certification of a new pipeline—where “the purpose of the proposed project is to transport natural gas for consumption; that natural gas must be produced.” Comments of U.S. Env’t Prot. Agency at 1–2, Iroquois Enhancement by Compression Project, Docket No. CP20-48 (Dec. 20, 2021) (Accession No. 20211220-5086) [hereinafter EPA Comments on Iroquois FEIS]. Likewise, where the purpose of the application is to export natural gas, that natural gas must be produced, and it is reasonably foreseeable that an indirect effect of that production will be upstream greenhouse gas emissions. The quantity of these emissions is independent of where combustion occurs. The impact of these emissions is independent of the location of production. Thus, the upstream greenhouse gas emission and their impact are reasonably foreseeable.

270 See Sabal Trail, 867 F.3d 1373.
bound estimate of the emissions associated with interstate pipeline facilities.\(^{271}\) The Department of Interior’s Bureau of Land Management (BLM) has employed a similar assumption for assessing the downstream emissions resulting from natural gas extraction, assuming that all extracted gas will ultimately be combusted.\(^{272}\) Though not perfect, this approach may provide a reasonable upper-bound estimate of gross emissions and has been employed by other agencies.

Another option is to assume less than full-burn by attempting to assess project utilization. In its Draft GHG Policy Statement, for instance, FERC endorses a projected utilization rate to determine reasonably foreseeable GHG emissions.\(^{273}\) As justification, FERC explains that a full-burn assumption may overstate emissions because pipelines are planned to meet a peak capacity a few days a year, and thus unlikely to be 100% utilized at most times.\(^{274}\) However, this argument may not hold for LNG export terminals, given that DOE has recently stated that existing export terminals are operating at full capacity.\(^{275}\) If a full-burn assumption is used as a high-end estimate, DOE can also allow the applicant to provide better project-specific information, either about its plans for exporting less than its full authorization or about substitution given known destinations.\(^{276}\) This would enable DOE to project gross greenhouse gas emissions based upon reasonable assumptions about the utilization of the export license.

A third option is for DOE to assess greenhouse gas emissions on a net basis accounting for induced changes in global demand and energy substitution among different energy sources. This can be accomplished by formally modeling substitution. Other agencies including the Department of the Interior and Environmental Protection Agency (EPA) apply models of market dynamics that consider how the addition or subtraction of one source of energy will affect other energy sources.\(^{277}\) Additional models are available—including one from the U.S. Energy Information Administration (EIA)—that are designed to capture international market dynamics.\(^{278}\) While these models each have benefits and drawbacks, their existence and use by other agencies casts doubt on DOE’s claim that these market dynamics are too challenging to consider—and downstream emissions too speculative to assess. Furthermore, even if DOE does not perform detailed modeling, it could still make reasonable (if imprecise) assessments of energy substitution based on

271 See, e.g., N. Nat. Gas Co., 175 FERC ¶ 61,146, at P 32 (2021) (Accession No. 20210520-3089); Tuscarora Gas Transmission Co., 175 FERC ¶ 61,147, at P 28 (2021) (Accession No. 20210520-3088). FERC recently held a technical conference on the use of reasonable default estimates, including using a full-burn or some other lower utilization rate. See generally Transcript of Technical Video Conference, Greenhouse Gas Mitigation: Natural Gas Act Section 3 and 7 Authorizations, Docket No. PL21-3 (Nov. 19, 2021) (Accession No. 20211222-4002); see also Comments of the Inst. for Pol’y Integrity at NYU School of Law, Greenhouse Gas Mitigation: Natural Gas Act Section 3 and 7 Authorizations, Docket No. PL21-3 (Jan. 7, 2022) (Accession No. 202020107-5143). Notably, a recent decision from the D.C. Circuit rejected the notion that FERC is required to assume that all the gas (full-burn) or that a certain percentage of gas (based on industry statistics) to be transported will be combusted. See Delaware Riverkeeper Network v. Fed. Energy Regul. Comm’n, No. 20-1206, 2022 WL 3036392, at *3–4 (D.C. Cir. Aug. 2, 2022). The court left it to FERC’s “informed discretion” to use such default assumptions but did not suggest that FERC is foreclosed from doing so should it choose. Id.


274 Id. at PP 49–50.


276 FERC has taken this approach. While employing a projected utilization rate as the default estimate rather than a full-burn assumption, the Commission has provided developers and other stakeholders the opportunity to provide other project-specific information relevant to quantifying emissions. See Draft GHG Policy Statement, supra note 154, at PP 50–52.


the current and long-term energy mix of the expected destination countries. If, for instance, the exports appear likely to replace coal, then that would suggest that its climate impacts are limited. If, however, an applicant proposes long-term export to a region that is undergoing a transition to renewables, that would suggest that the export is likely to have substantial climate effects.

**DOE can also adopt reasonable default estimates for upstream emissions in line with the practices of other agencies.** Both BLM and EPA routinely estimate upstream emissions from their actions. EPA’s estimations are particularly relevant here, as EPA is also applying estimates of upstream emissions outside the context of direct regulation over those emissions while using reasonable modeling assumptions. In fact, EPA uses estimates that DOE initially developed. Furthermore, in a recent FERC proceeding involving interstate pipeline infrastructure, EPA recommended a methodology for calculating the emissions associated with induced upstream production. Specifically, EPA suggested that, as a default in the absence of more specific information, FERC quantify upstream emissions by (1) looking at total national upstream emissions to get an average of emissions per unit of production, and (2) multiplying that average by the amount of gas to be transported (that is the amount of production that will occur). DOE could similarly apply this methodology, which would provide an upper-bound estimate because it does not account for substitution effects.

A recent decision involving FERC’s regulation under Section 7 also suggests that DOE’s usual assessment of indirect emissions is inadequate. In *Birckhead v. FERC*, the Commission declined to quantify a pipeline’s upstream and downstream emissions, claiming, as DOE often does, that it lacked relevant information about the source and final destination of natural gas. The D.C. Circuit noted that it was “troubled . . . by the Commission’s attempt to justify its decision to discount downstream impacts based on its lack of information” and opined that the applicant could provide relevant information. To engage in “reasonable forecasting,” the court said that FERC must “at least attempt to obtain the information necessary” to quantify emissions. Although a lack of jurisdiction prevented the court from striking down FERC’s “less-than-dogged efforts,” the court made clear that it found those efforts wanting.

More recently, the court reaffirmed this obligation in *Food & Water Watch v. FERC*, quoting *Birckhead* and stating that “an initial lack of information does not afford an agency carte blanche to disregard indirect effects.” Rather, NEPA requires agencies to first “attempt to gather the information necessary to assess the project’s potential indirect effects,” and then analyze reasonably foreseeable effects of a project based on the record before it. This finding indicates that DOE’s current assessment of indirect emissions is deficient and that DOE should consider upstream and downstream emissions using reasonable methodologies.

---


282 See EPA Comments on Iroquois FEIS, supra note 269.

283 Id. at 3–4.


285 Id. at 519–20.

286 Id. at 520.

287 Id. at 520–21.


289 Id. at 286.
Because DOE’s obligations under Section 3 are analogous to FERC’s duty under Section 7, DOE should also look to the Commission as it finalizes and begins to implement its GHG Policy Statement. The Department may be able to learn from the Commission on how to quantify and consider upstream and downstream emissions in natural gas proceedings. As currently formulated, applicants and stakeholders will be asked to include detailed information about greenhouse gas emissions associated with natural gas infrastructure in the record, which the Commission will use to quantify and assess emissions associated with the project, based on both reasonable assumptions and project-specific data.

3. **DOE's Analysis Overlooks Important Substitution Considerations**

In addition to claiming that indirect greenhouse gas emissions are too speculative to reasonably assess, DOE suggests that life cycle greenhouse gas emissions from U.S. gas exports decrease global emissions as compared to energy substitutes including coal and LNG from European and Asian markets. But this conclusion overlooks economic considerations that federal courts have relied on in rejecting similar conclusions.

The addition of an energy source has ripple effects on the market. To a large extent, that energy source displaces other sources of energy that would otherwise fill the demand. For instance, in the United States during the Shale Revolution, natural gas displaced both higher-emitting coal and lower-emitting renewable sources, namely wind resources. The effect of natural gas exports on total greenhouse gas emissions thus will largely depend on how much natural gas displaces different energy sources over a project’s lifetime; the more that natural gas displaces renewables (which is increasingly likely throughout the decades-long lifetime of a project), the more it contributes to additional greenhouse gas emissions. 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.

But DOE’s analysis of lifecycle emissions mostly disregards these important considerations. For one, DOE’s analysis disregards the reality that by increasing the global supply of fossil fuels, U.S. exports are likely to increase total fossil-fuel production and combustion. Classical economics posits that because gas is cheaper than other fuel alternatives, foreign markets will demand more of it, leading profit-maximizing energy producers to export more gas to foreign countries. U.S. exports therefore lead to lower prices abroad and increase the quantity of gas demanded, thereby increasing total consumption abroad while also displacing other fuel sources. This possibility has even been acknowledged by

---

290 2019 Life Cycle Report, supra note 201; DOE Addendum, supra note 197, at 44 (claiming LNG exports may have “a net positive impact in terms of climate change”); DOE Categorical Exclusion Rule, supra note 222, 85 Fed. Reg. at 78,201 (“[T]he use of U.S. LNG exports for power production in European and Asian markets will not increase global [greenhouse gas] emissions from a life cycle perspective.”).


292 See id. at 8 (“Overall, we expect more natural gas deliveries to be associated with less generation from coal in the short run, as lower natural gas price makes natural gas more attractive than coal. In the long run we expect more natural gas deliveries (lower natural gas price) to be associated with less coal capacity (generation) and wind capacity.”).

293 See Ctr. for Sustainable Econ. v. Jewell, 779 F.3d 588, 609 (D.C. Cir. 2015) (describing the results of the Department of Interior’s economic model, which found that “forgoing additional leasing on the [Outer Continental Shelf] would cause an increase in the use of substitute fuels such as renewables, coal, imported oil and natural gas, and a reduction in overall domestic energy consumption from greater efforts to conserve in the face of higher prices”).

294 Cheapest, that is, for the energy producer. Externalities borne by the public—such as climate and other environmental and health costs—do not factor into the producer’s business decisions unless they are internalized.

FERC, which has previously recognized that denying applications for LNG export could result in “international energy conservation.”

On numerous occasions, in fact, courts have rejected agency analyses that ignored these effects on energy consumption. In one particularly notable decision, the U.S. Court of Appeals for the Eighth Circuit sharply criticized the Surface Transportation Board for “illogically” concluding that approving new coal railroad lines would not affect coal consumption. The court in that case explained 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.” The same logic holds true here: LNG export authorizations, like coal railroads, are intended to facilitate the production and consumption of comparatively low-cost fossil fuels. They too, therefore, stimulate additional supply, lead to lower prices and hence higher consumption. Thus, ignoring those impacts in approving the export is similarly misguided.

In another notable case, the U.S. Court of Appeals for the Ninth Circuit rejected an analysis from the Bureau of Ocean Energy Management finding that offshore oil extraction in the United States would decrease global greenhouse gas emissions. Underlying that “counterintuitive result” was Interior’s omission of foreign energy markets from its analysis; in essence, Interior assumed that domestic extraction would not affect international supply and consumption. But as the court explained, increased domestic production causes “foreign consumers [to] buy and consume more oil.” In fact, the court highlighted “credible scientific evidence” in the administrative record showing how increases in domestic production resulted in “increases in foreign oil consumption [that] can be translated into estimates of greenhouse gas emissions.” Following this Ninth Circuit case, two subsequent district court opinions similarly faulted Interior analyses for omitting the effects of domestic production on foreign demand and consumption.

As these authorities demonstrate, the greater availability resulting from increased exports would not fully displace other sources of energy supply to international markets, as the Department’s prior orders have implied, but instead increase the total supply and consumption of fossil fuel, potentially increasing total greenhouse gas emissions. Moreover, past case law does not shield DOE’s improper assessment of energy demand and substitution impacts from challenge. While Sierra Club I upheld the Department’s analysis of life cycle emissions, the challengers focused only on the omission of renewables from the Life Cycle Greenhouse Gas Report and did not argue that exports would facilitate additional energy demand and fossil-fuel combustion. Sierra Club I thus does not foreclose this challenge to DOE’s analysis of substitution impacts.

By relying on the Life Cycle Greenhouse Gas Report to suggest that LNG exports decrease global emissions, DOE overlooks another key consideration: **LNG exports may not only displace other fossil fuels, but are also likely to displace carbon-free renewable energy sources.** As one recent study explains, increasing utilization of renewable

296 Cameron LNG EIS, supra note 116, at 3-2. FERC refused to analyze this possibility further.
298 Id.; 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”).
299 Ctr. for Biological Diversity v. Bernhardt, 982 F.3d 723, 736–40 (9th Cir. 2020).
300 Id. at 736.
301 Id.
302 Id. at 738.
304 See Gilbert & Sovacool, supra note 295, at 1671 (concluding that “emissions are not likely to decrease [from U.S. LNG exports] and may increase significantly due to greater global energy consumption, higher emissions in the US, and methane leakage”).
305 Sierra Club v. Dep’t of Energy (Sierra Club I), 867 F.3d 189, 202 (D.C. Cir. 2017).
energy in the coming decades casts doubt on DOE’s suggestion that LNG exports are likely to displace other fossil-fuel sources and thereby potentially decrease total emissions. The study clarifies that net emission benefits require that most LNG export capacity displaces coal over the long-term, if countries substantially reduce their emissions over the coming decades, consistent with international climate targets, then LNG export capacity would primarily displace renewables rather than coal over the long-term and thus result in a substantial emissions increase.

There is now extensive case law recognizing the importance of considering substitution impacts. Other agencies have developed and applied energy market models that analyze these types of substitution effects and increased demand. Some of these models do not analyze impacts on foreign supply and demand with the same granularity as they assess domestic markets, but other models have been developed specifically to analyze global market dynamics. Regardless of whether the Department chooses to use these models, it cannot assume away the impacts of LNG exports on global demand.

C. FERC’s and DOE’s LNG-Related Authorizations Are Connected Actions Under NEPA and Must Be Considered Together

The previous sections offered recommendations for improving FERC’s and DOE’s reviews of environmental impacts of their respective LNG-related authorizations. However, DOE and FERC should conduct a single review of the impacts of a project’s exports and facilities—including direct, upstream, and downstream greenhouse gas emissions—because the two authorizations are connected actions under NEPA regulations. Combined, the authorization of LNG facility construction or modification and the authorization of LNG exports to non-FTA nations make up a larger federal action: federal approval to facilitate LNG exports. As such, the review of their impacts cannot be segmented, and the agencies should undertake a unified analysis of the impacts.

Under CEQ’s NEPA regulations, agencies’ environmental reviews must consider “connected actions.” This requirement ensures that environmental review encompasses the proper scope of the proposed action and prevents agencies from breaking down or “segmenting a project and the associated environmental review into multiple “actions”

306 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 (explaining that LNG exports could increase total emissions, potentially substantially, over the next three decades if they displace carbon-free sources rather than fossil fuels).

307 Id. at 7 (“Net emissions benefits can be achieved if at least 60% of LNG capacity is used for coal-to-gas substitution in the power sector.”).

308 Id. at 7–8 (“Long-term LNG expansion for use in the power sector is not compatible with 1.5°C and 2°C pathways even under 100% coal-to-gas substitution. This is because coal use around the world declines rapidly between 2020 and 2040 in all 1.5°C and 2°C scenarios such that there is not enough coal for LNG to substitute to counteract the emissions from additional LNG. That is, 1.5°C and 2°C pathways are where coal use declines independent of the need for additional LNG.”).

309 See supra notes 277–278 and accompanying text.

310 Nonetheless, the Department of Interior recently, for the first time, applied MarketSim to model impacts on foreign consumption and emissions. BUREAU OF OCEAN ENERGY MGMT., REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR COOK INLET LEASE SALE 258, at 47 (2021) (“MarketSim estimates that under the No Action Alternative, foreign oil consumption would be roughly 86.4 [million barrels] lower than the Proposed Action in total over the 32-year production period estimated for the Proposed Action.”).

311 Such models include the World Energy Projection System and the World Energy Model. See supra note 278 and accompanying text.

312 Actions are connected if they (i) Automatically trigger other actions which may require environmental impact statements; (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously; or (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.” 40 C.F.R. § 1501.9(e)(1). From 1978 to 2020, NEPA regulations also required agencies to consider “cumulative” and “similar” actions. Id. § 1508.25(a)(2), (a)(3) (1978). As noted below, case law holds that actions can be connected even if performed across multiple agencies. See infra notes 333–334 and accompanying text.
that “individually have an insignificant environmental impact, but which collectively have a substantial impact.”

313 The failure to include a connected action in an environmental review can result in a court finding the agency has improperly segmented its review and accordingly vacating the resulting agency action.314

Case law from FERC and other agencies provides further detail on what constitutes improper segmentation. In reviewing whether the Commission had improperly segmented its review of modification projects to physically connected parts of a pipeline, the D.C. Circuit in Delaware Riverkeeper Network v. FERC noted that one segment could be analyzed independently if it “(1) has logical termini; (2) has substantial independent utility; (3) does not foreclose the opportunity to consider alternatives; and (4) does not irretrievably commit federal funds for closely related projects.”

Correspondingly, in deciding whether actions were connected, court decisions involving other agencies have also considered such factors as whether the permits and permissions were ‘justified by’ a larger federal action” and whether “the federal projects are ‘interdependent’ and have a ‘synergistic’ environmental effect.” In practice, courts have often focused prominently on the independent utility test to evaluate connectedness, which, like the second criterion in the NEPA regulations, centers on whether each project can or will proceed without the other. In Delaware Riverkeeper, the court’s analysis of this prong focused on whether the projects at issue were “financially interdependent,” explaining that “[t]he commercial and financial viability of a project when considered in isolation from other actions is potentially an important factor in determining whether the substantial utility factor has been met.” In the Ninth Circuit, “[t]he crux of the test is whether ‘each of two projects would have taken place with or without the other.”

That standard for establishing whether actions are connected is met in the case of LNG exports and facilities. For one, DOE’s and FERC’s actions lack independent utility. Applicants often explicitly tie their two Section 3 applications together. The export authorization is not sought untethered to a facility; rather, it is a request to export a certain quantity of LNG from a specific facility, based on the operational parameters of that facility. The agencies themselves


314 Id. at 1313 (explaining that improper NEPA review that does not comply with “reasoned decisionmaking” may lead the court to set aside an agency action as arbitrary and capricious).

315 Id. at 1315 (quoting Taxpayer Watchdog, Inc. v. Stanley, 819 F.2d 294, 298 (D.C. Cir. 1978), which assessed whether a NEPA review of a subway construction project in which plans for a large project were abandoned in favor of a shorter length of rail was sufficient without having analyzed potential further development of the line); see also Piedmont Heights Civic Club, Inc. v. Moreland, 637 F.2d 430, 439 (5th Cir. 1981) (applying same factors); Swain v. Brinegar, 542 F.2d 364 (7th Cir. 1976) (applying the first three factors).


317 Delaware Riverkeeper, 753 F.3d at 1316. In Coalition on Sensible Transp., Inc. v. Dole, the regulations applied by the court defined “independent utility or independent significance” to mean a project “is useable and a reasonable expenditure even if no additional transportation improvements in the area are accomplished.” 826 F.2d 60, 68 (D.C. Cir. 1987).

318 Great Basin Mine Watch v. Hanks, 456 F.3d 955, 969 (9th Cir. 2006) (quoting Wetlands Action Network v. U.S. Army Corps of Eng’rs, 222 F.3d 1105, 1118 (9th Cir. 2000)). For projects completed in phases, the Ninth Circuit has asked whether there is a “dependency . . . such that it would irrational, or at least unwise, to undertake the first phase if the subsequent phases were not also undertaken.” Trout Unlimited v. Morton, 509 F.2d 1276, 1285 (9th Cir. 1974).


320 See, e.g., id. at 10 (“CP2 LNG has included both phases of its Project in its FERC pre-filing proceeding and its formal FERC application. Accordingly, CP2 LNG requests here authorization to export the total volume of both phases of its Project.”); Sabine Pass DOE Final Order No. 2961-A, supra note 106, at 3 (“The permitted exports would be from liquefaction and related facilities to be constructed at the Sabine Pass LNG Terminal . . . .”); Magnolia LNG, LLC, Order No. 3909, Docket No. 13-132-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Proposed Magnolia LNG Terminal to Be Constructed in Lake Charles, Louisiana, to Non-Free Trade Agreement Nations, at 1 (Nov. 30, 2016) [hereinafter Magnolia DOE Order No. 3909] (“Magnolia LNG seeks authorization to export the LNG by vessel from the proposed Magnolia LNG Terminal, which Magnolia intends to construct, own, and operate near Lake Charles, Louisiana (Project.”).
have also tied their own authorizations to one another’s.\textsuperscript{321} When DOE issues conditional orders, FERC relies on DOE’s analysis of the public and economic benefits for its own public interest analysis.\textsuperscript{322} Similarly, DOE always relies on FERC’s analysis of environmental impacts in authorizing facilities.\textsuperscript{323} Thus, both the applicant and the agencies already acknowledge how closely related and functionally interdependent the two approvals are.

In addition, while the D.C. Circuit’s Freeport decision explicitly left the segmentation question open, it offered logical support for the connectedness of these actions. The court said: “[T]he Commission’s NEPA analysis was an integral component of authorizing the export construction projects—without which the DOE’s separate authorization would be pointless.”\textsuperscript{324} Thus, the court recognized in dicta that the DOE’s authorization would not have independent utility if the facility itself were not authorized. This is a logical conclusion. The export application, as noted, is for export from a specific facility—the facility that the Commission reviews. If that facility cannot be built due to a lack of federal approval, the export requested in the application likewise cannot occur.

The interdependence also runs in the other direction—a particular LNG export terminal may not be built without authorization to export LNG to non-FTA countries. While FERC has argued that the export authorization and the facility are not connected actions because the facility can simply be used to export LNG to FTA countries if an approval to export to non-FTA countries is not granted,\textsuperscript{325} the two authorizations are financially interdependent given the market dynamics of U.S. LNG exports. Of the top 12 U.S. LNG export destinations in 2020, only two of the countries have FTAs with the United States.\textsuperscript{326} South Korea, an FTA country, is currently the top purchaser of U.S. LNG, having received 14.8% of exports since 2016.\textsuperscript{327} However, Japan, a non-FTA country, is a close second (receiving 10.7% of total exports), and China, which recently lowered its tariffs on natural gas imports, is third (receiving 9.2% of total exports).\textsuperscript{328} Global demand for natural gas is expected to continue to grow, largely driven by the industrial sector in non-FTA countries such as China and India, as well as other emerging Asian markets.\textsuperscript{329} Given these market dynamics, it seems implausible to suggest that a facility would have the same (or even similar) commercial viability were it to be denied approval to

\textsuperscript{321} See Sabine Pass DOE Conditional Order No. 2961, supra note 41 (“Opinion and Order Conditionally Granting Long-Term Authorization to Export Liquefied Natural Gas From Sabine Pass LNG Terminal to Non-Free Trade Agreement Nations” (emphasis added)); Magnolia DOE Order No. 3909, supra note 320 (“Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Proposed Magnolia LNG Terminal to Be Constructed in Lake Charles, Louisiana, to Non-Free Trade Agreement Nations” (emphasis added)). Both orders make clear that the authorization is for an export from a specific terminal in the actual title of the order.

\textsuperscript{322} See Sabine Pass Liquefaction, LLC, 139 FERC ¶ 61,039, at P 28 (2012) (Accession No. 20120416-3033) (“In conditionally granting long-term authorization to export LNG from Sabine Pass to non-free trade agreement nations, DOE found that there was substantial evidence of economic and public benefits such that the authorization was not inconsistent with the public interest. We recognize DOE’s public interest findings in issuing our order.”).

\textsuperscript{323} See Procedural Notice, supra note 112, 79 Fed. Reg. at 48,133. Given that FERC often relies on DOE’s public interest analysis and DOE always relies on FERC’s environmental review, the two actions at issue, FERC’s construction authorization and DOE’s export authorization, always occur contemporaneously. In fact, CP2 LNG submitted its applications to DOE and FERC on the same date. CP2 LNG Application, supra note 319, at 3.


DOE’s LNG Monthly shows the same is true when looking at total exports since 2016, with only South Korea, Chile, and Mexico making the top 15 exporters, and collectively accounting for only 24.7% of exports. See DOE LNG MONTHLY, supra note 52, at 2. For a list of countries with FTAs see supra note 48 and accompanying text.

\textsuperscript{327} Top LNG Destinations, supra note 326; DOE LNG MONTHLY, supra note 52, at 2.

\textsuperscript{328} DOE LNG Monthly, supra note 52, at 2; Asia Became the Main Export Destination for Growing U.S. LNG Exports in 2020, ENERGY INFO. ADMIN. (Mar. 15, 2021), https://perma.cc/82FA-6EM7.

\textsuperscript{329} INT’L ENERGY AGENCY, GAS MARKET REPORT Q3-2021, at 10–14 (2021), https://perma.cc/2CDY-F38F.
export LNG to most of the highest-purchasing nations. Whether a facility would actually be built as proposed may well be functionally and financially dependent on whether it receives authorization from DOE to export gas to non-FTA nations.

<table>
<thead>
<tr>
<th>Volume (Bcf)</th>
<th>Percentage of Total Volume</th>
<th>Number of Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTA</td>
<td>2,693.3</td>
<td>9</td>
</tr>
<tr>
<td>nFTA</td>
<td>6,697.7</td>
<td>33</td>
</tr>
<tr>
<td>Total LNG Exports</td>
<td>9,390.9</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: DOE

Improper segmentation is an issue in ongoing litigation before the D.C. Circuit over the Alaska LNG terminal and export authorization. In Center for Biological Diversity v. FERC, environmental organizations argue that “the rule against segmentation plainly prohibits FERC’s efforts to sharply divide its action from the Department’s,” and that this rule has “particular force” given that Congress designated the Commission to act as the lead agency for environmental reviews. And, in prior proceedings before FERC, the organizations explained that the export authorization and terminal have no independent utility: “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.”

It is an open question whether the D.C. Circuit will accept this argument. In response to petitioners’ filings, the certificate applicant has argued that connected actions only apply to multiple actions before a single agency, and thus the doctrine is inapplicable in this context. But this is not always true—nor is it clear that such a doctrine would even apply here. In a 2018 decision, the D.C. Circuit indicated that approvals from multiple agencies could be connected. In Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers, petitioners argued that NEPA required a comprehensive action review of the connected and similar actions related to the Dakota Access Pipeline, including permits and permissions granted by the Army Corps of Engineers and the Fish and Wildlife Service. Citing a previous related decision, Sierra Club v. U.S. Army

333 301 F. Supp. 3d 50, 64, 66 (D.C. Cir. 2018).
the court agreed that multiple agencies could collectively perform connected actions,\footnote{Id. at 67 (quoting Sierra Club v. U.S. Army Corps of Eng’rs, 803 F.3d 31, 51 (D.C. Cir. 2015) (agreeing that a “claim that ‘the connected action regulation require[s] that the federal actions in this case’ . . . should have considered connected and ‘analyzed together’ under NEPA” was “an accurate statement of the connected actions doctrine”)).} although in \textit{Standing Rock} it found the actions at issue there were not connected.\footnote{Id. at 67–71. Notably, much of the analysis in \textit{Standing Rock} emphasized that there was limited federal involvement (only a few portions of the pipeline crossed jurisdictional land or waters), and that portions could be re-routed if federal approval was denied, and so each permit had independent utility as “each would allow that portion of the pipeline to proceed as planned, while any denial would result in re-routing—with no apparent impact on the other federally regulated components of the project.” Id. at 68–69. As Michael Berger and Jessica Wentz note, however, “the court’s decision in \textit{Standing Rock} was clearly wrong, as it failed to substantiate its assumption that the pipeline would be re-routed in the absence of federal approvals.” Michael Burger & Jessica Wentz, \textit{Evaluating the Effects of Fossil Fuel Supply Projects on Greenhouse Gas Emissions and Climate Change under NEPA}, 44 WM. & MARY ENV’T L. & POL’Y REV. 423, 474 n.248 (2020). The validity of the court’s conclusions may become clearer this year as federal agency complete their new environmental reviews after courts struck down previous approvals.} Furthermore, because FERC is performing its analysis under authority expressly delegated by DOE,\footnote{U.S. Dep’t of Energy, Delegation Order No. 0204-112, (a) (Feb. 22, 1984), https://perma.cc/UB9G-4GZJ (delegating authority from the Secretary of Energy to FERC, now rescinded); U.S. Dep’t of Energy, Delegation Order No. 00-004.00A, § 1.21.A (May 16, 2006), https://perma.cc/N579-U4MF (re-delegating authority from the Secretary of Energy to FERC).} the argument for the connectivity of the actions of these two agencies is even stronger.\footnote{If delegation invariably created segmented actions, any agency could delegate partial authority over an issue in order to avoid full NEPA review.} Here, DOE retains all authority under Section 3 and has merely delegated some authority to FERC, rather than two agencies exercising independently granted powers.

Thus, there is good reason to believe that construction and export authorizations are connected actions, such that DOE and FERC should perform a single, joint review that assesses all of the environmental impacts of LNG export and terminal operation.\footnote{See also Sabin Ctr. for Climate Change L. at Colum. Law School, Comment Letter on DOE’s Proposed Revisions to its National Environmental Policy Act Implementing Procedures Regarding Natural Gas Exports, at 5 (June 1, 2021).} This includes—but is of course not limited to—all greenhouse gas emissions, including direct emissions from the facility along with upstream and downstream emissions resulting from the export license.
IV. Current Agency Review of Environmental Justice Impacts

The following two sections focus on agency treatment of environmental justice impacts. As with climate impacts, this report describes the relevant agency assessments and case law involving environmental justice, and then provides recommendations for improvement. Because environmental justice considerations are normally focused on the impacts on local communities from terminal operation and construction, these sections are geared toward FERC’s approval of the terminal and do not focus on DOE’s separate consideration of the export authorization.

FERC’s assessment of environmental justice impacts has been both inconsistent and inadequate, frequently disregarding impacts on local communities and failing to meaningfully integrate the impacts it does recognize into its public interest assessment. The following sections highlight the deficiencies of FERC’s assessment and proposes avenues for the Commission to improve its environmental justice analyses.

A. FERC Reviews in Practice

1. Consideration of Environmental Justice Impacts

FERC considers environmental justice concerns in its Section 3 environmental review. FERC recognized the potential environmental justice implications for LNG authorizations as early as 1997. While many authorizations now include stand-alone environmental justice sections, the Commission has not consistently addressed these issues directly or comprehensively. Some authorization orders as recent as 2019 have only briefly discussed relevant impacts while failing to identify affected environmental justice communities or fully compare possible disproportionate impacts. Other recent orders have more extensively discussed environmental justice concerns, especially in orders issued on rehearing.

When FERC orders include an environmental justice analysis, the Commission grounds it in the directives of E.O. 12,898, which calls on specified federal agencies (and asks independent agencies) to consider whether “impacts on human health or the environment (including social and economic aspects) would be disproportionately high and adverse for minority and low-income populations and appreciably exceed impacts on the general population or other comparison group.” FERC is not a specified agency under E.O. 12,898, but it is the Commission’s “usual practice” to prepare an environmental justice analysis. Because the Commission reviews LNG facilities pursuant to delegated authority from

339 Given the limited case law and analogous nature of environmental justice impacts in the Section 3 and Section 7 context, throughout this section we discuss FERC’s environmental justice review in both circumstances.
340 Tenn. Gas Pipeline Co., 79 FERC ¶ 61,375, at 16 (1997) (Accession No. 19970627-1050) (“Further, we disagree that the presence of an ‘neglected utility right-of-way in such an urban setting’ is relevant to the issue of environmental justice. This issue is adequately addressed in the EA in Land Use (section B.4.).”).
345 Jordan Cove LNG FERC Rehearing Order, supra note 124, at P 126.
In assessing environmental justice impacts, the Commission’s NEPA review documents cite CEQ and EPA environmental justice policies and guidelines in its identification of environmental justice communities and its consideration of possible impacts. The Commission has not independently conducted studies or issued comprehensive guidance on how it considers environmental justice in its Section 3 approvals. However, FERC’s new Draft Updated Certificate Policy Statement regarding Section 7 certificates can serve as a reference for its Section 3 review. This policy statement recognizes the need for robust environmental justice analysis but does not outline specific methodologies for review. FERC’s Equity Action Plan also outlines the Commission’s plan to review comments, engage with stakeholders, and build staff capacity to address environmental justice issues associated with natural gas infrastructure, but provides no other substantive plans.

Despite relying on the same CEQ and EPA guidance in each NEPA analysis, the Commission has not followed a uniform pattern when assessing environmental justice impacts as part of its public interest assessment. In particular, the discussion in each order often differs in terms of which set of impacts are mentioned and the depth at which they are discussed. Greater analysis is generally driven by arguments raised in public comments rather than distinct factual circumstances. However, given the historical difficulty of participating in natural gas proceedings, directly impacted stakeholders, like environmental justice communities, have often been unable to meaningfully engage and raise their concerns.

As a general matter, in its Section 3 orders, the Commission will explain that the environmental review document discussed either a variety of potential environmental justice impacts but found that these impacts would not be adverse and disproportionately high for environmental justice communities or that the impacts themselves would not be significant, and then will agree with those conclusions. The Commission sometimes discusses selected issues in more detail, yet most receive only passing mention and a cursory conclusion that the impacts would not be adverse or

---


347 Like with segmentation, if delegation invariably allowed agencies to avoid requirements of the Executive Order, then agencies might delegate partial authority to avoid conducting the environmental justice review demanded by the Executive Order, an illogical result.


349 See generally Draft Updated Certificate Policy Statement, supra note 68; see also id. at 58 n.204.

350 See infra section IV.A.3.


352 Orders have included discussion of health impacts from criteria pollutants; increased risk of infectious disease; anxiety and depression; effects on subsistence activities; effects on tourism, housing, and property values; traffic and safety; visual impacts; noise; water supply and management; and operational impacts related to routine maintenance, among others. See, e.g., Rio Grande LNG, LLC, 170 FERC ¶ 61,046, at PP 63–77 (2020) (Accession No. 20200123-3129) [hereinafter Rio Grande LNG FERC Rehearing Order]; Jordan Cove LNG FERC Rehearing Order, supra note 124, at PP 126–45; Brownsville LNG FERC Rehearing Order, supra note 342, at PP 39–53; Corpus Christi LNG FERC Order, supra note 124, at PP 115–17; Alaska LNG FERC Order, supra note 69, at PP 171–75; Sabine Pass LNG FERC Order, supra note 71, at PP 100–06.

353 See, e.g., Jordan Cove LNG FERC Rehearing Order, supra note 124, at PP 126–45 (responding to NRDC comments); Rio Grande LNG FERC Rehearing Order, supra note 352, at PP 63–77 (responding to Sierra Club comments); Corpus Christi LNG FERC Order, supra note 124, at PP 115–17 (responding to EPA comments).

354 See Draft Updated Certificate Policy Statement, supra note 68, at P 47 (recognizing the many comments discussing barriers to participation of environmental justice communities in FERC proceedings).

355 See, e.g., Alaska LNG FERC Order, supra note 69, at P 176; Freeport LNG FERC Order, supra note 73, at P 52 (2014); Cameron LNG FERC Order, supra note 72, at P 63; Dominion Cove Point LNG, LP, 148 FERC ¶ 61,244, at P 150, Docket No. CP13-113 (2014) (Accession No. 20140929-3053); Venture Global Plaquemines LNG FERC Order, supra note 341, at P 89; Rio Grande LNG FERC Order, supra note 72, at P 98.
disproportionately high.\textsuperscript{356} Environmental justice impacts are typically not discussed at all for project alternatives, even in the underlying EIS documents.\textsuperscript{357} Given this limited discussion from the Commission, environmental justice considerations do not appear to have a significant bearing on FERC’s public interest determinations under Section 3. FERC does not quantify many of the environmental justice impacts it identifies, such as the extent of air quality impacts specifically affecting environmental justice communities, and does not directly weigh or compare them to other factors relevant to the public interest, such as tax revenues, employment opportunities, or retail gas prices. Often, the only relevant determination is that environmental impacts, including environmental justice impacts, are “acceptable,” and therefore the project is not inconsistent with the public interest.\textsuperscript{358}

When the Commission does address environmental justice concerns more extensively in its environmental review documents, its analysis has often suffered from methodological shortcomings. First, FERC’s identification of environmental justice communities has, until recently, and despite the availability of more granular census block data, used only the larger unit of census tracts when defining environmental justice communities.\textsuperscript{359} Using census tracts has led FERC to overlook the presence of environmental justice communities in the vicinity of a project.\textsuperscript{360} Recently, the Commission has shifted to analyzing both census tracts and blocks or only blocks.\textsuperscript{361} However, even when it uses blocks, the Commission does not always analyze all blocks that may experience relevant impacts.\textsuperscript{362} For example, in some

\begin{itemize}
\item See, e.g., Alaska LNG FERC Order, supra note 69, at P 174 (concluding quickly that “while the long-term and permanent effects of the project could disproportionately affect some environmental justice communities by altering caribou migration patterns and providing additional access in undeveloped areas to nonlocal hunters, these impacts are not expected to be high and adverse”); id. at P 175 (acknowledging that construction “would have a medium adverse effect on the social determinates of health, which could disproportionately affect environmental justice populations due to anxiety and depression associated with potential impacts on subsistence,” but finding, without explanation, that “[p]ermanent health impacts would be unlikely to have disproportionately high and adverse impacts on environmental justice populations”); Rio Grande LNG FERC Rehearing Order, supra note 352, at P 72 (rebuthing concerns about possible effects from a project on the cost of housing by simply stating that housing costs “reflect the supply and demand for housing in the county populations” and, without explaining any inquiries FERC did or could have conducted on housing effects, that commenters have offered “no basis to conclude, and we find none, that these factors would differ for the narrower project-affected populations in a way that might result in a disproportionately high and adverse impact.”).
\item See, e.g., Alaska LNG EIS, supra note 115, at 3-1 to -49 (discussing alternatives with no mention of environmental justice communities); Magnolia LNG EIS, supra note 116, at 3-1 to -36 (discussing alternatives with no mention of environmental justice communities); Texas LNG EIS, supra note 142, at 3-1 to -12 (discussing alternatives with no mention of environmental justice communities); Corpus Christi LNG EIS, supra note 116, at 3-1 to -33 (discussing alternatives with no mention of environmental justice communities).
\item See, e.g., Alaska LNG FERC Order, supra note 69, at P 251.
\end{itemize}
instances FERC might find that air quality impacts would likely occur for 30 or more miles from the site of the project, but only analyze environmental justice impacts for one or two miles around the project, without explanation.\textsuperscript{363}

Second, FERC’s use of a comparison population when assessing whether impacts on environmental justice communities are “disproportionate” has also been problematic and led to illogical conclusions. The nature of the comparison group selected inevitably affects the determination of disproportionate impact,\textsuperscript{364} and choosing an improper comparison population can lead to artificial distortion of environmental justice impacts. FERC has at times used surrounding counties,\textsuperscript{365} non-environmental justice communities also affected by the relevant project,\textsuperscript{366} and regional or state populations as comparison groups.\textsuperscript{367} In authorizing the Rio Grande LNG terminal, FERC improperly used the surrounding counties as the comparison group, which led the Commission to conclude that because the project was sited only near environmental justice communities, there would be no adverse and disproportionate impacts.\textsuperscript{368} FERC concluded that because all of them qualified as environmental justice communities, the siting of the project in its particular location did not disproportionately affect environmental justice populations.\textsuperscript{369} In assessing the project at issue in \textit{Sabal Trail}, FERC has also found that where project alternatives would affect a similar percentage of environmental justice populations, the preferred option could not be said to cause a disproportionate impact.\textsuperscript{370}

Third, in analyzing a project’s air quality impacts, FERC has used compliance with EPA’s national ambient air quality standards (NAAQS) to demonstrate that a project would have no adverse impacts on local communities.\textsuperscript{371} The Commission thus does not account for health impacts from exposure to criteria pollutants at levels below the NAAQS,\textsuperscript{372} even though those impacts may be substantial.\textsuperscript{373} In addition, \textbf{FERC has failed to assess health impacts from cumulative exposure to pollution from multiple proposed projects in a single area, assessing only whether the air quality effects of each individual project would lead to levels above the NAAQS.}\textsuperscript{374}

\begin{itemize}
  \item \textsuperscript{363} \textit{Vecinos para el Bienestar de la Comunidad Costera}, 6 F.4th at 1330–31.
  \item \textsuperscript{364} Env’t Prot. Agency, \textit{Technical Guidance for Assessing Environmental Justice on Regulatory Analysis} S4–S5 (2016), \url{https://perma.cc/HG6E-EFD6}. For example, as the EPA explained, “a comparison group of all minorities in the United States, while informative about the burden of risk among minorities, will not directly provide information about whether this burden is higher among minorities relative to non-minorities.” \textit{Id.} at S5 n.55.
  \item \textsuperscript{365} Rio Grande LNG FERC Rehearing Order, \textit{supra} note 352, at PP 64–66; Brownsville LNG FERC Rehearing Order, \textit{supra} note 342, at P 40.
  \item \textsuperscript{366} \textit{See}, e.g., Jordan Cove LNG FERC Rehearing Order, \textit{supra} note 124, at P 138.
  \item \textsuperscript{367} Rio Grande LNG FERC Rehearing Order, \textit{supra} note 352, at P 77.
  \item \textsuperscript{368} \textit{Id.} at P 69.
  \item \textsuperscript{369} \textit{Id.} (using the surrounding counties as the comparison group and finding that because all of them qualified as environmental justice communities, there could be no disproportionate impacts from the project).
  \item \textsuperscript{371} \textit{See}, e.g., \textit{Atlantic Coast Pipeline, LLC}, 164 FERC \$ 61,100, at P 314 (2018) (Accession No. 20180810-3073) [hereinafter ACP FERC Rehearing Order] (“The Final EIS states that Virginia and North Carolina adopted the federal NAAQS; therefore, these standards are appropriate for consideration of air quality impacts from the projects. The Final EIS concluded that the project would not cause or contribute to a violation of the NAAQS and concluded that a health impact assessment was not required.”); Rio Grande LNG FERC Rehearing Order, \textit{supra} note 352, at PP 59–60 (finding the EIS “appropriately relied on NAAQS thresholds to assess health impacts” and that given the cumulative long-term air pollution from the projects will meet air quality requirements, except for ozone, “the projects would not have a significant adverse impact on human health”); \textit{Annova LNG Common Infrastructure, LLC}, 170 FERC \$ 61,140, at P 43 (2020) (Accession No. 20200221-3030) [hereinafter Annova LNG FERC Rehearing Order] (affirming Commission staff’s “reasonable reliance on the NAAQS as a proxy for potential health impacts on area populations”).
  \item \textsuperscript{372} Criteria pollutants produce adverse health effects at levels below the NAAQS. \textit{See}, e.g., Kimberly M. Castle & Richard L. Revesz, \textit{Environmental Standards, Thresholds, and the Next Battleground of Climate Change Regulations}, 103 MINN. L. REV. 1349, 1357–58 (2018).
  \item \textsuperscript{373} \textit{See id.} at 1400–09.
2. Judicial Review of FERC’s Environmental Justice Analysis

Only two federal cases have reviewed FERC’s environmental justice analysis: *Vecinos para el Bienestar de la Comunidad Costera v. FERC* (*Vecinos*), which sided with petitioners on the environmental justice claim, and *Sierra Club v. FERC* (*Sabal Trail*), which sided with the Commission. Both assessed whether the Commission’s consideration of impacts was arbitrary and capricious under NEPA and the Administrative Procedure Act. Specifically, the decisions looked at FERC’s delineation of affected areas, comparisons between project alternatives, and discussion of cumulative impacts. Although narrow, these cases do outline several key principles for the Commission’s consideration of environmental justice.

First, FERC’s delineation of potentially affected areas must be “reasonable and adequately explained and include a rational connection between the facts found and the decision made.” The court in *Vecinos* decided that because FERC’s EIS determined that the project would have air quality impacts extending 31 miles, but then without explanation considered impacts on environmental justice communities only within a two-mile radius, the Commission’s cut-off was “arbitrary.” The authorization was remanded to the agency for further consideration.

Second, FERC’s choice of comparison group when determining whether a project will have disproportionate effects on environmental justice communities must be reasonable. Petitioners in *Sabal Trail* challenged FERC’s finding that the proposed project route posed no disproportionate effects on environmental justice communities. FERC reached this conclusion after determining that the project would not have “high and adverse” impacts on any communities, and that between project alternatives, all had similar environmental justice impacts. The court found that because an “EIS is meant to help agency heads choose among the relevant alternatives, . . . FERC’s decision to directly compare the proposed alternatives to one another, rather than to some broader population, was reasonable under the circumstances.” In cases where some feasible alternative with lower environmental justice impacts were left out of the analysis, the court continued, “[a]nother methodology might be more appropriate.”

Finally, *Sabal Trail* found that FERC’s discussion of cumulative impacts was sufficient under NEPA where the project’s “EIS acknowledged that the . . . project will generate air pollution and noise pollution in Albany, and . . . projected cumulative levels of both of these types of pollution from all sources in the vicinity of the compressor station, finding that both would remain below harmful thresholds.” Although the court discussed this issue very briefly, it deferred to the Commission’s practice of generally disregarding as insignificant air-quality impacts that do not exceed the NAAQS.

Both of these decisions focused on FERC’s obligations under NEPA to conduct an environmental justice analysis. But, *Vecinos* also links a deficient NEPA analysis with a deficient public interest analysis. There, the court determined that FERC’s conclusion that the project was not inconsistent with the public interest relied on the NEPA analysis’
conclusions regarding climate and environmental justice impacts. Because the relied upon analysis was deficient, so was the Commission’s public interest determination. However, neither decision directly addressed how environmental justice concerns should be incorporated into the agency’s public interest assessment.

3. **FERC’s Draft Updated Certificate Policy Statement**

The Draft Updated Certificate Policy Statement, while directly relevant only to Section 7 applications, can provide guidance on how FERC might address environmental justice in its Section 3 actions. The policy statement expands the list of major interests that may be adversely affected by a Section 7 project to specifically include environmental justice communities. It states that FERC “is committed to ensuring that environmental justice and equity concerns are better incorporated into [its] decision-making processes” and clarifies that “consideration of impacts to communities surrounding a proposed project will include an assessment of impacts to any environmental justice communities and of necessary mitigation to avoid or lessen those impacts.” The Commission is explicit that its “public interest responsibility demands that [it] seriously evaluate these considerations and incorporate them into the balancing test.”

The Commission does not commit to any specific framework for assessing environmental justice impacts, but does recognize some pivotal aspects of analysis. The draft policy statement highlights the need to “promptly and properly” identify environmental justice communities, and to appropriately consider demographic considerations on a project-by-project basis in that identification. The Commission also recognizes census blocks groups as the appropriate geographic unit of analysis, and that proper delineation of the affected area and selection of the right reference community is crucial to the analysis. On cumulative impacts, the draft policy statement explains that an isolated analysis of the incremental impacts of a project will almost always “fail to adequately consider the project’s impact on a community that already experiences elevated levels of pollution or other adverse impacts,” and commits to carefully examining cumulative impacts on environmental justice communities. FERC further notes that mitigation activities should be proposed in consultation with affected communities and that it will “look with disfavor on mitigation proposals that are proposed without sufficient community input.”

**B. Department of Energy Reviews in Practice**

Although DOE is a specified agency under E.O. 12,898, no DOE order authorizing an LNG export to non-FTA nations has discussed environmental justice considerations. DOE does, however, adopt FERC’s environmental review documents, which routinely contain some discussion of environmental impacts of an LNG facility, including environmental justice.

---

385 Vecinos para el Bienestar de la Comunidad Costera, 6 F.4th at 1331.
386 Id.
388 Id. at P 79.
389 Id. at P 86 (citing the Vecinos decision remanding the Commission’s order based in part on a deficient environmental justice analysis).
390 Id. at PP 87–88.
391 Id. at PP 88–89.
392 Id. at P 90.
393 Id. at P 91.
395 The authors of this report have reviewed the contents of the orders authorizing long-term exports to non-FTA nations. Those orders, and the corresponding FERC orders and environmental review documents have been compiled as an appendix to this report.
V. Improving Consideration of Environmental Justice for Section 3 Authorizations

FERC’s environmental justice reviews have lacked uniformity and transparency, suffered from methodological flaws, and failed to address important environmental justice concerns. This section recommends several ways FERC can improve its analysis to better incorporate environmental justice considerations into its review.

A. FERC’s Environmental Justice Review Should Be Consistent and Transparent

Environmental justice reviews should always be tailored to the specific characteristics of a project to address the real distributional impacts at that particular location. However, FERC should nevertheless develop a more uniform and transparent approach to such review. Standardized and transparent regulatory decisionmaking can facilitate stakeholder participation, increase procedural legitimacy, and lead to improved agency decisionmaking. Accordingly, the Commission should select a set of core environmental justice issues it will evaluate in each order.

Despite recurring issues such as health effects from air pollution, effects on housing and property values, and noise and visual impairments for environmental justice communities, FERC does not consistently consider and weigh the same environmental justice issues in each authorization order, potentially leaving gaps in its analysis. Standardizing a core set of issues for assessment in every application would help the Commission comprehensively evaluate the potential environmental justice impacts for every project. Recognizing that environmental justice review is not one-size-fits-all, the Commission should additionally determine whether the characteristics of a certain project and the affected population warrant particularized discussion of additional issues. In doing so, FERC should actively seek input from affected communities throughout the entire process to ensure that community priorities are adequately considered, leveraging the resources of its newly established Office of Public Participation.

FERC should also clearly explain how its environmental justice analysis bears on its assessment of public interest, describing whether and, if so, how it uses information gathered in environmental compliance documents to inform its environmental justice review and public interest analysis. As discussed above, the agency’s NEPA assessment provides useful information on environmental impacts, often reaching various conclusions about the significance of those

397 While FERC regulations direct the Commission to consider a wide range of environmental, health, and socioeconomic impacts, these regulations do not specifically require an assessment of impacts with regards to environmental justice communities. See 18 C.F.R. § 380.12.
398 See CEQ 1997 GUIDANCE, supra note 80, at 8 (“Agencies should recognize that the question of whether agency action raises environmental justice issues is highly sensitive to the history or circumstances of a particular community or population, the particular type of environmental or human health impact, and the nature of the proposed action itself. There is not a standard formula for how environmental justice issues should be identified or addressed.”).
impacts and whether they adversely and disproportionately affect environmental justice communities. Nonetheless, that information is not meaningfully assessed by the Commission itself and incorporated into its public interest analysis. It is not always clear what information FERC has weighed in its evaluation. Environmental review documents often contain information that the Commission does not later discuss, making it difficult to understand how (if at all) that information factored into its public interest assessment under the NGA. Moreover, sometimes the information provided in the NEPA analysis is ultimately inapplicable to FERC’s identification of environmental justice communities.

While the presence of information in the Commission’s record could be sufficient under NEPA, it does not assure that FERC has fully considered that information in determining if the project is in inconsistent with the public interest. FERC’s failure to consider relevant environmental justice considerations in its Section 3 authorizations can open it to legal challenge for “fail[ing] to consider an important aspect of the problem.”

B. FERC Should Consistently Use Census Block Data and Appropriate Comparison Groups to Identify Environmental Justice Communities

FERC’s identification of affected environmental justice populations sets the stage for its impact analysis, as it determines whether the Commission accurately identifies minority and low-income populations. As discussed above, the use of census tracts rather than blocks has the potential to obscure the presence of an environmental justice community in tracts where a concentrated minority or low-income community is outnumbered by a population that does not share those characteristics. In fact, FERC’s use of census tract data in its certification of the Southeast Market Pipelines Project concealed the presence of a 100% Black census block due to its location in a majority-white census tract. By contrast, using more local, granular data can help the Commission improve its decisionmaking.

Relatedly, FERC’s choice of comparison population can significantly affect its identification of environmental justice communities. As previously discussed, the Commission’s analyses have sometimes failed to identify environmental justice communities due to an improper comparison group. By causing the agency to overlook impacts on environmental

---

401 Compare Plaquemines LNG and Gator Express Pipeline Project Final Environmental Impact Statement at 4-149 to -155, Docket Nos. CP17-66 & CP17-67 (May 2019) (Accession No. 20190503-3011) (discussing environmental justice concerns related to air pollution, displacement, noise, safety, etc.), with Venture Global Plaquemines LNG FERC Order, supra note 341, at PP 86–89 (discussing only property values).

402 Jordan Cove LNG FERC Rehearing Order, supra note 124, at P 131. FERC considers that the information was appropriately provided to “give the Commission and the public a more complete understanding of the populations potentially affected by the project, even if the additional demographic indicators do not directly inform the required environmental justice analysis under Executive Order 12898.” Id. at P 132.


404 FERC currently defines environmental justice communities as Native American tribal populations or those with a significant minority or low-income population. For a more detailed definition, see Alaska LNG FERC Order, supra note 69, at P 172 (“A minority population exists when a community’s population is over 50 percent minority or if its minority population is meaningfully greater than the percentage in the general population or other comparison group . . . . For the purposes of this analysis, ‘meaningfully greater’ is assumed to be equal to or greater than 1.2 times the [comparison] minority population . . . . A low-income population exists when a community’s population is over 50 percent low-income or when the low-income population percentage of the community exceeds that of the general population or other comparison group.”); Jordan Cove LNG FERC Order, supra note 124, at P 241 (“Tribal populations are considered an environmental justice population with the potential to be disproportionately affected by construction and operation of the projects as a result of their unique relationship with the surrounding areas.”).

405 See PROMISING PRACTICES, supra note 359, at 21 (noting that by choosing an inappropriately sized geographical unit, an agency may fail to accurately portray the size of environmental justice community or miss it altogether).


407 See PROMISING PRACTICES, supra note 359, at 21.

408 See supra notes 364–370 and accompanying text.
justice communities, FERC’s approaches have undermined the purpose of an environmental justice analysis and ignored
the demonstrated history of siting projects in minority and low-income communities, which has overburdened these
populations at a local, state, and national level.\textsuperscript{409} The Commission should improve upon its analysis by using a broad
comparison group that is not too geographically narrow when identifying the presence of disproportionate impacts on
environmental justice communities.

Promisingly, recent FERC authorizations have increasingly used census block data to identify environmental justice
communities, and its Draft Certificate Policy Statement for Section 7 authorizations recognized that the “proper selection
of both the geographic unit of analysis (e.g., census block group) within the affected environment and the reference
community (e.g., county/parish, or state) is necessary to ensure that affected environmental justice communities are
properly identified.”\textsuperscript{410} FERC should equally apply this insight to its Section 3 authorizations, and fulfill its commitment
to ensuring that the “delineation of the affected area, selected geographic unit of analysis, and reference community are
consistent with best practices and federal guidance”\textsuperscript{411} by consistently using census blocks and appropriate comparison
groups in whatever approach it chooses for identifying environmental justice populations. Should the Commission fail
to do so, subsequent authorizations finding a lack of environmental justice impacts may be particularly susceptible to
legal challenge.\textsuperscript{412}

C. FERC Should Analyze Impacts on All Affected Environmental Justice
Communities

FERC should analyze impacts on all of the environmental justice communities actually affected by a project, not just
those immediately adjacent to it. In a number of authorizations, FERC has analyzed environmental justice impacts only
within a one- or two-mile radius of a project, even while recognizing that impacts could extend beyond that range or
analyzing other kinds of environmental impacts beyond that range.\textsuperscript{413} As noted above, the D.C. Circuit rejected this
practice in \textit{Vecinos}, finding FERC’s selection of a narrow two-mile radius arbitrary when the proposed facility would
have air-quality impacts beyond that range.\textsuperscript{414} To conduct a truly comprehensive environmental justice analysis, the
Commission should analyze the effects on all of the environmental justice communities within the geographic range
of an identified impact. At minimum, where FERC chooses to analyze only a narrow radius, it should fully explain any
discrepancies between the geographic scope of expected effects and its range of analysis.

\textsuperscript{409} \textit{See generally} \textit{Clean Air Task Force, Fumes Across the Fence-Line: The Health Impacts of Air Pollution from Oil & Gas
Facilities on African American Communities} (2017), https://perma.cc/SY2WVXXU (describing the greater likelihood that African
Americans will live in fence-line communities and explaining that the disparity “is not a coincidence” because “[h]istorically, polluting facili-
ties have often been sited in or near African American communities”); \textit{see also} Shalanda H. Baker, \textit{Anti-Resilience: A Roadmap for Transfor-
mational Justice within the Energy System}, 54 \textit{Harv. C.R.-C.L. L. Rev.} 1, 8–15 (2019) (describing “the current energy system and how the
system has historically burdened communities of color and low-income communities”).

\textsuperscript{410} Draft Updated Certificate Policy Statement, \textit{supra} note 68, at P 89.

\textsuperscript{411} \textit{Id.}

In D.C. Circuit oral argument over the Rio Grande LNG terminal, considerable discussion focused on FERC’s use of a comparison population
to mask impacts on affected environmental justice communities. Ultimately, however, the court rejected the Commission’s analysis on
2021).

\textsuperscript{412} \textit{Id.; WELC Double E Comments, \textit{supra} note 362, at 58–59.}

\textsuperscript{413} \textit{Vecinos para el Bienestar de la Comunidad Costera}, 6 F.4th at 1330–31.
D. FERC Should Consider Pollution Impacts Below the NAAQS

In analyzing a project’s air quality impacts, FERC has used compliance with the NAAQS as synonymous with a project having no adverse impacts on environmental justice communities. However, the Commission’s reliance on the NAAQS is unsupported by the relevant guidance documents and inconsistent with the scientific and regulatory treatment of NAAQS. Accordingly, FERC should consider impacts of exposure to criteria pollutants below the NAAQS to environmental justice communities.

Carbon monoxide, lead, particulate matter, ozone, nitrogen dioxide, and sulfur dioxide (the six criteria pollutants regulated under the NAAQS) are all non-threshold pollutants, meaning that they have acknowledged health impacts even at legally permissible levels. EPA has identified health benefits from reducing pollutant levels below the legal standard for almost all of its regulated criteria pollutants. Therefore, as a general matter, it is inappropriate to assume that where a project does not violate the NAAQS, there are no health impacts.

Furthermore, FERC’s reliance on the NAAQS is particularly inappropriate for assessing impacts to populations that are sensitive to lower levels of pollution, including those with respiratory and other health issues. For such sensitive populations, exposure to criteria pollutants below the NAAQS may be particularly harmful. Environmental justice communities are more likely to include sensitive populations because of the health disparities they face, a fact that the Commission itself recognizes. For example, asthma exists in higher rates for Black populations and increases health risks from exposure to ozone, particulate matter, and sulfur dioxide. Health risks from such exposure may also be more severe as asthma hospitalizations and mortality have also been observed at higher rates in environmental justice communities. By failing to meaningfully consider impacts of pollutant exposure below the NAAQS, FERC inappropriately disregards harms that a project may pose to these individuals. As noted above, however, in Sabal Trail the D.C. Circuit deferred to FERC’s judgment that pollution levels below the NAAQS in affected communities would “remain below harmful thresholds.” While Sabal Trail gave this issue minimal attention and may not control future legal challenges, it does not preclude FERC from improving its analysis in future proceedings.

---

415 See, e.g., ACP FERC Rehearing Order, supra note 371, at P 314 (“The Final EIS states that Virginia and North Carolina adopted the federal NAAQS; therefore, these standards are appropriate for consideration of air quality impacts from the projects. The Final EIS concluded that the project would not cause or contribute to a violation of the NAAQS and concluded that a health impact assessment was not required.”).
416 See generally Castle & Revesz, supra note 372.
417 Id. at 1392–97 (discussing EPA’s calculations of benefits below NAAQS levels and explicit findings on the lack of evidence of thresholds for ozone, carbon monoxide, and nitrogen dioxide).
418 See id. at 1354, 1374.
419 See id. at 1354, 1374.
E. FERC Should Better Account for Cumulative Impacts on Overburdened Communities

In addition to direct and indirect impacts, a robust environmental justice analysis must account for cumulative impacts on the affected community.\(^{424}\) Recently reinstated NEPA regulations include cumulative impacts as part of the “effects” that agencies must consider in their environmental reviews, and defines such impacts as “effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions.”\(^{425}\) The importance of assessing cumulative impacts is widely recognized in federal guidance. Executive Order 12,898 “recognizes the importance of research, data collection, and analysis, particularly with respect to multiple and cumulative exposures to environmental hazards”\(^{426}\) and Executive Order 14,008 specifically directs all federal agencies to address the “disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.”\(^{427}\) Consideration of cumulative impacts is also required by FERC regulations and highlighted in both CEQ and EPA environmental justice policies.\(^{428}\)

In its environmental justice reviews, however, FERC has often failed to properly assess cumulative impacts on environmental justice populations. Cumulative impacts assessment has multiple dimensions. First, air pollutants such as ozone, sulfur dioxide, and particulate matter can and do interact with other co-pollutants, together causing health impacts more severe than would be predicted by aggregating the independent impacts of each pollutant.\(^{429}\) In failing to consider health effects from pollution below the NAAQS, the Commission ignores how these levels may compound the impacts felt by communities already overburdened with pollution.\(^{430}\) Second, there is a historical dimension to cumulative impacts—new projects are often sited in the same areas as existing ones, compounding environmental stressors on communities.\(^{431}\) Low-income communities and communities of color are especially likely to suffer from such historical overburdening.\(^{432}\) When FERC reviews proposals for new projects, it should fully consider the cumulative environmental

\(^{424}\) Consideration of cumulative impacts in NEPA review was removed in a 2020 Trump administration rule, but CEQ proposed a new rule in 2021 that would once again require it. See National Environmental Policy Act Implementing Regulations Revisions, 86 Fed. Reg. 55,757 (Oct. 7, 2021).


\(^{426}\) CEQ 1997 GUIDANCE, supra note 80, at 3.


\(^{429}\) See Deborah N. Behles, Examining the Air We Breathe: EPA Should Evaluate Cumulative Impacts When It Promulgates National Ambient Air Quality Standards, 20 Pace Env’t L. Rev. 200, 215–17 (2010).

\(^{430}\) EPA has identified higher median blood lead levels among Black children and those living in poverty, compared to economically well-off and white children. See National Ambient Air Quality Standards for Lead, 73 Fed. Reg. 66,964, 66,976 (Nov. 12, 2008). Higher concentrations of particulate matter, according to EPA, also exist in communities with lower income, lower rates of education, and higher percentages of minority populations, and have been linked to “disproportionately high and adverse effects on minority and/or low-income populations.” See National Ambient Air Quality Standards for Particulate Matter, 78 Fed. Reg. 3086, 3125 (Jan. 15, 2013).

\(^{431}\) Cf. CEQ 1997 GUIDANCE, supra note 80, at 9 (“Agencies should consider relevant public health data and industry data concerning the potential for multiple or cumulative exposure to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards, to the extent such information is reasonably available.”).

effects from other nearby projects and facilities. This is relevant particularly for understanding the cumulative effects of the many projects in an already overburdened community: For instance, the aggregate effect of all FERC projects and other industry in an area may lead to pollution levels above the NAAQS for particular communities, further exacerbating already disproportionate adverse health effects. The same is true for other environmental impacts—the new project may cumulatively increase noise pollution, safety hazards, the destruction of greenspaces, and other issues.

FERC should carefully consider such cumulative impacts. This may be a particularly relevant problem for LNG facilities, which are often located in the same area as one another. The Commission can use tools such as EPA’s EJSCREEN interface and other state and local level environmental justice mapping tools to identify cumulative environmental impacts on a project’s affected communities. For instance, information from EPA’s publicly available data has already been used by outside stakeholders to develop detailed maps of cancer-causing industrial air pollution. While not necessarily sufficient alone, these resources, as well as those available to the Commission and provided by public commenters, can help FERC conduct a more robust environmental justice analysis.

F. FERC Should Conduct a Full Environmental Justice Analysis for All Project Alternatives

Despite noting in its guidance for preparing environmental reports that consideration of siting alternatives for aboveground facilities is “especially necessary if specific problems or issues with a new site are identified, such as environmental justice communities,” FERC often conducts little or no analysis of the environmental justice impacts of project alternatives. It should do so for all types of project alternatives. Evaluation of alternatives is crucial to a meaningful analysis that avoids merely concluding that the distributional impacts of the proposed project are acceptable without knowing whether the distributional impacts of an available project alternative are significantly less severe. FERC could improve its analysis by identifying environmental justice communities that would be affected by project alternatives, fully discussing marginal changes in impacts on environmental justice communities as opposed to the preferred alternative, and integrating this analysis into its NGA determination.

---

433 See, e.g., Comments of Public Interest Organizations at 83–87, Certification of New Interstate Natural Gas Facilities, Docket No. PL18-1 (July 25, 2018) (Accession No. 20180725-5183); Sierra Club v. Fed. Energy Reg. Comm’n (Sabal Trail), 867 F.3d 1357, 1369 (D.C. Cir. 2017) (“A letter to FERC from four members of Georgia’s congressional delegation cites the grim statistics: southern Dougherty County has 259 hazardous-waste facilities, 78 air-polluting facilities, 20 toxic-polluting facilities, and 16 water-polluting facilities. The EIS did not mention these existing polluters in its discussion of Dougherty County.”).

434 See supra note 374.

435 See Hackberry Storage Project Draft Environmental Impact Statement at 87, Docket No. CP21-44 (Dec. 2021) (Accession No. 20211217-3000) (recognizing that “other planned or existing industrial projects nearby include the Driftwood LNG Project, Cameron LNG Expansion Project, the [Port Arthur Pipeline Louisiana Connector], Calcasieu Pass LNG, Lake Charles LNG, Commonwealth LNG, and Magnolia LNG in addition to many other petrochemical and manufacturing projects.”).


439 See, e.g., Magnolia LNG EIS, supra note 116, at 3-1 to -36 (containing alternatives discussion with no mention of environmental justice communities); Texas LNG Project Final Environmental Impact Statement at 3-1 to -12, Docket No. CP16-116 (2019) (Accession No. 20190315-3053) (containing alternative siting discussion with no mention of environmental justice communities).

440 See Richard L. Revesz & Samantha P. Yi, Distributional Consequences and Regulatory Analysis, 52 Env’t L. 53, 93 (2022) (“[U]nless the distributional consequences of various alternatives are analyzed, an agency might satisfy itself that its chosen policy is acceptable on distributional grounds without knowing that another alternative would be a great deal better.”).
VI. Recommendations for Programmatic Reform

The prior sections provide recommendations to improve FERC’s and DOE’s assessment of climate and environmental justice impacts in their public interest analyses of individual authorizations. However, there are other avenues for improvement, particularly at DOE, that should occur outside of the administrative process for reviewing specific applications.

A. DOE Should Repeal the Categorical Exclusion Rule

The Department should repeal the Trump Administration’s categorical exclusion rule, discussed above in Section II.B.iii, which creates a procedural avenue for the Department to avoid considering most of the environmental impacts associated with the increased export of LNG, including greenhouse gas emissions. DOE’s attempt to cabin its consideration of potential environmental impacts stands in direct contradiction to federal case law.\(^{441}\) DOE should swiftly repeal this rule.\(^{442}\)

In the interim, DOE should use its discretion to complete an environmental review document. When DOE considers whether to apply the categorical exclusion, it must “consider the specific circumstances associated with the proposed activity, to rule out any extraordinary circumstances that might give rise to significant environmental effects requiring further analysis and documentation in an EA or an EIS.”\(^{443}\) The factors or circumstances considered in such an analysis are often “similar to those used to evaluate intensity for purposes of determining significance” under NEPA.\(^{444}\) Those factors include:

\[
\text{[T]he unique characteristics of the applicable geographic areas, the degree to which effects on the quality of the environment were controversial or the risks were unknown, the degree to which the [categorical exclusions] might establish a precedent for future actions with significant effects or represented a decision in principle about future considerations, the degree to which the actions might affect endangered species, and whether there existed cumulative impacts from other related actions.}^{445}\]

The Department should carefully consider whether any of these factors apply to a specific export authorization, and even where DOE does not find extraordinary circumstances, it should use its discretion to prepare a NEPA analysis “to assist agency planning and decisionmaking.”\(^{446}\)

---

\(^{441}\) See supra Section II.A.3 (summarizing how the court in Sabine Pass and EarthReports explained that the indirect effects of production and consumption "cannot occur unless a greater volume of liquefied natural gas is shipped from the Terminal and enters the international marketplace" and that DOE is the one that authorizes the increase in exports); see also Sierra Club v. Fed. Energy Regul. Comm’n (Sabine Pass), 827 F.3d 59, 68 (D.C. Cir. 2016); EarthReports, Inc. v. Fed. Energy Regul. Comm’n, 828 F.3d 949, 956 (D.C. Cir. 2016).

\(^{442}\) DOE has indicated that it intends to revise the categorical exclusion rule. See OIRA Notice for DOE Categorical Exclusion, supra note 231.


\(^{444}\) Id. at 5.

\(^{445}\) Sierra Club v. Bosworth, 510 F.3d 1016, 1027 (9th Cir. 2007) (citing 40 C.F.R. 1508.27(b) (now repealed)).

\(^{446}\) CEQ CX Guidance, supra note 443, at 3 (citing 40 C.F.R. § 1501.3(b)).
If DOE does apply the categorical exclusion to a specific application, moreover, such an application would be arbitrary and capricious.\textsuperscript{447} DOE’s position justifying the exclusion—that only “marine transport effects” fall within the agency’s purview—is wholly inconsistent with both DOE’s past position and D.C. Circuit case law. By ignoring case law that clearly indicates that DOE is responsible for considering the indirect effects of exports, including upstream and downstream greenhouse gas emissions, the Department failed to consider these entire categories of impacts in assessing whether export authorizations are likely to have significant effects.

DOE also failed to properly assess the significance of its action and document its assertion that LNG export authorizations likely have insignificant impacts. As the Ninth Circuit has explained, agencies must conduct a cumulative impacts analysis for the categorical exclusion at issue “as a whole” and “on a programmatic level,”\textsuperscript{448} particularly “where the categorical exclusion is nationwide in scope.”\textsuperscript{449} Here, however, DOE has “erred in assessing significance by failing to consider the extent to which the impact [of the export] on the environmental was highly controversial and the risks uncertain.”\textsuperscript{450} In particular, given the economic considerations that DOE’s Life Cycle Greenhouse Gas Report overlooks, and the extensive environmental impacts surrounding increases in LNG exports as recognized by the agency’s own Addendum,\textsuperscript{451} a court could well find that there is a “substantial dispute” that “casts serious doubt upon the reasonableness of [the] agency’s conclusions.”\textsuperscript{452}

In sum, DOE’s categorical exclusion rule was riddled with flaws. If DOE relies on that regulation in the future to deny environmental review of an export authorization, that action would likely be deemed arbitrary and capricious. DOE should therefore repeal the categorical exclusion rule, and should not apply the rule while it remains on the books.\textsuperscript{453}

\textbf{B. DOE Should Conduct New Studies on Greenhouse Gas Emissions}

DOE should also update the Life Cycle Greenhouse Gas Report for the lower-48 states. In particular, DOE should expand upon its previous assessment by properly considering substitution impacts and including an evaluation of what LNG exports truly displace, which may include renewables and other clean technologies. While DOE published an update to the report in 2019, that study did not significantly expand or modify the agency’s basic approach of comparing life cycle emissions of U.S. LNG exports to emissions from regional coal and other natural gas imports. DOE relies heavily on this study in waiving away contentions related to its analysis of greenhouse gas emissions, and a new study that undertakes a proper evaluation of LNG exports’ contribution to global emissions could significantly alter the way DOE conducts its public interest analysis.

In particular, \textbf{DOE should carefully consider potential substitution effects}. As discussed above, fundamental economics of supply and demand provide that an increase in the supply of a particular energy resource increases

\textsuperscript{447} See Alaska Ctr. for the Env’t v. U.S. Forest Serv., 189 F.3d 851, 857 (9th Cir. 1999).
\textsuperscript{448} Bosworth, 510 F.3d at 1027–30.
\textsuperscript{449} Id. at 1028.
\textsuperscript{450} Id. at 1030–32.
\textsuperscript{451} See DOE ADDENDUM, supra note 197. As noted above, DOE has recognized the “environmental concerns” documented in the Addendum, but found that rejecting export applications on this basis is “too blunt an instrument to address these environmental concerns efficiently.” Corpus Christi DOE Order No. 3638, supra note 63, at 197.
\textsuperscript{452} Bosworth, 510 F.3d at 1031 (quoting Nat’l Parks & Conservation Ass’n v. Babbitt, 241 F.3d 722, 736 (9th Cir. 2000)).
\textsuperscript{453} This is a live issue before the Department. In its currently pending application to amend its existing authorization to increase its export capacity, Freeport has requested the Department apply the categorical exclusion. See Application for Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Nations, Freeport LNG Expansion, L.P., Docket No. 21-98-LNG (Sept. 10, 2021), https://perma.cc/2ALZ-QYBN. The Department has not yet made a decision.
consumption of that resource, both by increasing total consumption and likely by displacing other energy sources.\textsuperscript{454} Thus, an increase in U.S. LNG exports would increase the use of natural gas, and, depending on substitution that occurs, could increase total greenhouse gas emissions.\textsuperscript{455}

Troublingly, DOE’s recent studies on Alaska LNG exports replicate the same omissions of previous reports.\textsuperscript{456} The study conducted and included with the supplemental EIS cannot be used to reach conclusions about the net climate impact of this project or future export projects because it does not robustly assess how a project may affect fuel consumption and substitution.\textsuperscript{457} DOE should appropriately revise the Alaska LNG study and its methodology in future studies to adequately consider substitution effects.

C. DOE and FERC Should Publish New Guidelines on Public Interest Review

As discussed above, DOE applies its 1984 Guidelines on public interest reviews in reviewing applications for exports to non-FTA nations.\textsuperscript{458} These guidelines were initially written for review of imports, before the statutory presumption that imports serve the public interest was enacted, but DOE has since found them applicable the context of exports.\textsuperscript{459} Since then, commenters have argued that the application of these guidelines was inappropriate in the first place, and that they continue to be woefully outdated.\textsuperscript{460} Commenters have further argued that DOE should initiate a rulemaking process to publish new public interest guidelines for export applications.\textsuperscript{461} DOE should take such action—the guidelines are indeed outdated, and new guidance on how DOE will undertake its public interest review would provide transparency.

In particular, DOE should provide clarity by describing how it will assess the public interest and laying out a set of factors that it will consider. This list does not need to be exhaustive, but DOE should provide more insight into what reoccurring factors it considers relevant to the public interest. It should also provide guidance on how it will weigh competing factors, including environmental factors.

\textsuperscript{454} See supra Section III.B.3.
\textsuperscript{455} See Gilbert & Sovacool, supra note 295, at 1679.
\textsuperscript{456} See generally Draft Supplemental Environmental Impact Statement, App. B, Alaska LNG Project, Docket No. 14-96-LNG (July 2022) (North Slope Production Study). The studies were conducted after DOE granted rehearing on the export application and “commission[ed] a life cycle analysis to calculate the life cycle GHG emissions for LNG exported from Alaska by vessel to the import markets in Asia (the markets targeted for export from Alaska) and potentially other regions” and to “examine[] ‘upstream’ impacts associated with any incremental natural gas production on the North Slope of Alaska due to exports of LNG.” Alaska LNG Project, LLC, Order No. 3643-B, Docket No. 14-96-LNG, Order on Rehearing, at 13–14 (Apr. 16, 2021).
\textsuperscript{458} See supra Section I.B.1.
\textsuperscript{459} See, e.g., Phillips Alaska DOE Order No. 1473, supra note 61, at 14 (“While those guidelines deal specifically with imports, the principles are applicable to exports as well.”).
The Commission, too, should consider issuing guidance analogous to its Draft Updated Certificate Policy Statement for Section 7. FERC has crafted several iterations of guidance on how it will evaluate the public convenience and necessity under Section 7, but has not done the same under Section 3. Given that the Commission is more routinely being asked to evaluate Section 3 applications, it may be the right time to provide more detailed guidance on how these projects will be evaluated. In some instances, such as for environmental justice impacts, the policy statement might be a useful reference point. The Commission’s obligations in assessing direct impacts are similar under Section 7 and Section 3, and the localized impacts on environmental justice communities are likely to be similar as well. FERC has taken the first step of issuing guidance on consideration of GHG emissions from Section 3 projects, but should provide more detail on how it will evaluate whether LNG terminals are inconsistent with the public interest.

D. DOE and FERC Should Consider Revisiting Prior Authorizations—Particularly for Long-Term Export

While the recommendations in this report are generally directed at new LNG applications, they could also be relevant to past DOE and FERC authorizations of LNG exports and LNG terminals. Specifically, DOE and FERC should consider reopening and evaluating whether it is appropriate to modify or rescind prior authorizations based on findings from more robust climate impacts and environmental justice analyses.

The NGA provides that DOE and FERC have the authority to “rescind such orders, rules, and regulations as [they] may find necessary or appropriate.”462 In addition, DOE may, after opportunity for hearing and good cause shown, make “such supplemental order[s] . . . as it may find necessary or appropriate” with regards to export authorizations.463 DOE has sua sponte rescinded only one LNG authorization and did so due to prolonged inactivity on the applicant’s part rather than substantive objections to the project.464 But the Department has also previously stated that “[i]n the event of any unforeseen developments of such significant consequence as to put the public interest at risk, DOE/FE is fully authorized to take action as necessary to protect the public interest.”465 Revocations would be subject to established limits on agency’s power to reconsider a prior adjudicative determination, including considerations of timeliness and reliance.466

In particular, authorizations for long-term export—which can have substantial environmental consequences but potentially limited benefit as countries transition to renewable energy467—present a good candidate for reconsideration. For instance, DOE has recently extended several export authorizations out to 2050 (from an initial 20-year grant),468 and rescinding those extensions would reduce fossil-fuel lock-in without jeopardizing substantial reliance interests. DOE may also wish to consider further restricting LNG export authorizations temporally or geographically to specific nations, particularly if the continued development of renewable energy undercuts the alleged need to export natural gas.

463 Id. § 717b(a). FERC is also authorized to make modifications or apply terms and conditions to its Section 3 authorizations. Id. § 717b(e)(3) (A).
465 Sabine Pass DOE Conditional Order No. 2961, supra note 41, at 33 n.45 (reiterated in Eagle LNG Partners Jacksonville II LLC, Order No. 4078, Docket No. 17-79-LNG, Opinion and Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas in ISO Containers Loaded at the Eagle Maxville Facility in Jacksonville, Florida, and Exported by Vessel to Free Trade Agreement and Non-Free Trade Agreement Nations, at 33 n.98 (Sept. 15, 2017)).
466 See Daniel Bress, Administrative Reconsideration, 91 Va. L. Rev. 1737, 1756–69 (2005) (detailing case law suggesting circumstances under which courts have been unwilling to allow agencies the power to reconsider).
467 Restricting authorizations temporally preserves option value, which refers to the value of delaying a future decision to await additional information. Option value has long been considered by agencies, courts, and economists to be a relevant factor for fossil-fuel management decisions. See, e.g., Ctr. for Sustainable Econ. v. Jewell, 779 F.3d 588, 610 (D.C. Cir. 2015).
468 See supra note 218.
Conclusion

Both DOE and FERC have broad authority to consider the public interest in LNG-related authorizations, but have regularly given insufficient attention to environmental concerns including impacts on climate change and environmental justice. Given these considerable shortcomings, there is substantial room for improvement at both agencies. Both DOE and FERC should reform existing methodologies and procedures to ensure that climate and environmental justice effects receive appropriate consideration and are reasonably balanced against economic and strategic factors.
# LNG Exports to Non-Free Trade Agreement Countries

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Facility Status</th>
<th>Total Approved Export Capacity - NFTA (bcf/d)</th>
<th>DOE/FE Docket No.</th>
<th>FERC Docket No.</th>
<th>Relevant DOE Orders/Notices/Documents</th>
<th>Relevant FERC Orders/Notices/Documents</th>
<th>Related Litigation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Order on Rehearing, Order No. 3643-B (Apr. 15, 2021)</td>
<td>Rehearing Order, 172 FERC ¶ 61,214 (Sept. 11, 2020)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DSEIS (July 2022)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rehearing Order, 170 FERC ¶ 61,140 (Feb. 1, 2020)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Vacating Order, 175 FERC ¶ 61,030 (Apr. 15, 2021)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rehearing Order, 151 FERC ¶ 61,098 (May 6, 2015)</td>
<td></td>
</tr>
<tr>
<td>Cheniere Marketing &amp; Corpus Christi (Trains 1-3)</td>
<td></td>
<td>0.3</td>
<td>19-124-LNG</td>
<td>CP19-514 (S.3)</td>
<td>Final Order, Order No. 4799 (Mar. 16, 2022)</td>
<td>Order Amending Authorization, 177 FERC ¶ 61,029 (Oct. 21, 2021)</td>
<td></td>
</tr>
<tr>
<td>Facility Name</td>
<td>Facility Status</td>
<td>Total Approved Export Capacity - NFTA (bcf/d)</td>
<td>DOE/FE Docket No.</td>
<td>FERC Docket No.</td>
<td>Relevant DOE Orders/ Notices/Documents</td>
<td>Relevant FERC Orders/ Notices/Documents</td>
<td>Related Litigation</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------</td>
<td>-----------------------------------------------</td>
<td>-------------------</td>
<td>----------------</td>
<td>----------------------------------------</td>
<td>----------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Facility Name</td>
<td>Facility Status</td>
<td>Total Approved Export Capacity - NFTA (bcf/d)</td>
<td>DOE/FE Docket No.</td>
<td>FERC Docket No.</td>
<td>Relevant DOE Orders/ Notices/Documents</td>
<td>Relevant FERC Orders/ Notices/Documents</td>
<td>Related Litigation</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------</td>
<td>-----------------------------------------------</td>
<td>-------------------</td>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Dominion Cove Point LNG       | Operational              | 0.82                                          | 11-128-LNG        | CP13-113 (S.3 + 7) | Conditional Order, Order No. 3331 (Sept. 11, 2013)  
Final Order, Order No. 3331-A (May 7, 2015)  
FONSI (Nov. 5, 2014)                               | EA (May 2014)  
EarthReports v. FERC, 828 F.3d 949 (D.C. Cir. 2016) |
| Driftwood LNG                 | Approved, Under Construction | 3.88                                         | 16-144-LNG        | CP17-117 (S.3)  
| Exxon-Golden Pass LNG         | Approved, Under Construction | 2.57                                         | 12-156-LNG        | CP14-517 (S.3)  
CP14-518 (S.7)  
CP20-459 (modify) | Final Order, Order No. 3978 (Apr. 25, 2017)  
Order Denying Rehearing, Order No. 3978-A (March 30, 2018)  
Order Amending Authorization, 174 FERC ¶ 61,053 (Jan. 19, 2021) |                                                                   |
| Freeport LNG (Trains 1)       | Operational              | 1.4                                           | 10-161-LNG        | CP12-509 (S.3)  
CP12-29 (modify) | Conditional Order, Order No. 3282 (May 17, 2013)  
Rehearing Order, 149 FERC 61,119 (Nov. 13, 2014) | Sierra Club v. FERC, 827 F.3d 36 (D.C. Cir. 2016) |
| Freeport LNG (Trains 1-3)     |                         | 0.4                                           | 11-161-LNG        | CP12-509 (S.3)  
CP12-29 (modify) | Conditional Order, Order No. 3357 (Nov. 15, 2013)  
Final Order, Order No. 3357-B (Nov. 14, 2014) | No change to FERC facility | Sierra Club v. DOE, 867 F.3d 189 (D.C. Cir. 2017) |
<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Facility Status</th>
<th>Total Approved Export Capacity - NFTA (bcf/d)</th>
<th>DOE/FE Docket No.</th>
<th>FERC Docket No.</th>
<th>Relevant DOE Orders/Notices/Documents</th>
<th>Relevant FERC Orders/Notices/Documents</th>
<th>Related Litigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Charles LNG Export Co.</td>
<td></td>
<td>13-04-LNG</td>
<td>Same</td>
<td>Same</td>
<td>Final Order, Order No. 3868 (July 29, 2016)</td>
<td>No change to FERC facility</td>
<td></td>
</tr>
<tr>
<td>Facility Name</td>
<td>Facility Status</td>
<td>Total Approved Export Capacity - NFTA (bcf/d)</td>
<td>DOE/FE Docket No.</td>
<td>FERC Docket No.</td>
<td>Relevant DOE Orders/ Notices/Documents</td>
<td>Relevant FERC Orders/ Notices/Documents</td>
<td>Related Litigation</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>-------------------</td>
<td>-----------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Lake Charles Exports</td>
<td></td>
<td>0.33</td>
<td>16-110-LNG</td>
<td>N/A</td>
<td>Final Order, Order No. 4011 (June 29, 2017)</td>
<td>No change to FERC facility</td>
<td></td>
</tr>
<tr>
<td>Lake Charles LNG Export Co.</td>
<td></td>
<td></td>
<td>16-109-LNG</td>
<td>N/A</td>
<td>Final Order, Order No. 4010 (June 29, 2017)</td>
<td>No change to FERC facility</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Order Amending Authorization, Order No. 3909-C (Apr. 27, 2022)</td>
<td>SEIS (Jan. 2020)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Order Amending Authorization, 171 FERC ¶ 61,231 (June 18, 2020)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CP17-21 (S.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility Name</td>
<td>Facility Status</td>
<td>Total Approved Export Capacity - NFTA (bcf/d)</td>
<td>DOE/FE Docket No.</td>
<td>FERC Docket No.</td>
<td>Relevant DOE Orders/ Notices/Documents</td>
<td>Relevant FERC Orders/ Notices/Documents</td>
<td>Related Litigation</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------</td>
<td>---------------------------------------------</td>
<td>-------------------</td>
<td>----------------</td>
<td>----------------------------------------</td>
<td>------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sempra-Cameron LNG (Trains 1-3)</td>
<td>Approved Project, Not Under Construction</td>
<td>0.42</td>
<td>15-67-LNG</td>
<td>N/A</td>
<td>Final Order, Order No. 3797 (Mar. 18, 2016) (CX applied)</td>
<td>No change to FERC facility</td>
<td></td>
</tr>
<tr>
<td>Facility Name</td>
<td>Facility Status</td>
<td>Total Approved Export Capacity - NFTA (bcf/d)</td>
<td>DOE/FE Docket No.</td>
<td>FERC Docket No.</td>
<td>Relevant DOE Orders/Notices/Documents</td>
<td>Relevant FERC Orders/Notices/Documents</td>
<td>Related Litigation</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------</td>
<td>-----------------------------------------------</td>
<td>------------------------------------------</td>
<td>-----------------</td>
<td>---------------------------------------</td>
<td>----------------------------------------</td>
<td>-------------------</td>
</tr>
</tbody>
</table>

*Indicates a project that has had its authorization order remanded by a court*