

UNITED STATES OF AMERICA  
DEPARTMENT OF ENERGY  
OFFICE OF FOSSIL ENERGY

IN THE MATTER OF )  
 )  
Mexico Pacific Limited, LLC ) FE Docket No. 22-167-LNG  
 )

**Motion to Intervene and Protest of Sierra Club**

In the above-captioned docket, Mexico Pacific Limited, LLC (“MPL”) requests long-term, multi-contract authorization to export domestically-produced natural gas from the United States to Mexico and, after liquefaction in Mexico, to re-export. The application requests authorization to export a total of 425.57 Bcf/year of gas to Mexico; of which, up to 291.22 Bcf/year would be exported to non-free-trade agreement (“non-FTA”) countries. Sierra Club moves to intervene in this docket and protests this application, pursuant to 10 C.F.R. §§ 590.303(b) and § 590.304.

**I. Intervention**

The Department of Energy’s (“DOE”) rules do not articulate any particular standard for timely intervention, and as such, intervention should be granted liberally. DOE merely requires would-be-intervenors to set out the “facts upon which [their] claim of interest is based” and “the position taken by the movant.” 10 C.F.R. § 590.303(b)-(c). As explained in the following section, Sierra Club’s position is that the application should be denied. Sierra Club’s interests are based on the impact the proposed additional exports will have on its members and mission.

The requested exports will harm Sierra Club members by increasing the prices they pay for energy, including both gas and electricity. As DOE and the Energy Information

Administration have previously explained, each marginal increase in export volumes is also expected to further increase domestic energy prices.

The proposed exports will further harm Sierra Club members by increasing gas production and associated air pollution, including (but not limited to) emission of greenhouse gases and ozone precursors. As DOE has recognized, increasing exports of liquefied natural gas (“LNG”) will increase gas production,<sup>1</sup> and increasing gas production increases ozone pollution, including risking creation of new or expanded ozone non-attainment areas or exacerbating existing non-attainment.<sup>2</sup> Sierra Club has many members throughout the southwest, including within the Permian Basin region and other areas that will likely be impacted by increased gas production.

Furthermore, increasing LNG exports will impact Sierra Club and its members because of the additional greenhouse gases emitted throughout the LNG lifecycle, from production, transportation, liquefaction, and end use. The impacts from climate change are already harming Sierra Club members in numerous ways. Coastal property owners risk losing property to sea level rise. Extreme weather events, including flooding and heat waves, impact members’ health, recreation, and livelihoods. Increased frequency and severity of wildfires emit smoke that impacts members’ health, harms ecosystems members depend upon, and threatens members’

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<sup>1</sup> See, e.g., U.S. EIA, Effect of Increased Levels of Liquefied Natural Gas Exports on U.S. Energy Markets (Oct. 2014) at 12, *available at* <https://www.eia.gov/analysis/requests/fe/pdf/lng.pdf> (explaining that “[n]atural gas markets in the United States balance in response to increased LNG exports mainly through increased natural gas production,” and “[a]cross the different export scenarios and baselines, higher natural gas production satisfies about 61% to 84% of the increase in natural gas demand from LNG exports,” with “about three-quarters of this increased production [coming] from shale sources.”) (attached).

<sup>2</sup> U.S. DOE, Final Addendum to Environmental Review Documents Concerning Exports of Natural Gas from the United States (Aug. 2014) at 27-32, *available at* <https://www.energy.gov/sites/prod/files/2014/08/f18/Addendum.pdf>. (attached).

homes. Proposals such as this one, that encourage long-term use of carbon-intensive fossil fuels will increase and prolong greenhouse gas emissions, increasing the severity of climate change and thus of these harms.

In summary, the proposed natural gas export and LNG re-export will harm Sierra Club its members in numerous ways. Sierra Club accordingly contends that the application should be denied.

Pursuant to 10 C.F.R. § 590.303(d), Sierra Club identifies the following person for the official service list:

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## **II. Protest**

Under the Natural Gas Act, DOE oversees the export of gas as a commodity into the global market.<sup>3</sup> DOE *must* grant applications to export LNG to the 20 countries with which the United States has a free trade agreement, but DOE cannot authorize exports to *non*-free trade agreement countries where such exports would be “[in]consistent with the public interest.” 15

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<sup>3</sup> Regulation of LNG exports is divided between the Federal Energy Regulatory Commission (“FERC”), which oversees the construction and operation of LNG export terminals, and DOE, which, as noted, oversees the export of gas as a commodity into the global market. 15 U.S.C. § 717.

U.S.C. § 717b(a). The requested for authorization to export natural gas for re-export should be denied because it is contrary to the public interest. 15 U.S.C. § 717b(a).

**A. DOE Should Consider a Broad Range of Issues in Making its Public Interest Determination**

The Natural Gas Act (“NGA”) does not explicitly define what is or is not “consistent with the public interest” in the export context, and DOE has never issued guidelines or regulations explaining how it will make “public interest” determinations.<sup>4</sup>

In undertaking “public interest” determinations in the gas export context, DOE has purported to consider “a range of factors,” including “the domestic need for the natural gas proposed to be exported; whether the proposed exports pose a threat to the security of domestic natural gas supplies; . . . whether the arrangement is consistent with [the Department’s] policy of promoting competition in the marketplace,” and any other factors bearing on the public interest.<sup>5</sup> DOE has also explained, “when reviewing an application for export authorization,” DOE evaluates “economic impacts, international impacts, security of natural gas supply, and environmental impacts, among others.”<sup>6</sup> As set forth below, a broad application of these factors to MPL make clear that the project is not in the public interest.

With past projects, however, DOE has repeatedly issued ad-hoc and inadequate “public interest” analyses that have failed to meaningfully consider highly pertinent factors like the environmental impacts of the actual export terminals themselves, the climate change-related

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<sup>4</sup> *Id.*

<sup>5</sup> *Sabine Pass Liquefaction, LLC*, DOE/FE Order No. 2961, 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 27-29, Docket No. 10-111-LNG (May 20, 2011).

<sup>6</sup> DOE/FE Order No. 3357-B (Freeport LNG), at 9 (Nov. 14, 2014), *available at* <https://www.energy.gov/sites/prod/files/2014/11/f19/ord%203357-B.pdf>.

impacts associated with the extraction, refinement, transportation, and ultimate combustion of the gas being exported, and the effect of increased gas exports on the price of domestic gas for low-income ratepayers.

Furthermore, DOE's ad-hoc determinations for previous projects have ignored key factors that plainly impact the public interest, namely the environmental impacts of the actual export terminals themselves, the climate change-related impacts associated with LNG exports, and the effect of increased gas exports on the price of domestic gas for low-income ratepayers. In addition to the public health and climate impacts associated with LNG export infrastructure, for example, increased gas exports also harm low-income energy customers by raising the price of domestic gas.<sup>7</sup> These economic harms disproportionately fall on communities of color and low-income households, which face dramatically higher energy burdens—spending a greater portion of their income on energy bills—than the average household, and on energy-intensive industries and public gas utilities that purchase a disproportionate share of the nation's gas supply.<sup>8</sup> DOE has refused to consider these disproportionate economic impacts in its “public interest” determinations.<sup>9</sup> Instead, the agency has obstinately and arbitrarily asserted that export opponents have failed to demonstrate that the economic equity impacts of LNG exports are

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<sup>7</sup> See, e.g., Clark Williams-Derry, *IEEFA U.S.: Booming U.S. natural gas exports fuel high prices*, INSTITUTE FOR ENERGY ECONOMICS AND FINANCIAL ANALYSIS, Nov. 4, 2021, <https://ieefa.org/resources/ieefa-us-booming-us-natural-gas-exports-fuel-high-prices>. (attached).

<sup>8</sup> See Nat'l Conf. of State Legislatures, *Energy Justice and the Energy Transition*, <https://www.ncsl.org/energy/energy-justice-and-the-energy-transition> (last updated May 3, 2022). (attached).

<sup>9</sup> DOE has argued that it is FERC's responsibility to fully balance the environmental harms associated with LNG exports. See, e.g., *Magnolia LNG LLC*, DOE/FE Order No. 3909-C at 24-26. Notably, FERC has done the same thing, and avoided a full balancing of these environmental harms by pointing to DOE. See, e.g., *Commonwealth LNG, LLC*, 181 FERC ¶ 61,143 (Nov. 17, 2022). (attached).

substantial enough to warrant the agency's attention.<sup>10</sup> DOE should evaluate these impacts when evaluating whether MPL is in the public interest.

DOE has never provided any discussion regarding how it balances the public interest factors it does consider. In practice, the agency consistently considers impacts like the balance of trade, purported job creation, global strategic concerns (including diversifying other nations' energy supplies), and other issues not enumerated in its purported list of factors. *See, e.g., Magnolia LNG LLC*, DOE/FE Order No. 3909-C, Order Amending Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Nations, at 24-26, Docket No. 13-132-LNG (Apr. 27, 2022) (emphasizing job creation, global strategic concerns, and balance of trade as key considerations in the public interest determination). And in some cases, the agency has changed its mind about whether to even consider some factors, despite claiming that they are critical to its analysis in other contexts.<sup>11</sup>

In 2013, Sierra Club and several other environmental organizations submitted a Petition<sup>12</sup> to DOE requesting the agency issue rules outlining how it will decide whether proposed exports of LNG are "consistent with the public interest," pursuant to section 3(a) of the NGA. 15 U.S.C. § 717b(a). It has been nearly ten years since Petitioners submitted their Petition with DOE, and the agency has yet to respond, despite the massive increase in LNG export application approvals.

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<sup>10</sup> *See, e.g., Magnolia LNG LLC*, DOE/FE Order No. 3909-C at 49 (citing *Sierra Club v. U.S. Dep't of Energy*, 703 F. App'x 1, 3 (D.C. Cir. 2017)).

<sup>11</sup> Compare Statement of Deputy Assistant Secretary Christopher Smith Before the Committee on Energy and Natural Resources, U.S. Senate, *The Department of Energy's Role in Liquefied Natural Gas Export Applications* at 4 (Nov. 8, 2011) (including "consistency with DOE's long-standing policy of promoting competition in the marketplace," "U.S. balance of trade," and impacts on industry as key factors to consider) with Statement of Deputy Assistant Secretary Christopher Smith Before the Oversight and Government Reform Committee, U.S. House of Representatives, *The Department of Energy's Program Regulating Liquefied Natural Gas Export Applications* at 3 (Mar. 19, 2013) (omitting those factors as key issues to consider).

<sup>12</sup> A copy of this Petition is attached as an exhibit. (attached).

DOE has approved more than 40 non-free trade agreement LNG export applications since Petitioners sent DOE their 2013 petition, facilitating a massive proliferation of dangerous gas export infrastructure along the Gulf Coast and elsewhere throughout the country.<sup>13</sup> Nevertheless, the agency has failed to issue any rules defining how it will make “public interest” determinations in the gas export context, or to respond to the 2013 petition. With many more export applications now pending under DOE review, the need for consistent rules defining how the agency will make “public interest” determinations is as pressing as ever.

As such, after almost a decade without a response from DEO, Sierra Club filed a Petition for Writ of Mandamus on March 13, 2023, seeking an order directing DOE to grant or deny the 2013 petition<sup>14</sup>. The DOE should hold the MPL application in abeyance, as well as any other pending gas export applications, until the DOE completes a rulemaking process that sets forth criteria for its public interest determinations.

## **B. The MPL Project will Impact Domestic Energy Prices and Supply**

DOE has historically given particular emphasis to “the domestic need for the natural gas proposed to be exported” and “whether the proposed exports pose a threat to the security of domestic natural gas supplies.”<sup>15</sup> As recent data shows, exports are increasingly linking domestic

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<sup>13</sup> Although FERC authorizes the export terminals, as a practical matter, many of the facilities FERC has approved have waited to begin construction until *after* they obtained export authorizations from DOE. *See, e.g.,* Callum O’Reilly, *Cameron LNG sponsors finalise FID*, LNG INDUSTRY, (Aug. 7, 2014), <https://www.lngindustry.com/liquefaction/07082014/cameron-lng-sponsors-finalise-fid-1161/> (noting that the developers of the Cameron LNG facility waited until after they obtained authorization from DOE for exports to none-free-trade countries before making a final investment decision).

<sup>14</sup> Sierra Club et al., *Petition for Writ of Mandamus, United States Court of Appeals for the District of Columbia Circuit* (March 13, 2023) (attached).

<sup>15</sup> DOE/FE Order No. 3357-B at 10; 85 Fed. Reg. at 52,243 (“In evaluating the public interest, DOE takes seriously the potential economic impacts of higher natural gas prices.”).

gas prices to prices in the global market, resulting in higher costs for American consumers.

These increases harm American households and energy intensive industry.

**a. The Freeport LNG explosion further affirms that the MPL project will increase domestic gas prices, harming customers.**

A 2022 explosion and fire at the Freeport LNG facility—which took a significant fraction of U.S. export capacity offline, which in turn produced a rapid and dramatic drop in domestic gas prices—provided stark confirmation that increasing LNG exports will cause real and significant increases in domestic gas prices. Thus, the Freeport LNG explosion demonstrates that the requested export authorization is not in the public interest.

On June 8, 2022, an explosion and fire at the Freeport LNG facility caused an immediate shut down of operations.<sup>16</sup> Fortunately, no one was injured during the incident, but the initial report by the Pipeline and Hazardous Materials Safety Administration (PHMSA) concluded that “[c]ontinued operation of Freeport’s LNG export facility without corrective measures may pose an integrity risk to public safety, property or the environment.”<sup>17</sup> For these reasons, Sierra Club and over 130 other organizations recently sent a letter asking President Biden, among other things, to “[d]irect DOE to find gas exports not in the public interest due to their climate and safety repercussions and to stop approving new applications.”<sup>18</sup> Preliminary findings point to

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<sup>16</sup> U.S. Energy Information Administration, Fire Causes Shutdown of Freeport Liquefied Natural Gas Export Terminal (June 23, 2022), <https://www.eia.gov/todayinenergy/detail.php?id=52859> [hereinafter “EIA, Freeport Fire”] (attached).

<sup>17</sup> Gary McWilliams, U.S. Regulator Bars Freeport LNG Plant Restart Over Safety Concerns, REUTERS (July 1, 2022), [https://www.reuters.com/business/energy/us-regulator-finds-unsafe-conditions-freeport-lng-export-facility-bars-restart-2022-06-30/#:~:text=HOUSTON%2C%20June%2030%20\(Reuters\),an%20outside%20analysis%20is%20complete](https://www.reuters.com/business/energy/us-regulator-finds-unsafe-conditions-freeport-lng-export-facility-bars-restart-2022-06-30/#:~:text=HOUSTON%2C%20June%2030%20(Reuters),an%20outside%20analysis%20is%20complete) [hereinafter “U.S. Regulator Bars Freeport LNG Plant Restart”] (attached).

<sup>18</sup> Coalition letter to Biden on Freeport explosion, June 23, 2022 (attached).



“excess pressure in an LNG transfer pipeline that moves LNG from the facility’s storage tank to the terminal’s dock facilities” as the source of the fire.<sup>19</sup>

Most relevant here, the Freeport explosion demonstrates a clear and significant connection between LNG exports and domestic gas prices. The EIA has estimated that the Freeport shutdown took roughly 17% (or 2 billion cubic feet per day) of the total U.S. LNG export capacity offline.<sup>20</sup> Immediately after the explosion was reported, domestic gas prices fell by 16 percent,<sup>21</sup> highlighting the direct connection between gas exports and domestic prices and supply. Despite this drop, domestic gas prices are now once again exceptionally high as a result of increasing LNG exports, as discussed in the next section. DOE must address the Freeport LNG explosion, and the demonstrated connection between LNG exports and domestic prices, in its public interest analysis.

**b. High gas prices from the last two winters demonstrate that LNG exports are harming US consumers.**

The price impacts of LNG exports are harming Americans *now*. Wholesale gas prices for the winter of 2021-2022 were vastly higher than for the prior winter, and FERC concluded that the increase was driven largely by competition with demand for LNG exports.<sup>22</sup> The Wall Street

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<sup>19</sup> EIA, Freeport Fire, *supra* note 6.

<sup>20</sup> EIA, Freeport Fire, *supra* note 6.

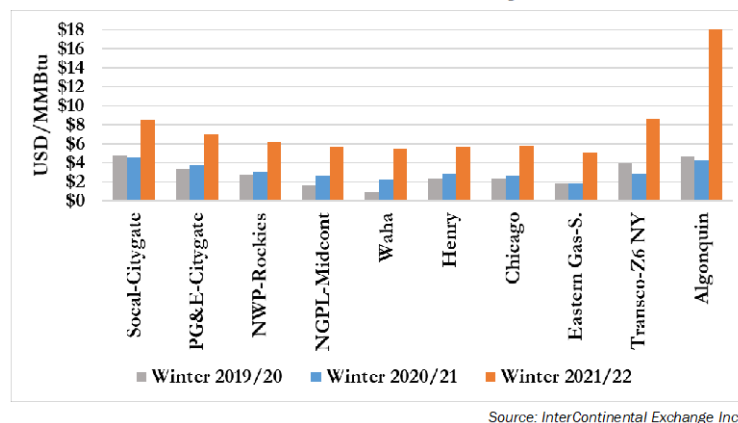
<sup>21</sup> Pippa Stevens, Natural Gas Plummets as Freeport Delays Facility Restart Following Explosion, CNBC (June 14, 2022), <https://www.cnbc.com/2022/06/14/natural-gas-plummets-as-freeport-delays-facility-restart-following-explosion.html> (attached).

<sup>22</sup> FERC, Winter Energy Market and Reliability Assessment (Oct. 21, 2021) at 2, *available at* <https://ferc.gov/sites/default/files/2021-10/Winter%20Assessment%202021-2022%20-%20Report.pdf> (attached); *accord id. at 11*. See also Clark Williams-Derry, IEEFA U.S.: Booming U.S. natural gas exports fuel high prices, IEEFA.ORG (Nov. 4, 2021), <https://ieefa.org/ieefa-u-s-declining-demand-lower-supply-dont-explain-rapidly-rising-gas-prices/> (attached).

Journal,<sup>23</sup> S&P Global Platts Analytics,<sup>24</sup> the Institute for Energy Economics and Financial Analysis, and others agreed that LNG exports were driving up domestic gas prices. Indeed, FERC identified LNG exports as the “primar[y]” source of the additional demand that drove recent gas price increases.<sup>25</sup> And these price increases are severe. For the winter of 2021-2022, benchmark futures prices at the Henry Hub increased 103% relative to the prior winter,<sup>26</sup> with larger increases elsewhere, including more than quadrupling of the price at the Algonquin Citygate outside Boston,<sup>27</sup> as illustrated in this chart from FERC:<sup>28</sup>

## Winter Futures Prices Increased at Nearly Every Major U.S. Trading Hub

Average U.S. Natural Gas Futures Prices Across Major Hubs for November - February



<sup>23</sup> Collin Eaton & Katherine Blunt, Natural-Gas Exports Lift Prices for U.S. Utilities Ahead of Winter, WALL ST. J., Nov. 7, 2021, <https://www.wsj.com/articles/natural-gas-exports-lift-prices-for-u-s-utilities-ahead-of-winter-11636281000> (attached).

<sup>24</sup> Kelsey Hallahan, Henry Hub could reach \$12-\$14 this winter as capital discipline limits supply growth: Platts Analytics, S&P GLOBAL PLATTS, Oct. 14, 2021, <https://www.spglobal.com/platts/en/market-insights/latest-news/natural-gas/101421-henry-hub-could-reach-12-14-this-winter-as-capital-discipline-limits-supply-growth-platts-analytics> (attached).

<sup>25</sup> FERC, Winter Energy Market and Reliability Report, *supra* note 22 at 2.

<sup>26</sup> *Id.* at 2, 11.

<sup>27</sup> *Id.* at 12.

<sup>28</sup> FERC, Winter Energy Market and Reliability Report, *supra* note \_\_ at 10.

These price increases harm both households and industrial energy consumers. The U.S. Energy Information Administration (“EIA”) predicted that homes that use gas for heat would spend 30% more in the winter of 2021-2022 than they spent the prior winter.<sup>29</sup> The Industrial Energy Consumers of America, which represents manufacturers that use at least 1 million MMBtu of energy per year,<sup>30</sup> has repeatedly written to DOE about how export-driven gas prices increases are harming domestic industry.<sup>31</sup> From an economic perspective, LNG exports are simply making most Americans worse off: nearly all Americans must pay energy bills, but few own shares (even indirectly, through pension plans and the like) in the gas companies that are benefiting from high gas prices and LNG sales.<sup>32</sup> DOE is charged with protecting the “public” interest, 15 U.S.C. § 717b(a); that is, the interest “of ... all or most of the people” in the United States. *Public*, Merriam-Webster Unabridged Dictionary.<sup>33</sup> DOE has previously recognized that “the distributional consequences of an authorizing decision” may be so negative as to demonstrate inconsistency with the public interest despite “net positive benefits to the U.S. economy as a whole.”<sup>34</sup> Accordingly, unless DOE addresses distributional concerns, DOE will have failed to consider an important part of the problem. But to date, DOE has never grappled

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<sup>29</sup> *Id.*

<sup>30</sup> “Membership Info,” IECA, <https://www.ieca-us.com/membership-info/> (last accessed Nov. 22, 2022). (attached).

<sup>31</sup> *See, e.g.*, Letter from Paul N. Cicio to Jennifer Granholm (Nov. 22, 2021), *available at* [https://www.ieca-us.com/wp-content/uploads/11.22.21\\_LNG\\_Why-a-Safety-Valve-is-Needed\\_FINAL.pdf](https://www.ieca-us.com/wp-content/uploads/11.22.21_LNG_Why-a-Safety-Valve-is-Needed_FINAL.pdf). (attached).

<sup>32</sup> Synapse Energy Economics, Inc., *Will LNG Exports Benefit the United States Economy?* (Jan. 23, 2013) at 9, *available at* [https://fossil.energy.gov/ng\\_regulation/sites/default/files/programs/gasregulation/authorizations/export\\_study/Exhibits\\_1-20.pdf](https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/Exhibits_1-20.pdf) (attached) (Initially submitted as Exhibit 5 to Comments of Sierra Club *et al.* on the 2012 NERA macroeconomic report). (attached).

<sup>33</sup> <http://www.merriam-webster.com/dictionary/public> (last visited Dec. 7, 2021).

<sup>34</sup> DOE/FE Order 3638-A (Corpus Christi) at 45 (May 26, 2016), *available at* [https://fossil.energy.gov/ng\\_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/12-97-LNG\\_CMI\\_Corpus\\_Rehearing\\_May\\_26.pdf](https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/12-97-LNG_CMI_Corpus_Rehearing_May_26.pdf)

with the distributional impacts of LNG exports: DOE has acknowledged that LNG exports have some positive and some negative economic impacts,<sup>35</sup> but DOE has not addressed the fact that those who suffer the harms are not the same as those who enjoy the benefits, or that the former are more numerous and generally less advantaged than the latter. In particular, research shows that low-income, Black, Hispanic, and Native American households all face dramatically higher energy burdens—spending a greater portion of their income on energy bills—than the average household.<sup>36</sup> Increased gas prices will exacerbate the existing energy burden disparities, placing these households at even further risk. Especially in light of this administration’s emphasis on environmental justice, the distributional and equity impacts of export-driven gas price increases require careful consideration.

High gas costs continued into the winter of 2022-23. In October of 2022, FERC released its Winter Energy Market and Reliability Assessment for the winter of 2022-2023.<sup>37</sup> Again, FERC predicted a continued rise in domestic gas prices, due largely to increases in exports:

Futures prices indicate higher natural gas prices for winter 2022-2023 as compared to last winter at major trading hubs across the U.S. Even though total natural gas demand is expected to increase at a slower pace than natural gas production growth this winter, the continued growth in net exports and reduced natural gas storage inventories are expected to place additional upward pressure on natural gas prices this winter.

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Futures prices reflect higher natural gas prices, which are expected to translate into higher electricity prices through increased electricity production costs.

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<sup>35</sup> See, e.g., NERA Economic Consulting, *Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Exports* (June 7, 2018) at 19, 21, 64, 67, available at <https://cms.doe.gov/sites/prod/files/2018/12/f58/2018%20Study.pdf>.

<sup>36</sup> American Council for an Energy-Efficient Economy, *How High are Household Energy Burdens?* (Sept. 2020), available at <https://www.aceee.org/sites/default/files/pdfs/u2006.pdf> (attached). Accord Eva Lyubich, *The Race Gap in Residential Energy Expenditures* (June 2020), available at <https://haas.berkeley.edu/wp-content/uploads/WP306.pdf> (attached).

<sup>37</sup> FERC Winter Energy Market and Reliability Assessment 2022-2023, at 4 (October 25, 2022), available at <https://ferc.gov/media/report-2022-2023-winter-assessment>

...

Domestic and international factors ... are expected to drive U.S. natural gas prices higher throughout winter 2022-2023. Domestically, EIA forecasts predict that natural gas production will increase 3.2% above winter 2021-2022 levels, from 96.0 Bcfd in winter 2021-2022 to 99.1 Bcfd in winter 2022-2023. ... However, EIA predicts natural gas exports will increase at a much higher pace than domestic natural gas demand in winter 2022-2023, primarily due to an increase in LNG liquefaction capacity. Net natural gas exports, including LNG and via pipeline, are forecast to increase by 24.3%, from an average of 10.8 Bcfd in winter 2021-2022 to an average of 13.4 Bcfd in winter 2022-2023.<sup>38</sup>

...

Continuing a trend observed last winter, forecasts predict U.S. LNG export demand will remain high due to significant international demand and corresponding strong expected profits from exports to both Asian and European markets, as discussed below. Though existing export facilities' capacities limit possible U.S. LNG exports, existing export facilities capacities have grown 1.9 Bcfd since winter 2021-2022 to 13.8 Bcfd. The Russian invasion of Ukraine prompted European markets to significantly increase their purchases of LNG from the constrained global supply chain, resulting in record high global LNG prices in Summer 2022. Despite declining in early fall after reaching peak levels in late August, global LNG prices remain at high levels relative to the recent past. Global LNG prices can impact domestic natural gas prices, given a tight balance between domestic natural gas production and demand.<sup>39</sup>

...

EIA forecasts gross LNG exports to average 12.5 Bcfd in winter 2022-2023, up from 11.3 Bcfd in winter 2021-2022, a 10.9% increase.<sup>40</sup>

In March of 2023, FERC released its 2022 State of the Markets report,<sup>41</sup> which confirmed many of the trends it had predicted in the fall—higher domestic gas prices paired with increased demand for LNG exports:

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<sup>38</sup> *Id.*

<sup>39</sup> *Id.* at 5.

<sup>40</sup> *Id.* at 10.

<sup>41</sup> 2022 State of the Markets report. (March 16, 2023).

The national average benchmark natural gas spot price at Henry Hub rose to \$6.38/Million British thermal unit (MMBtu) – its highest level since 2008 – as heightened geopolitical risk drove up forward-looking risk expectations in the U.S. natural gas market year-over-year in 2022. The Russian invasion of Ukraine in February 2022 and its fallout, including the cut-off of natural gas supplies from Russia to Europe initiated in August 2022, disrupted global oil and gas markets, particularly liquified natural gas (LNG) markets.<sup>42</sup>

...

Natural gas prices increased in 2022, as natural gas demand growth outpaced gains in natural gas production. In 2022, natural gas demand was driven by increased domestic natural gas consumption and LNG exports.<sup>43</sup>

DOE has previously relied on modeling of how energy markets will balance in response to increased LNG exports, and on studies of the macroeconomic effects of such balancing. As set forth below, those studies were based on data that is now several years old, which DOE must update.

The current surge in gas prices calls those prior analyses into question, and DOE cannot approve additional exports without carefully examining the continuing validity of those analyses. At a minimum, DOE should not approve further export applications until an updated study is completed.

DOE must be particularly cautious of excessive export approvals given DOE's refusal, to date, to exercise supervisory authority over already-approved exports. Although DOE retains authority to amend and/or rescind existing export authorizations, 15 U.S.C. § 717o, DOE has stated its reluctance to exercise such authority.<sup>44</sup> But if export applications are, in effect, a one-way ratchet on export volumes, DOE cannot issue such authorizations carelessly.

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<sup>42</sup> *Id.* at 2.

<sup>43</sup> *Id.* at 3.

<sup>44</sup> See Policy Statement Regarding Long-Term Authorizations to Export Natural Gas to Non-Free Trade Agreement Countries, 83 Fed. Reg. 28,841 (June 21, 2018). Although DOE has not exercised this authority yet, DOE *should* carefully consider doing so, given the severe impact already-authorized exports are having on domestic gas prices.

The NGA’s “principle aim[s]” are “encouraging the orderly development of plentiful supplies of natural gas at reasonable prices and protecting consumers against exploitation at the hands of natural companies,” with the “subsidiary purposes” of addressing “conservation, environmental, and antitrust issues.”<sup>45</sup> At present, LNG exports are not achieving these purposes. DOE’s uniform approval of all export applications has not protected consumers from exploitation at the hands of gas companies, and LNG exports are not leading to reasonable gas prices. Accordingly, even putting aside the numerous and severe environmental impacts of increased LNG exports that will result from the approval of this increase in export of natural gas, ECA’s application is inconsistent with the public interest and should be denied.

### **C. The MPL Expansion will Require Additional Pipelines**

DOE must examine whether or not the existing pipeline capacity within the U.S. is sufficient to transport the export volume in question, rather than just assume that capacity exists or deal with the problem at a later date. If approval of the MPL application would require the construction of new pipeline(s), NEPA requires DOE to consider the impacts of those pipelines.

#### **a. Existing Pipeline Capacity is Insufficient**

The EA provides no evidence that existing pipeline capacity will be sufficient to transport the additional 426 Bcf/yr requested by this application.<sup>46</sup> There is no discussion or analysis of environmental impacts if construction and operation of new pipelines is required for transporting the full volume.

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<sup>45</sup> *Minisink Residents for Env’tl. Pres. & Safety v. FERC*, 762 F.3d 97, 101 (D.C. Cir. 2014).

<sup>46</sup> MPL’s application seeks to export 291.22 Bcf/d to be re-exported to non-FTA countries, as well as 134.35 Bcf/d to be used in Mexico. Application, at 3.

In EAs for other recent export projects in Mexico, DOE has claimed that “there is nearly 15 billion cubic feet per day (Bcf/d) of existing physical cross-border pipeline capacity between the United States and Mexico, including nearly 7 Bcf/d of capacity in California, Arizona, and West Texas, and approximately 8 Bcf/d in South Texas.”<sup>47</sup> (These pipelines and their capacities are listed in **Figure 1** below). MPL’s application similarly claims there is approximately 12 Bcf/d of capacity available.<sup>48</sup> However, that does not account for how much of this capacity is already spoken for through existing projects and contracts, many of which have already been approved by DOE.

For example, the DOE has already approved gas exports from the proposed LNG terminals in Mexico in the following amounts:

Name	Bcf/d	Approval Date
Mexico Pacific Limited LLC (Phase 1)	2 Bcf/day <sup>49</sup>	Dec. 14, 2018 <sup>50</sup>
Energia Costa Azul	0.4 Bcf/day <sup>51</sup>	March 29, 2019 <sup>52</sup>

<sup>47</sup> Energía Costa Azul, S. de R.L. de C.V. Environmental Assessment (DOE/EA-2193), 7 [hereinafter “EA”].

<sup>48</sup> App. at 9.

<sup>49</sup> Commodity Insights Magazine, *LNG terminals and natural gas pipelines in Mexico* (December 2022) at 66, available at [https://commodityinsights.mydigitalpublication.com/publication/?m=68710&i=770944&p=66&bt\\_field\\_name\[\]=utm&ver=html5](https://commodityinsights.mydigitalpublication.com/publication/?m=68710&i=770944&p=66&bt_field_name[]=utm&ver=html5) (Hereafter “Commodity Insights Magazine”). (attached).

<sup>50</sup> U.S. Department of Energy, Opinion and Order Granting Long-term, Multi-contract Authorization to Export U.S.-Sourced Natural Gas by Pipeline to Mexico for Liquefaction and Re-Export in the form of Liquefied Natural Gas to Non-Free Trade Agreement Countries, Docket No. 18-70-LNG (Dec. 14, 2018), available at <https://www.energy.gov/sites/prod/files/2018/12/f58/ord4312.pdf>.

<sup>51</sup> Commodity Insights, *supra* note 50 at 66.

<sup>52</sup> U.S. Department of Energy, Opinion and Order 4365 Granting Long-term Authorization to Re-Export U.S.-Sourced Natural Gas in the form of Liquefied Natural Gas from Mexico to Non-free Trade Agreement Countries, Docket No. 18-145-LNG (March 29, 2019), available at



(Phase 1)		
Epiclon LNG LLC, Amigo Project (Phase 1)	0.5 Bcf/day <sup>53</sup>	Dec. 18, 2020 <sup>54</sup>
Vista Pacifico	0.6 Bcf/day <sup>55</sup>	Dec. 20, 2020 <sup>56</sup>

In addition, the following export applications are currently pending before DOE.

Name	Bcf/d	Approval Date
Mexico Pacific Limited LLC (Phase 2)	2 Bcf/day <sup>57</sup>	Pending
Energia Costa Azul (Phase 2)	2 Bcf/day <sup>58</sup>	Pending
Epiclon LNG LLC Amigo Project (Phase 2)	0.5 Bcf/day <sup>59</sup>	Pending
NFE Altamira FLNG	0.36 Bcf.day <sup>60</sup>	Pending

<https://www.energy.gov/sites/prod/files/2020/08/f77/ord4365.pdf>.

<sup>53</sup> Commodity Insights Magazine at 66.

<sup>54</sup> U.S. Department of Energy, Opinion and Order 4629 Granting Long-term Authorization to Export Natural Gas to Mexico for Liquefaction, and to Re-export U.S.-Sourced Natural Gas in the Form of Liquefied Natural Gas from Mexico to Free Trade Agreement and Non-free Trade Agreement Nations, Docket No. 20-31-LNG (Dec. 8, 2020), available at <https://www.energy.gov/sites/prod/files/2020/12/f81/ord4629.pdf>.

<sup>55</sup> LNG Journal.com, *US LNG exporter Sempra confirms US feed-gas permits for Costa Azul and Vista Pacifico projects in Mexico* (Dec. 23, 2022), available at <https://lngjournal.com/index.php/latest-news-mainmenu-47/item/107414-us-lng-exporter-sempra-confirms-us-feed-gas-permits-for-costa-azul-and-vista-pacifico-projects-in-mexico>. (attached).

<sup>56</sup> U.S. Department of Energy, Order Granting Long-Term Authorization to Re-Export U.S.-Sourced Natural Gas in the Form of Liquefied Natural Gas from Mexico to Non-Free Trade Agreement Nations, Docket No. 20-153-LNG (Dec. 20, 2022), available at [https://www.energy.gov/sites/default/files/2022-12/ord4929\\_1.pdf](https://www.energy.gov/sites/default/files/2022-12/ord4929_1.pdf).

<sup>57</sup> Commodity Insights, *supra* note 47, at 66.

<sup>58</sup> *Id*

<sup>59</sup> *Id*

<sup>60</sup> Reuters, *New Fortress plans to start producing LNG at Altamira, Mexico in July* (Feb. 28, 2023), available at <https://www.reuters.com/business/energy/new-fortress-plans-start-producing-lng-altamira-mexico-july-2023-02-28/>. (attached).

Salina Cruz LNG	0.4 Bcf/day <sup>61</sup>	Pending
Coatzacoalcos LNG	0.6 Bcf/day <sup>62</sup>	Pending

Assuming each facility becomes fully operational, and accounting for the existing gas use in Mexico (5.5 Bcf/d), these projects would cumulatively require 14.86 Bcf/d of feedgas to operate - nearly all the capacity of current pipeline infrastructure to Mexico.

Furthermore, the availability of all of this 15 Bcf/d of pipeline capacity for MPL and other west coast LNG projects is far from certain, as it assumes no growth in demand for gas consumption in Mexico. In reality, “national demand [in Mexico] is set to grow in the coming years with buildout of new gas-fired power plants, but the country is doing little to increase its domestic production.”<sup>63</sup> It also erroneously assumes all of these gas pipelines into Mexico could supply facilities on the west coast; when in reality many of the existing gas pipelines from the U.S. to Mexico are located in the eastern part of the country, as indicated in **Figure 1** below. Only numbers 1-14, which amount to 6.7 Bcf/d or 45% of total capacity, appear to be geographically situated such that might be available to supply MPL and other LNG projects on the west coast.

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<sup>61</sup> Global Energy Monitor, *Salina Cruz LNG Terminal* (Sept. 27, 2022), available at [https://www.gem.wiki/Salina\\_Cruz\\_LNG\\_Terminal](https://www.gem.wiki/Salina_Cruz_LNG_Terminal). (attached).

<sup>62</sup> Oil and Gas Journal, *CFEnergia considering building 4.5-million tpy Gulf Coast LNG plant* (Dec. 5, 2022), available at <https://www.ogj.com/pipelines-transportation/lng/article/14286593/cfenergia-considering-building-45million-tpy-gulf-coast-lng-plant> (attached).

<sup>63</sup> Commodity Insights, *supra* note 47.

**Figure 1. List of pipelines and capacities from Vista Pacifico Environmental Assessment.**

	Pipeline / Operator	FERC Order Granting Presidential Permit or Establishing Capacity	FERC Docket Nos.	Point of Entry / Exit	Approved / Proposed Capacity (mmcf/d)
1	San Diego Gas & Electric Co.	<u>116 FERC ¶ 61,246</u> (2006)	CP93-117	Otay, CA / Tijuana, BC	800
2	Southern California Gas Co.	68 FERC ¶ 61,277 (1994)	CP94-207	Calexico, CA/ Mexicali, BC	40
3	North Baja Pipeline Co.	<u>98 FERC ¶ 61,020</u> (2002)	CP01-23, CP06-61	Ogilby, CA/ Los Algodones, BC	500
4	Sierrita Gas Pipeline	<u>147 FERC ¶ 61,192</u> (2014)	CP13-74, CP18-38	Sasabe, AZ/ Sasabe, Son	627
5	El Paso Natural Gas Co (Ductos de Nogales)	<u>94 FERC ¶ 61,393</u> (2001)	CP01-41	Santa Cruz, AZ/ Nogales, Son	9
6	El Paso Natural Gas Co (Douglas Meter)	<u>141 FERC ¶ 61,026</u> (2012)	CP98-357, CP12-7	Cochise, AZ/ Agua Prieta, Son	117
7	El Paso Natural Gas Co (El Fresnal/Willmex Meter)	<u>141 FERC ¶ 61,026</u> (2012)	CP99-323, CP12-7	Cochise, AZ/ Agua Prieta, Son	329
8	El Paso Natural Gas Co (Naco/Monument 90 Facilities)	<u>154 FERC ¶ 61,257</u> (2016)	G-104, CP15-493	Cochise, AZ/ Naco, Son	57
9	El Paso Natural Gas Co (Samalayuca Crossing)	<u>140 FERC ¶ 61,072</u> (2012)	CP93-253, CP12-74	El Paso, TX/ Cd. Juarez, Chih	545
10	El Paso Natural Gas Co (El Norte Crossing)	<u>140 FERC ¶ 61,174</u> (2012)	CP12-96	Clint, TX/ Cd. Juarez, Chih	366
11	ONEOK Partners (Roadrunner – Tarahumara PL)	<u>153 FERC ¶ 61,041</u> (2015)	CP15-161	San Elizario, TX/ San Isidro, Chih	875
12	Comanche Trail Pipeline LLC (ETP Waha-San Elizario)	<u>155 FERC ¶ 61,182</u> (2016)	CP15-503	San Elizario, TX/ San Isidro, Chih	1,100
13	Trans-Pecos Pipeline LLC (ETP Waha-Presidio)	<u>155 FERC ¶ 61,140</u> (2016)	CP15-500	Presidio, TX/ Ojinaga, Chih	1,300
14	OkTex Pipeline Co., (Del Norte Facilities)	105 FERC ¶ 61,047 (2003)	CP03-99, CP00-384 CP91-2128	El Paso, TX / Juarez, Chih.	112
15	West Texas Gas Co (Acuña Export Crossing)	<u>101 FERC ¶ 61,058</u> (2002)	CP02-97	Val Verde, TX/ Cd. Acuña, Coah	25
16	West Texas Gas Co (Conagas)	<u>76 FERC ¶ 61,264</u> (1996)	CP84-361, CP84-366, CP96-497, CP02-382	Eagle Pass, TX/ Piedras Negras, Coah	38
17	West Texas Gas Co. (Reef Int'l Facilities)	99 FERC ¶ 61,221 (2002).	CP02-74, CP08-410	Eagle Pass, TX / Piedras Negras, Chih.	15
18	Kinder-Morgan Texas Pipeline Co.	<u>77 FERC ¶ 61,205</u> (1996)	CP96-583, CP12-440, CP13-94	Roma, TX/ Cd. Miguel Aleman, Tam	700
19	NET Mexico Pipeline	<u>145 FERC ¶ 61,112</u> (2013)	CP13-482	Starr, TX/ Cd. Camargo, Tam	2,100
20	Tennessee Gas Pipeline Co (PEMEX Exp)	<u>86 FERC ¶ 61,244</u> (1999)	CP99-28	Hidalgo, TX/ Reynosa, Tam	185
2	Tennessee Gas Pipeline Co (South Texas Exp)	<u>101 FERC ¶ 61,360</u> (2002)	CP02-117	Hidalgo, TX/ Reynosa, Tam	320
2	Coral Energy Corp. / Kinder Morgan Border Pipeline LLC	<u>89 FERC ¶ 61,171</u> (1999)	CP99-564, CP17-474	Hidalgo, TX/ Reynosa, Tam	450
23	Houston Pipeline (Energy Transfer)	<u>146 FERC ¶ 61,195</u> (2014)	CP14-13	Hidalgo, TX/ Reynosa, Tam	140
24	Texas Eastern Transmission (South Texas Exp)	16 FPC 27 (1956) 9 FERC ¶ 61,362 (1979)	G-9785, CP80-93	Hidalgo, TX/ Reynosa, Tam	300
25	Colombia Pipeline, LLC (Howard Energy - Impulsora)	<u>151 FERC ¶ 61,117</u> (2015)	CP14-513, CP16-70	Webb, TX/ Colombia, NL	1,120
26	Encinal Gathering Ltd	<u>121 FERC ¶ 61,248</u> (2007)	CP07-418	Webb, TX/ Coahuila	60
27	Valley Crossing Pipeline Co (Spectra Energy)	<u>161 FERC ¶ 61,084</u> (2017)	CP17-19	Brownsville, TX/ Offshore with Sur de Texas-Tuxpan Interconnect	2,600
<b>Total Existing Cross-Border Capacity</b>					<b><u>14,830</u></b>

That only a portion of these pipelines could supply west coast LNG terminals suggests that there is actually a far more limited amount of available pipeline capacity, and makes clear

other pipelines would need to be constructed for MPL and other west coast projects to come online.

In fact, industry analysts have acknowledged that there is simply not enough pipeline capacity available to supply all of these proposed projects. For example, a recent *Commodity Insights* article explained in detail how “securing firm access to feedgas from the US is the most significant hurdle” faced by proposed Mexican LNG terminals, because despite many entry points, pipeline “capacity narrows as it spreads throughout the country.”<sup>64</sup>

The article notes that a few proposed LNG terminals already have gas supply secured through contracts, and/or are close to doing so, including Energia Costa Azul Phase I (400 MMcf/d of feedgas), Vista Pacifico (600 MMcf/d), and Altamira.<sup>65</sup> However, MPL Phase I, which would need roughly 2 Bcf/d of feedgas, and LNG Alliance’s Amigo project, which would need roughly 500 MMcf/d, “would compete for gas from a 36-diameter 770 MMcf/d pipeline operated by Sempra.... [but] observers said the system could not serve both terminals.”<sup>66</sup> The LNG Alliance CEO Muthu Chezian said that realistically there is not enough gas for everyone,” and “it will be a matter of who finishes first.”

As for the “second phases of ECA, Amigo, MPL, and Salina Cruz, there is currently no gas available, and securing it would imply the construction of infrastructure.” ECA phase 2 would require almost 2 Bcf/d of feedgas, which “would require expansions both in the Mexican pipelines as well as on the US side of the border.”<sup>67</sup> Amigo phase 2 would require an additional

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<sup>64</sup> *Commodity Insights*, supra note 50 at 64.

<sup>65</sup> *Id.*

<sup>66</sup> *Id.* at 65.

<sup>67</sup> *Id.*

0.5 Bcf/d, which its CEO said would require a new pipeline.<sup>68</sup> MPL, as one of the largest proposed LNG projects, is even more dependent on a new pipeline:

MPL's second phase is more ambitious as it would increase production to 28 mt/year, requiring 4 Bcf/d of feedgas. The company has told investors it would require a new dedicated Bcf/d pipeline for its completion that would go from the US border to the site, roughly 200 miles away.<sup>69</sup>

This strongly suggests that MPL needs additional pipeline capacity for both phase I and phase II. If construction of any new pipelines is required to transport the full volume of exports requested by MPL, DOE must evaluate the environmental impacts stemming from needed pipeline construction in its NEPA review. DOE cannot segment the exports from the necessary pipeline infrastructure.

**b. The MPL Expansion and the Saguaro Pipeline are Connected Actions**

One pending pipeline docket that appears to be directly connected to MPL export application before DOE is the Saguaro Connector Pipeline ("Saguaro Pipeline") application before FERC.<sup>70</sup> The Saguaro Pipeline would be a 2.8 Bcf/d gas pipeline traveling 155 miles from the Waha Hub in Texas, to a border crossing near Sierra Blanca, Texas.<sup>71</sup> There, it would connected to a new pipeline on the Mexican side of the border that would supply an LNG terminal under development on the west coast of Mexico.<sup>72</sup> The Saguaro Pipeline FERC application states that the Saguaro Pipeline will serve a specific natural gas export facility on Mexico's West Coast:

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<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> 88 Fed. Reg. 1575 (Jan 11, 2023)

<sup>71</sup> Saguaro Connector Pipeline LLC, Application for Natural Gas Act Section 3 Authorization and Presidential Permit (Dec. 20, 2022) (attached).

<sup>72</sup> 88 Fed. Reg. 1575 (Jan 11, 2023)

At the International Boundary, Saguaro will connect with NewCo Mexico Pipeline, which will extend to a natural gas export facility under development on the West Coast of Mexico. Saguaro anticipates that it will enter into an interconnection and operating agreement with NewCo Mexico Pipeline with respect to the interconnection of the two pipelines.<sup>73</sup>

Although the Saguaro application does not name the LNG terminal or pipeline, it provides enough detail to make clear it is designed to serve a specific terminal.<sup>74</sup> In fact, the application claims it cannot change the pipeline route or border crossing location, because the border crossing location is “being dictated by the preferred alignment for the pipeline inside Mexico.”<sup>75</sup> Nonetheless, the Saguaro application declines to name the pipeline because it claims “the name of the interconnecting pipeline in Mexico has not been finalized...”<sup>76</sup>

Nonetheless, it is clear the unnamed LNG facility served by the unnamed pipeline is MPL’s proposed Saguaro Energia LNG facility (“Saguaro LNG”).<sup>77</sup> Aside from sharing a name, the Saguaro Pipeline border crossing is on a nearly direct line between the Waha Hub and MPL’s Saguaro LNG facility in Puerto Libertad, Sonora. Although MPL’s application initially stated that Saguaro LNG would be supplied solely by existing pipelines,<sup>78</sup> it subsequently moved to intervene in support of the Saguaro Pipeline in its FERC docket.<sup>79</sup> In that filing, MPL called itself a “prospective shipper” and admitted that “MPL will utilize the Saguaro Connector and the Intrastate Facilities... to transport natural gas from the United States to Mexico for further

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<sup>73</sup> App. at 4; *see also* 6.

<sup>74</sup> *See, e.g.,* Application at 6, 9, 59.

<sup>75</sup> *Id.* at 485-86.

<sup>76</sup> *Id.* at 4 n. 5.

<sup>77</sup> Mexico Pacific, *Saguaro Energia*, available at <https://mexicopacific.com/saguaro-lng/saguaro-energia/>.

<sup>78</sup> App at 89;

<sup>79</sup> MPL Motion to Intervene (attached)

delivery to the MPL Facility.”<sup>80</sup> It also stated that MPL and Saguaro Pipeline were currently negotiating a precedent agreement, as of January 2023.<sup>81</sup> In its filing of January 23 in the instant docket, MPL further stated:

If FERC grants Saguaro the requested authorization and related Presidential Permit, MPL would expect to add the Saguaro pipeline to the several existing pipeline routes over which MPL and its customers may transport natural gas from the United States to Mexico for further delivery to the MPL Facility.

MPL may claim there are numerous existing pipelines with sufficient capacity to supply the additional amount of exports it now seeks. However, as set forth above, MPL has told investors that the expansion of Saguaro LNG would need a new dedicated pipeline; industry analysts have observed there is currently a shortage of capacity for all the proposed projects; and the Saguaro Pipeline is the only proposed pipeline for which MPL has intervened in support and is negotiating, or has already entered into, a shipping agreement. Thus, the Saguaro Pipeline and MPL’s Saguaro LNG terminal are connected actions that must be evaluated by DOE and FERC together in a single EIS.

#### **D. MPL’s Exports to Asia will Provide Little Strategic or Security Benefits**

Following Russian’s invasion of Ukraine in early 2023, perhaps the biggest energy story of the last year has involved global efforts to supply Europe with sufficient gas to replace lost imports from Russia. However, the MPL project is intended to primarily supply Asian markets, not Europe. MPL’s application notes that its Saguaro LNG facility is “particularly well positioned to supply LNG into Asian markets, including markets in Korea, Japan, and China, each of which can be supplied by vessel from the MPL Facility without having to transit the

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<sup>80</sup> *Id.* at 3.

<sup>81</sup> *Id.*

Panama Canal, as well as markets in South America (in particular Chile, Colombia and Ecuador).”<sup>82</sup>

MPL requests authorization for through 2050, *far* beyond the date at which global use of fossil fuels must essentially end. In its application, MPL assert that one public benefit of this gas export is to “further energy security and reduce reliance on, or impact of, Russian gas amidst recent geopolitical events”,<sup>83</sup> and “free up Atlantic LNG destined for Asia so that it may flow to Europe, providing Asia markets with the energy security they will need in order to permit other sources of LNG to meet increasing European demand.”<sup>84</sup>

We agree that there is a public interest in assisting Europe in transitioning away from Russian gas. But the best way to get Europe off Russian gas is to get Europe off gas altogether, as Secretary Granholm has recognized.<sup>85</sup> In 2022, the United States increased its exports to Europe, using existing infrastructure, far beyond the amount contemplated by the task force convened in response to the U.S.-E.U. task force convened in response to Russia’s invasion of Ukraine. Beyond this rapid, existing increase, Europe has other, better options.

The European Union planned to cut Russian gas use by two thirds in 2022.<sup>86</sup> The International Energy Agency has concluded that heat pumps, building efficiency, and similar

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<sup>82</sup> See MPL Application (12/22/22) at 8; 23, 27; *see also* <https://mexicopacific.com/saguaro-lng/strategic-location/>.

<sup>83</sup> App. at 22.

<sup>84</sup> App. at 23.

<sup>85</sup> *See, e.g.*, Politico, DOE declares an energy war (Apr. 28, 2022), <https://www.politico.com/newsletters/morning-energy/2022/04/28/doe-declares-an-energy-war-00028380> and attached (quoting Sec. Granholm’s statement that “Perhaps renewable energy is the greatest peace plan this world will ever know.”) (attached).

<sup>86</sup> REPowerEU: Joint European action for more affordable, secure and sustainable energy (March 8, 2022), [https://ec.europa.eu/commission/presscorner/api/files/document/print/\[europa\\_tokens:europa\\_interface\\_language\]/ip\\_22\\_1511/IP\\_22\\_1511\\_EN.pdf](https://ec.europa.eu/commission/presscorner/api/files/document/print/[europa_tokens:europa_interface_language]/ip_22_1511/IP_22_1511_EN.pdf) (attached).



measures can significantly reduce the European Union’s gas use, and thus the impact of Russian energy, within a year, with greater reductions each following year.<sup>87</sup> Some analyses conclude that EU can entirely eliminate reliance on Russian gas by 2025, with efficiency and renewable energy making up for two thirds of the former Russian supply.<sup>88</sup> Similarly, the United Kingdom’s Energy & Climate Intelligence Unit has concluded that *all* of the UK’s gas demand that was recently met by Russian gas could be eliminated through installation of heat pumps and better installation within five years.<sup>89</sup> European Energy Commissioner Kadri Simson has emphasized that Europe remains committed to renewable energy goals, and is looking to additional gas imports only for the short term.<sup>90</sup> Members of the U.S. Congress and the European Parliament have emphasized that, notwithstanding the need to assist Europe in transitioning off of Russian gas, no new gas infrastructure or exports should be approved.<sup>91</sup>

We recognize that the U.S and European Commission have nonetheless proposed for EU member states to “work ... toward the goal of ensuring, until at least 2030, demand for approximately 50 bcm/year,” equivalent to approximately 4.8 bcf/d, “of additional U.S. LNG

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<sup>87</sup> International Energy Agency, A 10-Point Plan to Reduce the European Union’s Reliance on Russian Natural Gas (March 3, 2022), available at <https://www.iea.org/reports/a-10-point-plan-to-reduce-the-european-unions-reliance-on-russian-natural-gas> (attached).

<sup>88</sup> E3G, EU can stop Russian gas imports by 2025 (March 23, 2022), available at <https://www.e3g.org/publications/eu-can-stop-russian-gas-imports-by-2025/>.(attached).

<sup>89</sup> Harry Cockburn, Heat Pumps and Insulation ‘Fastest Way to End Reliance on Russian Gas,’ the Independent, March 9, 2022, *available at* <https://www.independent.co.uk/climate-change/news/heat-pumps-russian-gas-north-sea-b2032017.html> and attached; *see also* Energy & Climate Intelligence Unit, Ukraine Conflict and Impacts on UK Energy, <https://eciu.net/analysis/briefings/uk-energy-policies-and-prices/briefing-ukraine-conflict-and-impacts-on-uk-energy> (last accessed Mar. 10, 2022) (attached)..

<sup>90</sup> DOE declares an energy war, *supra* note 83. (attached).

<sup>91</sup> Jared Huffman et al., Letter to U.S. President Biden and E.C. President Von der Leyen (May 19, 2022), [https://huffman.house.gov/imo/media/doc/Letter%20Regarding%20the%20EU-US%20Joint%20Energy%20Security%20Statement\\_5.19.22.pdf](https://huffman.house.gov/imo/media/doc/Letter%20Regarding%20the%20EU-US%20Joint%20Energy%20Security%20Statement_5.19.22.pdf) (attached).

that is consistent with our shared net-zero goals.”<sup>92</sup> This goal is ill-advised and self-refuting, as increased production and use of LNG through 2030 cannot be made consistent with the shared net-zero goals. But even if this goal is pursued, it does not support DOE’s authorization of additional exports here. For one, some of this additional demand can be satisfied by existing, already-operating facilities. Some existing facilities sell gas on spot markets, and even facilities with long-term contracts with Asian buyers may be interested in redirecting cargoes.<sup>93</sup> Two, previously-approved non-FTA exports from facilities under construction will already provide an additional amount of U.S. export supply.<sup>94</sup> And three, DOE has already authorized over 30 bcf/d of additional non-FTA LNG exports beyond the 15.54 bcf/d previously authorized from facilities that are already in operation or under construction.<sup>95</sup> Given DOE’s general refusal to revisit already-approved exports,<sup>96</sup> DOE cannot authorize still further exports to meet demand that would be satisfied several times over by existing authorizations, even if DOE concludes that the proposed additional authorization would be a better way to meet that demand. To be clear, we believe that DOE *should* consider exercising its authority under 15 U.S.C. § 717o to amend

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<sup>92</sup> The White House, FACT SHEET: United States and European Commission Announce Task Force to Reduce Europe’s Dependence on Russian Fossil Fuels (March 25, 2022), available at <https://www.whitehouse.gov/briefing-room/statements-releases/2022/03/25/fact-sheet-united-states-and-european-commission-announce-task-force-to-reduce-europes-dependence-on-russian-fossil-fuels/> (attached).

<sup>93</sup> See, e.g., Reuters, Europe draws more LNG from Asia as China imports slump (Apr. 28, 2022), <https://www.reuters.com/markets/commodities/europe-draws-more-lng-asia-china-imports-slump-2022-04-28/> and attached; Bloomberg, China Looks to Sell Spare LNG as Virus Lockdowns Hit Demand (Apr. 24, 2022), <https://www.bloomberg.com/news/articles/2022-04-25/china-looking-to-sell-spare-lng-as-virus-lockdowns-hit-demand> (attached).

<sup>94</sup> See Order 3909-C at 44 n.248 (citing U.S. Energy Info. Admin., *U.S. Liquefaction Capacity* (Dec. 8, 2021), <https://www.eia.gov/naturalgas/U.S.liquefactioncapacity.xlsx>). (attached).

<sup>95</sup> *Id.* at 6-7, 34 n.177.

<sup>96</sup> See Policy Statement Regarding Long-Term Authorizations to Export Natural Gas to Non-Free Trade Agreement Countries, 83 Fed. Reg. 28,841 (June 21, 2018). Although DOE has not exercised this authority yet, DOE *should* carefully consider doing so, given the severe impact already-authorized exports are having on domestic gas prices.

and/or rescind existing export authorizations, but unless and until DOE does so, DOE cannot continue to allow approved export volumes to ratchet higher and higher, far above the amounts contemplated in DOE's previous projections.

Finally, if DOE contends that the exports at issue here are in the public interest because it will free up Atlantic LNG cargo from Asian markets to Europe due to Europe's "need" of the gas, then DOE should ensure that, if this export is approved, the Atlantic LNG cargo goes to Europe. DOE has broad authority to grant the requested additional authorization "in whole or in part, with such modification and upon such terms and conditions as [DOE] find[s] necessary or appropriate." 15 U.S.C. § 717b(a). If providing gas to Asia to free up LNG for Europe is the justification for these exports, DOE should explore whether to impose conditions that ensure that the authorization is actually used for the stated purpose.

#### **D. Environmental Impacts**

##### **a. The DOE must evaluate GHG impacts and climate change impacts in an EIS.**

NEPA requires an EIS, rather than a more abbreviated EA, for all proposed "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). In determining whether effects will potentially be significant, and thus whether an EIS is required, an agency must consider not only the magnitude of the effects on public health and the environment, but also the extent to which those effects are controversial, uncertain, cumulatively significant, or in potential conflict with "Federal, State, Tribal, or local law protecting the environment." 40 C.F.R. § 1501.3(b). Overall, the threshold for "significance" is "low;" an EIS must be prepared if there are even "substantial questions" regarding the severity of impacts. *Cal. Wilderness Coal. v. DOE*, 631 F.3d 1072, 1097 (quotation omitted). Where an agency seeks to avoid preparation of an EIS by claiming that impacts will be insignificant, the

agency bears the burden of “mak[ing] a convincing case for its finding.” *Grand Canyon Trust v. FAA*, 290 F.3d 339, 340-41 (D.C. Cir. 2002) (citations and quotations omitted).

The GHG emissions attributable to MPL’s exports are significant enough to require an EIS.

Furthermore, DOE has adopted a specific presumption that LNG exports require an EIS. DOE has determined that “[a]pprovals or disapprovals of authorizations to import or export natural gas” involving construction or significant modification of export facilities, or even a “major increase in the quantity of [LNG] imported or exported” from existing facilities, will “normally require [an] EIS.” 10 C.F.R. Pt. 1021 Subpt., D App. D, D8-D9. “[R]egulations of this type ... presume[] that an EIS will normally be prepared ..., thereby imposing on the [agency] the burden of establishing why that presumption should not apply in this particular case.” *Davis v. Mineta*, 302 F.3d 1104, 1117 (10th Cir. 2002).

Export-induced gas production will cause these impacts, and the record provides no basis for concluding that the contribution will be insignificant. NEPA allows an agency to avoid an EIS only when the agency can affirmatively conclude, beyond substantial question, that the impacts will be insignificant.

#### **b. DOE must adhere to CEQ’s GHG / Climate Guidance**

In early 2023, the Council on Environmental Quality (“CEQ”) released its National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change (“GHG Guidance”).<sup>97</sup> The GHG Guidance provides important recommendations

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<sup>97</sup> 88 Fed. Reg. 1196 (January 9, 2023) (attached). Although the document is an “interim guidance” and CEQ will issue a final version following the public comment period, it is effective upon publication and agencies are instructed to follow it to ensure NEPA compliance. *Id.* at 1198.

for agencies to follow in considering GHG emissions and climate change as part of their NEPA analyses. For example, the GHG Guidance recommends, *inter alia*, that agencies:

- “quantify a proposed action’s projected GHG emissions or reductions for the expected lifetime of the action, considering available data and GHG quantification tools that are suitable for the proposed action;”
- “use projected GHG emissions associated with proposed actions and their reasonable alternatives to help assess potential climate change effects;”
- “provide additional context for GHG emissions, including through the use of the best available social cost of GHG (SC–GHG) estimates, to translate climate impacts into the more accessible metric of dollars, allow decision makers and the public to make comparisons, help evaluate the significance of an action’s climate change effects, and better understand the tradeoffs associated with an action and its alternatives;”
- “analyze reasonably foreseeable direct, indirect, and cumulative GHG emissions;”
- “address short and long-term climate change effects;”
- “Advising agencies to use the best available information and science when assessing the potential future state of the affected environment in NEPA analyses and providing up to date examples of existing sources of scientific information;”
- “incorporate environmental justice considerations into their analyses of climate-related effects, consistent with Executive Orders 12898 and 14008.”<sup>98</sup>

DOE should follow the GHG Guidance and thoroughly evaluate the GHG emissions and direct, indirect, and cumulative climate change impacts of the MPL export proposal. This is particularly important because many of CEQ’s recommendations are new, and have not been incorporated into previous DOE NEPA documents; and there have been significant developments in climate science since the publication of the four GHG studies DOE refers to in its Federal Register announcement.<sup>99</sup>

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<sup>98</sup> *Id.* at 1198.

<sup>99</sup> See note 97, *supra*.

### c. DOE Must Consider the Entire LNG Lifecycle

Both the NGA and NEPA require DOE to take a hard look at environmental impacts occurring throughout the entire LNG lifecycle, and to consider such impacts in the public interest determination. That analysis should include both long-term and short-term climate impacts of the proposed MPL exports.<sup>100</sup>

Under the NGA, DOE itself has recognized that a key consideration in its public interest determinations is the effect increased export volumes will have on gas production and use. DOE therefore must consider the environmental impacts of such effects. As the D.C. Circuit has affirmed, the NGA's public interest standards provide authority and obligation to consider indirect effects on upstream gas production and downstream use of transported gas, and the environmental consequences thereof, as part of the public interest inquiry.<sup>101</sup>

Similarly, NEPA's statutory text requires agencies to consider the "effects" of proposed actions, which includes direct, indirect, and cumulative effects.<sup>102</sup> Indirect effects should thus include a life-cycle analysis of GHG emissions resulting from the extraction, transportation, and ultimate burning of the gas that would be exported via MPL.<sup>103</sup>

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<sup>100</sup> 88 Fed. Reg. 1206 ("When considering effects, agencies should take into account both the short and long-term adverse and beneficial effects using a temporal scope that is grounded in the concept of reasonable foreseeability... The effects analysis should cover the action's reasonably foreseeable lifetime, including anticipated GHG emissions associated with construction, operations, and decommissioning.")

<sup>101</sup> See *Sierra Club v. FERC*, 867 F.3d 1357, 1373 (D.C. Cir. 2017) ("*Sabal Trail*") (holding that indirect impacts, including indirect climate impacts, must be evaluated as part of public interest inquiry under Natural Gas Act, and that for export approvals under section 3, DOE has exclusive authority to consider these issues).

<sup>102</sup> 42 U.S.C. § 4332(2)(F); 40 C.F.R. 1508.1(g).

<sup>103</sup> *Food & Water Watch v. FERC*, 28 F.4th 277, 288 (D.C. Cir. 2022); see also *Sierra Club v. FERC*, 867 F.3d 1357, 1374 (D.C. Cir. 2017).

In summary, both the Natural Gas Act and NEPA require DOE to evaluate and weigh environmental impacts occurring through the LNG life cycle.

**d. The proposed exports cannot be categorically excluded from NEPA Review**

MPL's application requests that DOE apply a categorical exclusion to exempt it from NEPA review.<sup>104</sup> DOE should deny the request and prepare an EIS.

In December of 2020, DOE adopted a categorical exclusion for LNG export approvals, codified at 10 C.F.R. Part 1021 Part D Appendix B, B5.7. Adoption of this categorical exclusion was arbitrary and unlawful, and DOE cannot rely on this categorical exclusion here. Alternatively, this proposal lacks the integral elements of an exempt project, precluding reliance on a categorical exclusion here.

**1. The 2020 categorical exclusion is invalid**

Adoption of the 2020 categorical exclusion was arbitrary, capricious, and contrary to law. Most egregiously, in promulgating the 2020 exclusion, DOE improperly excluded from NEPA review *all* impacts occurring upstream of the point of export, based on a basic and fundamental legal error. The Notice of Proposed Rulemaking argued that DOE need not consider “environmental impacts resulting from actions occurring [before] the point of export” because “the agency has no authority to prevent” these impacts, citing *Sierra Club v. FERC*, 827 F.3d 36 (D.C. Cir. 2016) (“*Freeport I*”).<sup>105</sup> This is the exact opposite of *Freeport I*'s explicit and central holding. *Freeport I* held that FERC had no authority prevent these impacts, specifically because DOE had retained “exclusive” authority to do so.<sup>106</sup> FERC had “no authority” to consider the

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<sup>104</sup> App. at 29.

<sup>105</sup> 85 Fed. Reg. at 25,341; *accord* Final Rule, 85 Fed. Reg. 78,197, 78,198.

<sup>106</sup> 827 F.3d at 40-41, 46.

impacts of export-induced gas production because “the Natural Gas Act places export decisions squarely and exclusively within the Department of Energy’s wheelhouse.” *Id.* at 46.<sup>107</sup> Because DOE *has* such authority, the categorical exclusion was adopted unlawfully, cannot be relied upon here, and provides no evidence to suggest that all environmental effects occurring before the point of exports will be insignificant.

Nor can upstream impacts be dismissed as unforeseeable. DOE has in fact foreseen them, with EIA modeling, an environmental addendum, and a lifecycle report that extensively, although at times incorrectly, discuss these impacts. In these, DOE has broadly conceded that the climate impacts of upstream effects are foreseeable. And DOE’s Environmental Addendum acknowledged that increased gas production “may” increase ozone levels and “may” frustrate some areas’ efforts to reduce pollution to safe levels.<sup>108</sup> But as DOE has acknowledged, it has not made any determination as to the likelihood or significance of such impacts—the Addendum made no “attempt to identify or characterize the incremental environmental impacts that would result from LNG exports” whatsoever.<sup>109</sup> Insofar as DOE contends that these impacts can be difficult to foresee, that affirms, rather than refutes, the need for case-by-case analysis. *See also Cal. Wilderness Coal. v. DOE*, 631 F.3d 1072, 1097 (9th Cir. 2011) (rejecting DOE argument that environmental impacts of designation of electric transmission corridors were too speculative to

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<sup>107</sup> In finalizing the 2020 Categorical Exclusion, DOE also erred in asserting that its approval of exports is “not interdependent” with FERC’s approval of export infrastructure. 85 Fed. Reg. 78,197, 78,199. DOE’s export authorization cannot be effectuated without FERC approval of export infrastructure, and vice versa; even if FERC infrastructure could proceed solely on the basis of FTA export authorization, neither this project nor any other major project in fact seeks to do so.

<sup>108</sup> Addendum, *supra* note 9, at 27-28

<sup>109</sup> DOE/FE Order No. 3638 (Corpus Christi LNG), at 193-194 (May 12, 2015), *available at* [https://fossil.energy.gov/ng\\_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/ord3638.pd](https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/ord3638.pd)



require NEPA analysis). Even if DOE determines that upstream impacts can only be discussed generally, in something like the Environmental Addendum, this does not entail the conclusion that the impacts are insignificant. Similarly, a conclusion that an agency can meet its NEPA obligations by tiering off an existing document (which may need to be periodically revised as facts and scientific understanding change) is different than the conclusion that NEPA review simply is not required.

The 2020 Categorical Exclusion's treatment of downstream impacts was also arbitrary. As with upstream impacts, DOE mistakenly asserted that some downstream impacts (downstream impacts relating to regasification and use of exported gas) were entirely outside the scope of NEPA analysis.<sup>110</sup> This is again incorrect: DOE has authority to consider these impacts when making its public interest determination, and DOE has not shown that these impacts are so unforeseeable that they cannot be meaningfully discussed at all. Indeed, DOE has refuted this argument itself, discussing these impacts in the life cycle analysis.

For other impacts, relating to marine vessel traffic, the preamble to the 2020 final rule arbitrarily dismissed these impacts as *de minimus*, claiming that because LNG export has historically constituted only a small share of overall U.S. shipping traffic, the effects of future LNG export approvals could be ignored. This is legally and factually incorrect. LNG exports are rapidly expanding, and this expansion depends upon and is caused by authorizations like the one Venture Global has requested here. In addition, noting that LNG traffic is a small share of the total does not demonstrate that the impact of LNG traffic in particular is insignificant: a small portion of a large problem can itself constitute a significant impact. And even if such a fractional approach could be justified, it would require a different denominator: the number of ships in the

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<sup>110</sup> 85 Fed. Reg. at 78,202.

habitat of the species at issue. LNG traffic—now and in the future—constitutes a larger and growing share of traffic *in the Gulf of Mexico*, where many of the species that will be impacted by Venture Global’s proposed exports, including multiple listed species, live. Ship traffic to the West and East Coasts inflates the denominator but is irrelevant to many of these species.

## **2. The Proposed Exports Do Not Satisfy the “Integral Elements” Necessary for a Categorical Exclusion**

Even if the 2020 Categorical Exclusion was valid, DOE would be unable to rely on it here. DOE cannot invoke a categorical exclusion without determining that the proposed action has the “integral elements” of excluded actions as defined in Appendix B to 10 C.F.R. Part 2021 Subpart D. Here, the proposal does not satisfy integral element 1, because it “threaten[s] a violation of applicable statutory [or] regulatory ... requirements for environment, safety, and health, or similar requirements of ... Executive Orders.”<sup>111</sup> This integral element is missing whenever a proposal *threatens* a violation; if there a possibility of such a violation, a project-specific NEPA analysis is required to evaluate that risk.

Here, increased exports threaten a violation of Executive Order 14,008, Tackling the Climate Crisis at Home and Abroad.<sup>112</sup> This order—like the Paris Accord, recent Glasgow Pact, and other commitments—affirms that “Responding to the climate crisis will require ... net-zero global emissions by mid-century or before.”<sup>113</sup> Increasing exports through mid-century (*i.e.*, 2050) is inconsistent with any plausible trajectory for achieving this goal, as recognized by the International Energy Agency.<sup>114</sup> Even if DOE somehow contends that expanded exports can somehow be reconciled with the President’s climate goals and policies, that surprising contention

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<sup>111</sup> 10 C.F.R Part 1021 Subpart D Appendix B.

<sup>112</sup> 86 Fed. Reg. 7619 (Jan. 27, 2021).

<sup>113</sup> *Id.* § 101, 86 Fed. Reg. at 761.

<sup>114</sup> Net Zero by 2050, at 102-03 (attached).

does not change the fact that expanded exports at least “threaten” a violation of those policies, such that integral element 1 is not satisfied.

**e. DOE’s Prior Life Cycle Greenhouse Gas Analyses Are Not a Substitute for NEPA Review, and Do Not Demonstrate that Greenhouse Gas Emissions Caused by the Proposal Are Consistent with the Public Interest**

One way or another, DOE must revisit its prior analyses of the greenhouse gas impact of LNG exports. Procedurally, the 2014 and 2019 lifecycle analyses are not a substitute for NEPA review, as DOE continues to recognize.<sup>115</sup> Although the lifecycle analyses can inform NEPA review, DOE must address the impacts of this and other LNG proposals within the NEPA framework.

More fundamentally, the lifecycle analyses both ask the wrong questions and do not reflect current available science regarding LNG’s impacts.

**i. The Life Cycle Analyses Ask the Wrong Questions**

MPL seeks authorization to increase exports through 2050. DOE therefore must take a hard look at the environmental impact of expanded exports of LNG across that thirty-year time period, with the long-term gas production and use such exports necessarily entail. This includes addressing whether such impacts are consistent with the United States’ climate goals. They are not. But the lifecycle analyses do not address this issue. That is, the analyses do not provide any discussion of whether increasing LNG export will help or hinder achievement of the long-term drastic emission reductions that are essential to avoiding the most catastrophic levels of climate change.

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<sup>115</sup> *E.g.*, 85 Fed. Reg. at 78,202 (The life cycle “reports are not part of DOE’s NEPA review process”).

Instead, the analyses look only to the short term. The only questions asked by the analyses are “How does exported LNG from the United States compare with” other fossil fuels (coal or other gas) used in used “in Europe and Asia, from a life cycle [greenhouse gas] perspective?”<sup>116</sup> DOE has attempted to justify this narrow focus by arguing that in the present moment, LNG primarily competes with other sources of fossil fuel. But DOE has not contended, nor can it, that this will be true throughout the thirty-year requested authorization term.

Limiting global temperature rise to 1.5 degrees Celsius will require dramatic emission reductions in the near and long term, reductions which are inconsistent with further development of long-lived fossil fuel infrastructure in the U.S. or abroad, as confirmed by the International Energy Agency,<sup>117</sup> Intergovernmental Panel on Climate Change,<sup>118</sup> and others. Executive Order 14,008 appropriately instructs federal agencies to work to discourage other countries from “high carbon investments” or “intensive fossil fuel-based energy.”<sup>119</sup> The lifecycle analyses argue that the infrastructure needed to receive and use U.S. LNG is not higher emitting than other sources of fossil fuel, but the analyses do not inform decisionmakers or the public whether facilities to use U.S. LNG are nonetheless such a “high-carbon,” “intensive” source of emission that they must be discouraged.

Even for the short term, the lifecycle analyses ignore important parts of the question of how DOE’s decision to authorize additional U.S. LNG exports will affect greenhouse gas emissions. DOE has recognized, for example, that increasing LNG exports will both cause some

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<sup>116</sup> 84 Fed. Reg. 49,278, 49,279 (Sept. 19, 2019).

<sup>117</sup> IEA, Net Zero by 2050 at 101-02.

<sup>118</sup> Intergovernmental Panel on Climate Change, *Special Report: Global Warming of 1.5 C, Summary for Policymakers* at 13-17 (May 2019), available at [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15\\_SPM\\_version\\_report\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf) (attached).

<sup>119</sup> Executive Order 14,008 at § 102(f), (h).

gas-to-coal shifting in the U.S. electric sector.<sup>120</sup> Similarly, DOE has acknowledged that “U.S. LNG Exports may ... compete with renewable energy ... as well as efficiency and conservation measures” in overseas markets.<sup>121</sup> Indeed, while DOE has refused to address the likely share of U.S. LNG exports that will be displaced by fossil fuels, peer reviewed research concludes that such exports are likely to play only a limited role in displacing foreign use of coal, and such that U.S. LNG exports are likely to increase net global GHG emissions.<sup>122</sup>

Finally, while it is important to address foreseeable overseas impacts of LNG exports, DOE also needs to examine the impact of increased exports specifically on domestic or territorial emissions. The world must transition away from fossil fuel development as quickly as possible. It is inappropriate, unfair, and nonstrategic for the U.S. to argue that it can nonetheless increase fossil fuel production, and enjoy the purported economic benefits thereof, because the associated emissions will be offset by foregone production elsewhere. Instead, nations’ commitments under the Paris Accord and similar agreements “should include greenhouse gas emissions and removals taking place within national territory and offshore areas over which the country has jurisdiction.”<sup>123</sup> Requiring nations to measure and report territorial emissions also ensures the reliability of emission calculations, as nations can only directly regulate emissions within their borders. Estimates of emissions from activities within the U.S. are also likely to be more accurate than estimates that seek to trace the lifecycle of fuels combusted in an end use country. For all of

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<sup>120</sup> EIA 2014, *supra* note 8, at 12, 19 (attached).

<sup>121</sup> DOE/FE Order 3638 at 202-03

<sup>122</sup> Gilbert, A. Q. & Sovacool, B. K., *US liquefied natural gas (LNG) exports: Boom or bust for the global climate?*, Energy (Dec. 15, 2017), available at <https://doi.org/10.1016/j.energy.2017.11.098> (attached).

<sup>123</sup> Witi, J. & Romano, D., 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 8: Reporting and Tables, available at [https://www.ipccnggip.iges.or.jp/public/2019rf/pdf/1\\_Volume1/19R\\_V1\\_Ch08\\_Reporting\\_Guidance.pdf](https://www.ipccnggip.iges.or.jp/public/2019rf/pdf/1_Volume1/19R_V1_Ch08_Reporting_Guidance.pdf), at 8 (attached).

these reasons, a hard look at the climate impact of increasing U.S. LNG exports must address the impact of such exports on domestic emissions specifically, in addition to including reasonable forecasting about global impacts.

At the most basic level, DOE must acknowledge that increasing the supply of US LNG exports would be expected to decrease average global LNG prices, and thereby spur an increase in global gas consumption. There is no reason to assume that US LNG exports will solely substitute for other sources of gas without increasing overall gas demand and use. Nor is there a reason to assume that, insofar as an increase in gas consumption occurs, this increase will solely be due to displacement of coal. Putting aside specific information about global energy markets, basic economics demonstrate that the lifecycle report is not looking at the whole picture.

Considering information about potential end use markets further indicates that increasing US LNG exports will meaningfully increase energy use and/or compete with renewables. Global LNG markets are abundantly supplied. According to the International Energy Agency, “Demand from traditional LNG buyers, namely Japan and Korea, is likely to be flat or decline gradually depending on use in power generation;”<sup>124</sup> “demand from traditional buyers is expected to be stagnant.”<sup>125</sup> Any growth in Asian LNG demand “is being driven by newer importers”<sup>126</sup> or “non-traditional emerging buyers, namely Bangladesh, China, India and Pakistan.”<sup>127</sup> The Energy Information Administration also uses tools to estimate the extent to which foreign markets are actually likely to buy US LNG.<sup>128</sup>

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<sup>124</sup> International Energy Agency, *Global Gas Security Review 2019* at 10 (Sept. 2019), available at [https://iea.blob.core.windows.net/assets/615a9f02-08af-449d-8baa-ea05198fefbc/Global\\_Gas\\_Security\\_Review\\_2019.pdf](https://iea.blob.core.windows.net/assets/615a9f02-08af-449d-8baa-ea05198fefbc/Global_Gas_Security_Review_2019.pdf) (attached).

<sup>125</sup> *Id.* at 4.

<sup>126</sup> *Id.*

<sup>127</sup> *Id.* at 11

<sup>128</sup> See, e.g., International Energy Agency, *Assumptions to the Annual Energy Outlook 2022*

The International Energy Agency predicts that in these likely and other markets for marginal US LNG exports, exports are likely to supply increased energy demand, rather than solely or even primarily displace existing generation.<sup>129</sup> EIA's International Energy Outlook predicts that global energy consumption will steadily increase in the coming decades, and that this increase will be satisfied by growth in renewables and gas, with renewables exceeding gas and coal by 2030.<sup>130</sup> Insofar as the primary question facing these markets is whether to meet increasing energy needs through gas or renewables, increasing international trade in international trade in LNG and other measures to increase global availability of natural gas will cause natural gas to displace use of wind, solar, or other renewables that would otherwise occur.<sup>131</sup> On the other hand, recent peer reviewed research concludes that US LNG exports are likely to play only a limited role in displacing foreign use of coal, and such that US LNG exports are likely to increase net global GHG emissions.<sup>132</sup> Although the D.C. Circuit previously upheld the Department of Energy's reliance on assumption that U.S. LNG exports would principally displace other fossil fuels and therefore have a negligible impact on global greenhouse gas emissions, this recent research and information about global energy markets was not before the

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(March 2022), at 4, available at <https://www.eia.gov/outlooks/aeo/assumptions/pdf/natgas.pdf> (attached).

<sup>129</sup> International Energy Agency, *Golden Rules for a Golden Age of Gas*, Ch. 2 p. 91 (May 2012), available at [https://iea.blob.core.windows.net/assets/8422ef9a-9ae8-4637-ab1c-ddb160ab7c59/WEO\\_2012\\_Special\\_Report\\_Golden\\_Rules\\_for\\_a\\_Golden\\_Age\\_of\\_Gas.pdf](https://iea.blob.core.windows.net/assets/8422ef9a-9ae8-4637-ab1c-ddb160ab7c59/WEO_2012_Special_Report_Golden_Rules_for_a_Golden_Age_of_Gas.pdf) (attached).

<sup>130</sup> EIA, *International Energy Outlook 2019* at 31 (Sept. 2019), available at <https://www.eia.gov/outlooks/ieo/pdf/ieo2019.pdf> (attached).

<sup>131</sup> International Energy Agency, *Golden Rules for a Golden Age of Gas*, Ch. 2 p. 91 (2012).

<sup>132</sup> Gilbert, A. Q. & Sovacool, B. K., *US liquefied natural gas (LNG) exports: Boom or bust for the global climate?*, *supra* note 114.

agency in those cases.<sup>133</sup> This new information demonstrates that there are now tools to perform a more careful and informative analysis than was done in that case.

## **ii. The 2019 and 2014 Lifecycle Analyses Understate Emissions**

In addition to asking the wrong questions, DOE’s prior lifecycle analyses are factually unsupported and understate emissions, as Sierra Club and NRDC have previously explained.

First, the 2019 analysis assumes that the “upstream emission rate” or “leak rate” of U.S. LNG exports—the amount of methane that is emitted to the atmosphere during production, processing, and transportation of gas to the export facility—is 0.7% of the gas delivered.<sup>134</sup> Studies measuring actual emissions find much higher leak rates: a 2020 study that found that oil and gas production in the Permian basin had a leak rate of roughly 3.5% or 3.7%.<sup>135</sup> A 2022 study found leak rates in the New Mexico Permian basin to average 9.4%, with some statistical models used placing the average as high as 11%<sup>136</sup>. As we have previously explained, there are many reasons to believe these atmospheric measurements are more reliable than the “bottom up” estimates used by DOE—notably, the fact that bottom up estimates poorly represent the rare but severe major leaks that constitute a large fraction of upstream emissions.<sup>137</sup> Every year, new

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<sup>133</sup> See, e.g., *Sierra Club v. United States Dep’t of Energy*, 867 F.3d 189, 202 (D.C. Cir. 2017).

<sup>134</sup> 2019 Life Cycle GHG Perspective at 27.

<sup>135</sup> See Yuzhong Zhang *et al.*, *Quantifying methane emissions from the largest oil-producing basin in the United States from space*, SCIENCE ADVANCES (Apr. 22, 2020), DOI: 10.1126/sciadv.aaz5120, available at <https://advances.sciencemag.org/content/6/17/eaaz5120/tab-pdf> (attached); see also Environmental Defense Fund: New Data: Permian Oil & Gas Producers Releasing Methane at Three Times National Rate (Apr. 7, 2020), available at <https://www.edf.org/media/new-data-permian-oil-gas-producers-releasing-methane-three-times-national-rate> (attached).

<sup>136</sup> Chen, *et al.*, *Quantifying Regional Methane Emissions in the New Mexico Permian Basin with a Comprehensive Aerial Survey*, Environmental Science and Technology (March 23, 2022), DOI: 10.1021/acs.est.1c06458, available at <https://pubs.acs.org/doi/10.1021/acs.est.1c06458> (attached).

<sup>137</sup> Sierra Club, Comment on 2019 Update to Life Cycle Greenhouse Gas Perspective, at 6-8 (Oct. 21, 2019), available at <https://fossil.energy.gov/app/DocketIndex/docket/DownloadFile/604>. (attached).



research further affirms that gas production emits greater amounts of methane than what DOE's analyses have assumed, despite ongoing efforts to reduce methane emissions.<sup>138</sup> At a minimum, DOE must review and to respond to this research before approving any further LNG export applications.

The 2019 GHG report further underestimates emissions at other stages of the LNG lifecycle. For one, DOE cannot ignore emissions associated with transporting LNG from the import terminal to the end user. The report states that "For this analysis, it was assumed that the natural gas power plant in each of the import destinations is located close to the LNG port, so no additional pipeline transport of natural gas is modeled in the destination country."<sup>139</sup> This assumption is improper. Indeed, in China, LNG is being transported from terminal to end users by *truck*, a process that presumably entails significant emissions even greater than transportation by pipeline.<sup>140</sup> This is not a fringe or one-off occurrence: it already accounts for 12 percent of China's LNG use, and one developer "is using it as a primary way to move LNG from its new terminal."<sup>141</sup> Even where LNG is moved by from the terminal to end users by pipelines, the emissions can potentially be significant. Even if the journey from regasification to end use may be shorter than the journey from the well to the liquefaction terminal, the emissions per pipeline mile may be higher for this leg of the journey. The Intergovernmental Panel on Climate Change's ("IPCC") most recent "Guidelines for National Greenhouse Gas Inventories" explains

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<sup>138</sup> See NRDC, *Sailing to Nowhere: Liquefied Natural Gas Is Not an Effective Climate Strategy* (Dec. 2020), available at <https://www.nrdc.org/sites/default/files/sailing-nowhere-liquefied-natural-gas-report.pdf> (attached).

<sup>139</sup> 2019 Report at 4.

<sup>140</sup> Murtaugh, *Welcome to Gas Pipelines on Wheels*, Bloomberg Business (Nov. 5, 2018), available at <https://www.bloomberg.com/news/articles/2018-11-05/china-gas-craze-gets-help-from-trucks-as-pipelines-can-t-keep-up> (attached).

<sup>141</sup> *Id.*

that, measured against emissions in North America and Western Europe, “in developing countries and countries with economies in transition . . . there are [generally] much greater amounts of fugitive emissions per unit of activity.”<sup>142</sup> In light of the finite number of LNG import facilities, it is inappropriate for DOE to simply assume that end users are adjacent to import terminals, rather to examine whether this is in fact the case.

Finally, DOE’s GHG reports listed in the Federal Register notice, the most recent of which is from 2019, should be reevaluated in light of all the recent developments in climate science and policy as described throughout this protest, including but not limited to the following: CEQ’s interim climate guidance; the Biden Administration’s adoption of ambitious climate goals to reach our Paris climate goals; recent data on higher-than-expected upstream gas leakage rates; Russia’s invasion of Ukraine, which has upended the global gas market; the enactment of the Inflation Reduction Act into law; and several recent IPCC reports which call for more urgent GHG reduction measures each year.

In addition, the last few years have seen an unprecedented and unexpected surge in renewable energy production and deployment, which was not considered in any of the DOE GHG studies. For example,

The global energy crisis is driving a sharp acceleration in installations of renewable power, with total capacity growth worldwide set to almost double in the next five years, overtaking coal as the largest source of electricity generation along the way and helping keep alive the possibility of limiting global warming to 1.5 °C, the IEA says in a new report.

Energy security concerns caused by Russia’s invasion of Ukraine have motivated countries to increasingly turn to renewables such as solar and wind to reduce reliance on imported fossil fuels, whose prices have spiked dramatically. Global renewable power capacity is now expected to grow by 2 400 gigawatts (GW) over the 2022-2027 period,

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<sup>142</sup> Intergovernmental Panel on Climate Change, *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. Vol. 2 Ch. 4, at 4.46; available at [https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2\\_Volume2/V2\\_4\\_Ch4\\_Fugitive\\_Emissions.pdf](https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_4_Ch4_Fugitive_Emissions.pdf) (attached).

an amount equal to the entire power capacity of China today, according to *Renewables 2022*, the latest edition of the IEA's annual report on the sector.

This massive expected increase is 30% higher than the amount of growth that was forecast just a year ago, highlighting how quickly governments have thrown additional policy weight behind renewables. The report finds that renewables are set to account for over 90% of global electricity expansion over the next five years, overtaking coal to become the largest source of global electricity by early 2025.<sup>143</sup>

Based on the rapid growth of renewables, the U.S. Energy Information Administration now predicts:

[R]enewable energy sources will grow the most during the next two years, with about 7 gigawatts (GW) of new wind capacity and 29 GW of new solar PV capacity being installed in 2023. These additions will result in renewable energy resources other than hydropower accounting for 19% of generation in 2024 compared with 15% in 2022.<sup>144</sup>

Even if the domestic and global growth in renewable energy sources that has occurred in the last few years has been within the bounds of previous estimates; the latest *projections* for explosive growth of renewable energy sources in the decades to come have occurred since DOE's last analyses of gas exports, which has the potential to drastically alter the conclusions of those studies. DOE must consider this information in new analyses.

**f. DOE must evaluate the cumulative impacts of MPL's life-cycle GHG emissions, combined with past, present, and reasonably foreseeable export authorizations.**

In addition to analyzing a proposed action's direct and indirect effects, NEPA and CEQ's regulations require an agency to also consider the proposed action's cumulative effects. *See* 40 CFR 1502.16, 1508.1(g)(3). Cumulative effects are effects on the environment that result from

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<sup>143</sup> International Energy Agency, Renewable power's growth is being turbocharged as countries seek to strengthen energy security (Dec. 6, 2022), available at <https://www.iea.org/news/renewable-power-s-growth-is-being-turbocharged-as-countries-seek-to-strengthen-energy-security> (attached).

<sup>144</sup> EIA, Short-Term Energy Outlook (March 2023), available at [https://www.eia.gov/outlooks/steo/pdf/steo\\_full.pdf](https://www.eia.gov/outlooks/steo/pdf/steo_full.pdf) (attached)

the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.<sup>145</sup>

The CEQ's GHG Guidance notes: "Given that climate change is the result of the increased global accumulation of GHGs climate effects analysis is inherently cumulative in nature." 88 Fed Reg. 1206. It further explains:

In evaluating a proposed action's cumulative climate change effects, an agency should consider the proposed action in the context of the emissions from past, present, and reasonably foreseeable actions. When assessing cumulative effects, agencies should also consider whether certain communities experience disproportionate cumulative effects, thereby raising environmental justice concerns.

*Id.* at 1205-06.

The DOE should evaluate the cumulative GHG emissions of its past, present, and reasonably foreseeable LNG export authorizations; and evaluate whether additional exports like the amounts sought in the MPL application, added to the cumulative amounts, are consistent with the Biden Administration's climate goals, and the remaining carbon budget, as set forth below. See *WildEarth Guardians v. BLM*, 457 F. Supp. 3d 880, 894 (D. Mont. 2020) (citations omitted)( "if BLM ever hopes to determine the true impact of its projects on climate change, it can do so only by looking at projects in combination with each other, not simply in the context of state and nation-wide emissions. Without doing so, the relevant 'decisionmaker' cannot determine 'whether, or how, to alter the program to lessen cumulative impacts' on climate change.")

Since the start of the hydraulic fracturing boom in the U.S., DOE has approved at least 40 export authorizations for LNG facilities located in the U.S.; and it has approximately 25

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<sup>145</sup> 40 CFR 1508.1(g)(3).

additional export applications pending before it. DOE has approved gas exports from U.S. LNG terminals in the amount of 68.44 Bcf/day of exports to FTA countries and 63.44 Bcf/day of exports to non-FTA countries.<sup>146</sup>

Although not all of the approved export projects have been built or have come online, DOE has already approved far more total gas exports than the highest amounts evaluated in its studies. For example, the 2015 Study looked at exports in the range of 12-20 Bcf/day. Although DOE's 2018 study evaluated several dozen more scenarios, including some using very high export levels, that analysis was based on 2017 data which needs to be updated for all the reasons set forth herein. An updated analysis of various scenarios, based on recent data, events, and projects, will help inform DOE decision-makers whether additional exports to non-FTA countries in the amount sought by MPL is in the public interest.

To the extent that DOE's discretion to approve or deny export applications to free-trade agreement (FTA) countries is limited, it clearly has the discretion to deny export applications to non-FTA countries based on whether the project would be in the public interest. Therefore, evaluating the cumulative effects of all past, present, and reasonably foreseeable export authorizations, for example to determine whether and to what extent they are consistent with reaching our climate goals, would be useful to DOE decisionmakers in making public interest determinations for export applications to non-FTA countries.

The DOE should also evaluate the cumulative climate impacts of past, present, and reasonably foreseeable LNG exports (*i.e.*, re-exports) it has approved out of Mexico, and/or specifically on the west coast of Mexico. This is a narrower and geographically-similar subset of all DOE-approved LNG export projects, which share or compete for the same upstream gas

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<sup>146</sup> Summary of LNG Export Applications (March. 14, 2023) (attached).

supply and pipeline capacity (and which will require additional pipelines, as explained above), and which are primarily designed for LNG exports to Asian markets.

As set forth above, DOE has already approved at least four export applications for LNG projects in Mexico, totaling 3.5 Bcf/y. DOE now has at least 6 more applications before it (including the instant docket), which would authorize an additional 5.86 Bcf/y if approved. The DOE should evaluate the cumulative impacts, including but not limited to life-cycle GHG emissions and climate impacts, of these Mexican export projects.

Finally, DOE should prepare a Programmatic EIS (PEIS) to evaluate its LNG gas export authorizations writ large; and/or a PEIS that is limited to LNG gas export projects out of Mexico. CEQ's GHG Guidance explains:

In the context of long-range energy, transportation, resource management, or similar programs or strategies, an agency may decide that it would be useful and efficient to provide an aggregate analysis of GHG emissions or climate change effects in a programmatic analysis and then incorporate it by reference into future NEPA reviews.  
...

A programmatic NEPA review also may serve as an efficient mechanism in which to assess Federal agency efforts to adopt broad-scale sustainable practices for energy efficiency, GHG emissions avoidance and emissions reduction measures, petroleum product use reduction, and renewable energy use, as well as other sustainability practices. *See E.O. 14057, supra* note 7 (establishing government-wide and agency GHG reduction goals and targets).

At 1210-1211. A PEIS for DOE's overall gas export program would be useful to evaluate the environmental impacts, including but not limited to the GHG emissions, which would help determine the appropriate level of overall gas exports that would be in the public interest, and align with our GHG reduction goals.

**g. DOE must quantify the GHG emissions attributable to the MPL export, and calculate the social cost**

The DOE EIS for the MPL export proposal should first calculate the life-cycle GHG emissions associated with the amount of gas that MPL seeks to export. “The reasonably foreseeable indirect effects ... would include effects associated with the processing, refining, transporting, and end-use of the fossil fuel... including combustion of the resource to produce energy.”<sup>147</sup>

As set forth in the GHG Guidance:

[W]hen considering GHG emissions and their significance, agencies should use appropriate tools and methodologies to quantify GHG emissions, compare GHG emission quantities across alternative scenarios (including the no action alternative), and place emissions in relevant context, including how they relate to climate action commitments and goals. This approach allows an agency to present the environmental and public health effects of a proposed action in clear terms and with sufficient information to make a reasoned choice between no action and other alternatives and appropriate mitigation measures. This approach will also ensure the professional and scientific integrity of the NEPA review. *See* 40 CFR 1502.23 (requiring agencies to ensure the professional and scientific integrity of the discussions and analyses in environmental impact statements).<sup>148</sup>

DOE should use the specific methods described in detail by the GHG Guidance at pages 1201-02.

Next, the MPL EIS should “disclose and provide context for GHG emissions and climate effects to help decision makers and the public understand proposed actions’ potential GHG emissions and climate change effects” by applying “the best available estimates of the [social cost of greenhouse gas emissions (“SC-GHG”)].”<sup>149</sup> The GHG Guidance explains the purpose behind this requirement:

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<sup>147</sup> 88 Fed. Reg. 1204.

<sup>148</sup> *Id.* at 1201.

<sup>149</sup> *Id.* at 1202; *See* IWG SC–GHG, U.S. Gov’t, *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990* (Feb.

The SC–GHG estimates allow monetization (presented in U.S. dollars) of the climate change effects from the marginal or incremental emission of GHG emissions, including carbon dioxide, methane, and nitrous oxide.

These 3 GHGs represent more than 97 percent of U.S. GHG emissions. The SC–GHG provides an appropriate and valuable metric that gives decision makers and the public useful information and context about a proposed action’s climate effects even if no other costs or benefits are monetized, because metric tons of GHGs can be difficult to understand and assess the significance of in the abstract. The SC–GHG translates metric tons of emissions into the familiar unit of dollars, allows for comparisons to other monetized values, and estimates the damages associated with GHG emissions over time and associated with different GHG pollutants. The SC–GHG also can assist agencies and the public in assessing the significance of climate impacts. This is a simple and straightforward calculation that should not require additional time or resources.<sup>150</sup>

In accordance with the GHG Guidance, DOE should apply the SC-GHG calculations to the MPL export proposal, and not only simply disclose the estimated costs, but incorporate those cost estimates into the decision-making process. For example, in evaluating whether the MPL exports would be in the “public interest,” DOE must weigh the SC-GHG estimates against any purported economic benefits.

**h. DOE must evaluate whether the GHG emissions of the MPL proposal are consistent with climate goals**

In evaluating the life-cycle GHG emissions of the gas associated with MPL, the EIS should consider “how they relate to climate action commitments and goals.”<sup>151</sup> The GHG analysis should “be complemented with evaluation that compares the proposed action’s and reasonable alternatives’ energy use against scenarios or energy use trends that are consistent with achieving science-based GHG reduction goals, such as those pursued in the *Long-Term Strategy of the United States*. ”<sup>152</sup>

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2021), [https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument\\_SocialCostofCarbonMethaneNitrousOxide.pdf](https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf) (attached).

<sup>150</sup> 88 Fed. Reg. 2203.

<sup>151</sup> 88 Fed. Reg. at 1198.

<sup>152</sup> 88 Fed. Reg. 1205, citing U.S. Dep’t of State (DOS) & U.S. Exec. Off. Of the President



For actions “with *relatively large* GHG emissions or reductions or that will perpetuate reliance on GHG-emitting energy sources,” CEQ advises agencies to explain how the proposed action and alternatives would “help meet or detract from achieving relevant climate action goals and commitments.”<sup>153</sup>

With each passing year, scientists are becoming more urgent in sounding the alarm that society needs to rapidly transition away from fossil fuels to stave off the worst effects of climate change. To do so, the U.S. and other governments around the world have implemented GHG reduction targets and other climate goals.

Current U.S. climate policy commits the U.S. to reduce GHGs by 50-52% below 2005 levels by 2030.<sup>154</sup> President Biden further set national goals to “achieve a carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by no later than 2050.”<sup>155</sup>

The GHG emissions of MPL must be evaluated in terms of whether they are consistent with these reduction goals; rather than measured against the *status quo* of burning increasing (or even current) amounts of fossil fuels. If the MPL GHG emissions would not be consistently with meeting our GHG-reduction goals, the project cannot be in the public interest.

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(EOP), *The Long-Term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050* (Nov. 2021), <https://www.whitehouse.gov/wp-content/uploads/2021/10/US-Long-Term-Strategy.pdf> (attached).

<sup>153</sup> 88 Fed. Reg. 1203 (emphasis added).

<sup>154</sup> White House, “FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies,” (April 22, 2021), available at <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/>.

<sup>155</sup> Executive Order 14057, “Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability” (Dec. 8, 2021), available at <https://www.federalregister.gov/documents/2021/12/13/2021-27114/catalyzing-clean-energy-industries-and-jobs-through-federal-sustainability>. (attached).

**h. DOE must evaluate whether the GHG emissions of the MPL proposal are consistent with the remaining carbon budget**

Similarly, the MPL GHG emissions must be evaluated to determine if they are consistent with staying within the remaining carbon budget. The carbon budget offers a cap on the remaining stock of GHGs that can be emitted while still keeping global average temperature rise below scientifically-established warming thresholds—beyond which climate change impacts may result in catastrophic and irreparable harm to the biosphere and humanity. The use of a carbon budget tool is essential for evaluating whether a given project would help meet or detract from achieving climate goals.

The Tenth Circuit Court of Appeals recently described the carbon budget as an accepted methodology “deriv[ing] from science suggesting the total amount of GHGs that are emitted is the key factor to determine how much global warming occurs. The carbon budget is a finite amount of total GHGs that may be emitted worldwide, without exceeding acceptable levels of global warming.”<sup>156</sup> The court held that BLM violated the law by failing to consider the impacts of projected GHG emissions from new oil and gas well drilling approvals because it “neither applied the carbon budget method nor explained why it did not.”<sup>157</sup>

The GHG Guidance recommends that agencies should place GHG emissions “in the context of relevant climate action goals and commitments including Federal goals, international agreements, state or regional goals, Tribal goals, agency-specific goals, or others as

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<sup>156</sup> *Diné Citizens Against Ruining Our Env.*, 2023 WL 1430620 at \* 16

<sup>157</sup> *Id.* (“NEPA does not give BLM the discretion to ignore the impacts to the environment when there are methods for analyzing those impacts. So, while it is correct that BLM need not use any specific methodology, it is not free to omit the analysis of environmental effects entirely when an accepted methodology exists to quantify the impact of GHG emissions from the approved APDs.”)

appropriate.”<sup>158</sup> Perhaps the most relevant climate action commitment for purposes of CEQ’s guidance is the United States’ commitment to the climate change target of holding the long-term global average temperature “to well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius above pre-industrial levels” under the Paris Agreement.<sup>159</sup> The Paris Agreement established the 1.5 degree Celsius climate target given the evidence that 2 degrees of warming would lead to catastrophic climate harms.<sup>160</sup> Scientific research has estimated the global carbon budget—the remaining amount of carbon dioxide that can be emitted—for maintaining a likely chance of meeting the Paris climate targets, providing clear benchmarks for the United States and global climate action.<sup>161</sup>

Immediate and aggressive greenhouse gas emissions reductions are necessary to keep warming well below a 2 degrees Celsius rise above pre-industrial levels. The IPCC Fifth Assessment Report and other expert assessments have established global carbon budgets, or the total amount of carbon that can be burned while maintaining some probability of staying below a given temperature target. According to the IPCC, total cumulative anthropogenic emissions of CO<sub>2</sub> must remain below about 1,000 GtCO<sub>2</sub> from 2011 onward for a 66 percent probability of limiting warming to 2 degrees Celsius above pre-industrial levels, and to 400 GtCO<sub>2</sub> from 2011

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<sup>158</sup> 88 Fed. Reg. at 1203.

<sup>159</sup> United Nations Framework Convention on Climate Change, Conference of the Parties (Nov. 30-Dec. 11, 2015), Adoption of the Paris Agreement Art. 2, U.N. Doc. FCCC/CP/2015/L.9 (Dec. 12, 2015), available at: <http://unfccc.int/resource/docs/2015/cop21/eng/109.pdf> (“Paris Agreement”) (attached). The United States signed the Paris Agreement on April 22, 2016 as a legally binding instrument through executive agreement, and the treaty entered into force on November 4, 2016.

<sup>160</sup> IPCC, Global Warming of 1.5°C, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (Oct. 6, 2018), available at: <http://www.ipcc.ch/report/sr15/>.

<sup>161</sup> *Id.*

onward for a 66 percent probability of limiting warming to 1.5 degrees Celsius.<sup>162</sup> These carbon budgets have been reduced to 850 GtCO<sub>2</sub> and 240 GtCO<sub>2</sub>, respectively, from 2015 onward.<sup>163</sup> Most recently, an updated analysis of carbon budgets in the IPCC's Sixth Assessment Report estimates that the remaining global carbon budget from the beginning of 2020 is now only 400 and 300 GtCO<sub>2</sub> for maintaining 67 percent and 83 percent likelihoods, respectively, of limiting global warming to 1.5 degrees Celsius.<sup>164</sup> Published scientific studies have estimated the United States' portion of the global carbon budget by allocating the remaining global budget across countries based on factors including equity principles and economics. Estimates of the remaining U.S. carbon budget consistent with meeting a 1.5°C target are negative or near zero and very limited.<sup>165</sup> Therefore, whatever remaining carbon budget the U.S. has left, if any, is very small and rapidly being consumed.

Notably, emissions from fossil fuels produced on federal lands represent a quarter of *all* CO<sub>2</sub> emissions in the U.S.<sup>166</sup> Carbon emissions from already leased fossil fuel resources on

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<sup>162</sup> *Id.*

<sup>163</sup> The 2018 IPCC Special Report on Global Warming of 1.5 degrees Celsius estimated the carbon budget for a 66 percent probability of limiting warming to 1.5 degrees at 420 GtCO<sub>2</sub> and 570 GtCO<sub>2</sub> from January 2018 onwards, depending on the temperature dataset used. At the current emissions rate of 42 GtCO<sub>2</sub> per year, this carbon budget would be expended in just 10 to 14 years. *See* IPCC, Global Warming of 1.5°C. Most recently, an updated analysis of carbon budgets in the IPCC's Sixth Assessment Report estimates that the remaining global carbon budget from the beginning of 2020 is now only 400 and 300 GtCO<sub>2</sub> for maintaining 67 percent and 83 percent likelihoods, respectively, of limiting global warming to 1.5 degrees Celsius.

<sup>164</sup> IPCC, 2021: Summary for Policymakers at Table SPM.2 (attached).

<sup>165</sup> Van den Berg, Nicole et al., Implications of various effort-sharing approaches for national carbon budgets and emission pathways, *Climatic Change* 162: 1805-1822 (2020), <https://link.springer.com/article/10.1007%2Fs10584-019-02368-y> (attached); Dooley, Kate et al., Ethical choices behind quantifications of fair contributions under the Paris Agreement, *Nature Climate Change* 11: 300-305 (2021), <https://www.nature.com/articles/s41558-021-01015-8> (attached).

<sup>166</sup> Merrill, M.D., Sleeter, B.M., Freeman, P.A., Liu, J., Warwick, P.D., and Reed, B.C., Federal lands greenhouse gas emissions and sequestration in the United States—Estimates for 2005–14: U.S. Geological Survey Scientific Investigations Report 2018–5131, 31 (2018) (attached).

federal lands alone (30 to 43 GtCO<sub>2e</sub>) would essentially exhaust the U.S. carbon budget for a 1.5 degrees target if these leased fossil fuels are fully extracted and burned. The U.S. oil and gas industry is therefore on track to account for 60 percent of the world's projected growth in oil and gas production between now and 2030—the time period over which the IPCC concluded that global carbon dioxide emissions should be roughly halved to meet the 1.5 degrees Paris Agreement target.<sup>167</sup> Between 2018 and 2050, the United States is poised to unleash the world's largest burst of CO<sub>2</sub> emissions from new oil and gas development—primarily from shale and largely dependent on fracking—estimated at 120 billion metric tons of CO<sub>2</sub> which is equivalent to the lifetime CO<sub>2</sub> emissions of nearly 1,000 coal-fired power plants. Based on a 1.5 degrees IPCC pathway, U.S. production alone would exhaust nearly 50 percent of the world's total allowance for oil and gas by 2030 and exhaust more than 90 percent by 2050. Additionally, if U.S. coal production is to be phased out over a timeframe consistent with equitably meeting the Paris goals, at least 70 percent of U.S. coal reserves in already-producing mines must stay in the ground. In short, if not curtailed, U.S. fossil fuel expansion will impede the world's ability to meet the Paris climate targets and preserve a livable planet. Agencies need to recognize these factor in their analysis of projects—particularly fossil-fuel development projects—that propose to add to the atmospheric burden of CO<sub>2e</sub>. The consideration of GHG emissions and climate change must necessarily be made against this backdrop.

DOE's EIS for MPL should apply the carbon budget tool for evaluating whether MPL would help meet or detract from achieving climate goals.

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<sup>167</sup> Intergovernmental Panel on Climate Change, Global Warming of 1.5°C, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (2018), available at: <http://www.ipcc.ch/report/sr15/> at SPM-15 (attached).

Along the same lines, DOE’s evaluation of the MPL export application should be measured against a “no action alternative,” or baseline, that assumes a continued reduction of GHG emissions in years to come commensurate with meeting our climate reduction goals. As CEQ explains, an EIS “must identify the current and projected future state of the affected environment without the proposed action (*i.e.*, the no action alternative), which serves as the baseline for considering the effects of the proposed action and its reasonable alternatives.”<sup>168</sup>

That analysis:

[S]hould be complemented with evaluation that compares the proposed action’s and reasonable alternatives’ energy use against scenarios or energy use trends that are consistent with achieving science-based GHG reduction goals, such as those pursued in the *Long-Term Strategy of the United States*.<sup>169</sup>

When assuming fossil fuel reliance decades into the future, the frequent agency conclusion is that a proposed fossil fuel project will primarily substitute for other fossil fuels instead of renewables, thus minimizing a project’s climate impact. But the Paris Agreement recognizes that the status quo (*i.e.*, current or increasing levels of fossil fuel use) is unsustainable, and will lead to disastrous global consequences. Thus, the MPL emissions should be measured against a Paris-compliant future, which would reveal significantly larger net GHG emissions resulting from approval of the MPL application.

Finally, the GHG impacts of gas exports to non-FTA countries like those requested by the MPL application should undergo particular scrutiny, considering DOE’s discretion may be limited with respect to exports to FTA countries. In other words, while the GHG emissions and global climate impacts attributable to gas exports will be the same regardless of whether the exports go to FTA or non-FTA countries, DOE’s ability to deny export projects based on the

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<sup>168</sup> 88 Fed. Reg. at 1204.

<sup>169</sup> *Id.* at 1205.

public interest, and based on whether the exports are consistent with our climate goals, are limited to exports to non-FTA countries. As such, denying additional exports to non-FTA countries represent the best opportunity for DOE to curb exports in order to keep GHG emissions in check.

Indeed, Congress must have had good reason to differentiate how DOE is supposed to evaluate exports to FTA versus non-FTA countries, with the latter requiring a project-by-project public interest evaluation. Nonetheless, DOE has treated exports to FTA and non-FTA countries the same and essentially ignored the statutory distinction. DOE interprets the statute as creating a presumption that gas exports are in the public interest, even for non-FTA countries. To Sierra Club's knowledge, DOE has never found an instance where the public interest "presumption" was rebutted for exports to non-FTA countries; nor has it ever denied an export application to non-FTA countries. To date, DOE has approved almost the same amount of exports to non-FTA countries (63.44 Bcf/d) as exports to FTA countries (68.44 Bcf/d). DOE's equal treatment of exports to FTA and non-FTA countries is arbitrary and capricious and violates the NGA.

**i. DOE cannot assume that MPL's gas exports will primarily displace coal, as opposed to renewable energy, at the end-use burning stage**

In evaluating the GHG emissions and climate impacts of the MPL application, DOE cannot assume that gas exported from MPL will primarily displace coal as opposed to renewable and/or low-carbon energy sources. Instead, it must analyze how the MPL-exported gas will influence GHG emissions and what types of fuel it might displace, based on the specific location of the gas. Although one court held that DOE was not required to perform a detailed displacement analysis for exports to non-FTA nations generally because it would be too speculative and would involve too many uncertainties;<sup>170</sup> in contrast here, DOE can and should

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<sup>170</sup> *Sierra Club v. United States Dep't of Energy*, 867 F.3d 189, 202 (D.C. Cir. 2017)(holding

do so here because DOE can easily determine where MPL's proposed gas exports are primarily going: South Korea, Japan, and China. As set forth above, MPL has marketed its LNG facility as a more-cost effective option for shipping gas to Asian markets, because it's location on Mexico's west coast would allow ships to forgo the Panama Canal. And MPL has announced agreements with specific companies, in specific locations, that will purchase and offload the LNG shipments from MPL. For example, in 2022, MPL announced it had entered into a sales and purchase agreement with Shell Eastern Trading (Pte) Ltd. to purchase 2.6 metric tons/year (mmt) of MPL LNG over a term of 20 years.<sup>171</sup> In addition, "China's Guangzhou Development Group Inc. also disclosed earlier [last] year it had signed a 20-year binding offtake agreement with MPL for about 2 mmt from the proposed [MPL] terminal."<sup>172</sup> Most recently, MPL announced it had entered into two 20-year sales and purchase agreements with ExxonMobil LNG Asia Pacific to purchase 2.0 million metric tons/year (mmt) of MPL's gas.<sup>173</sup>

Because DOE has the necessary information, DOE can and should evaluate how and to what extent MPL exports will displace coal versus other types of gas, and what level of GHG emissions will result. Even if such an analysis as applied to *all exports to non-FTA countries* would be "too speculative" and would "require consideration of the dynamics of all energy markets in LNG-importing nations", *Sierra Club*, 867 F.3d at 202; that is not true for the MPL

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DOE should not be required to evaluate "the dynamics of *all energy markets in LNG-importing nations...*"(emphasis added).

<sup>171</sup> Natural Gas Intel, *Shell Signs Binding Offtake Agreement for Mexico LNG Terminal* (July 12, 2022), available at <https://www.naturalgasintel.com/shell-signs-binding-lng-offtake-agreement-for-mexico-lng-terminal/> (attached).

<sup>172</sup> Natural Gas Intel, *Offtaker Interest Heating Up for Mexico LNG Projects* (April 4, 2022), available at <https://www.naturalgasintel.com/offtaker-interest-heating-up-for-mexico-lng-projects/> (attached).

<sup>173</sup> Natural Gas Intel, *Exxonmobil Affiliate Signs Binding Offtake Agreement with Mexico LNG Project* (Feb. 7, 2023), available at <https://www.naturalgasintel.com/exxonmobil-affiliate-signs-binding-offtake-deals-with-mexico-lng-project/> (attached).



export project, where DOE can easily determine the final destination of much, if not all, of the exported gas.

NEPA requires agencies to provide a clear basis for choice among considered alternatives,<sup>174</sup> and CEQ's Interim Guidance correctly notes that substitution analysis related to fossil fuel proposals has proven particularly challenging for agencies.

Even if DOE were correct in assuming the gas from MPL's exports to non-FTA countries would largely displace coal in the short-term (which Sierra Club does not concede), it is arbitrary to assume that would be true for the 30-year time-frame of the project. DOE cannot assume that economic demand for a specific commodity, such as coal, oil, or gas, will remain unchanged in the face of new supply.<sup>175</sup> Such assumptions are squarely at odds with the facts: plainly, both the nation and the world will be moving aggressively away from fossil fuels in the years ahead and agencies cannot simply project today's fuels uses over decades to make useful predictions. Indeed, it is the comparison of project emissions to this unrealistic future that lays at the heart of misleading conclusions that major fossil fuel projects will have no climate impacts.

DOE's EIS should follow instructive D.C. Circuit caselaw rejecting agency attempts to dodge meaningful analysis based on vague statements related to market substitution. In its NEPA review for the Sabal Trail gas pipeline, the Federal Energy Regulatory Commission ("FERC")'s assessment of market impacts was that the project's GHG emissions "might be partially offset" by the market replacing the project's gas with either coal or other gas supply.<sup>176</sup> The D.C. Circuit rejected FERC's failure to study this issue, stating, "[a]n agency decisionmaker reviewing this

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<sup>174</sup> 42 U.S.C. §§ 4332(C)-(E), 40 C.F.R. 1502.14.

<sup>175</sup> Peter Howard and Max Sarinsky, *Best Practices for Energy Substitution Analysis*, Institute for Policy Integrity, at 3 (Dec. 2022).

<sup>176</sup> *Sierra Club v. Fed. Energy Regulatory Comm'n*, 867 F.3d 1357, 1375 (D.C. Cir. 2017).

EIS would thus have no way of knowing whether total emissions, on net, will be reduced or increased by this project, or what the degree of reduction or increase will be. In this respect, then, the EIS fails to fulfill its primary purpose.”<sup>177</sup>

As the Ninth Circuit has made clear, despite modeling uncertainties, agencies must attempt to account for all reasonably foreseeable market changes, including changes internationally. In analyzing the effects of the Liberty oil and gas drilling project, the Bureau of Ocean Energy Management (“BOEM”) concluded initially that the no action alternative – rejecting the Liberty project – would, counterintuitively, increase greenhouse gas emissions by shifting production to foreign sources with comparatively weaker environmental protections.<sup>178</sup> But BOEM’s model assumed “foreign consumption of oil will remain static” were the Liberty project approved; crucially, this assumption ignored “basic economic principles” that are key to understanding climate impacts. As the Ninth Circuit explained, increasing the supply of fossil fuels such as oil (*i.e.*, approving the Liberty project) reduces prices; as price drops, foreign consumers will buy and consume more oil. *Id.* Thus, the Court concluded, emissions from predictable market responses, whether domestic or foreign, “are surely a ‘reasonably foreseeable’ indirect effect” that must be analyzed and disclosed under NEPA.<sup>179</sup> *Id.*

Finally, if DOE has the discretion to approve or deny exports to non-FTA countries based on whether those exports would be in the public interest; and if DOE has made prior public interest determinations based on the assumption that the exported gas would largely displace coal and/or high carbon fuel sources; it should consider certain conditions and/or mitigation measures to ensure the exported gas will, in fact, be displacing coal. For example, DOE should consider

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<sup>177</sup> *Id.*

<sup>178</sup> *Center for Biological Diversity v. Bernhardt*, 982 F.3d 723, 736 (9th Cir. 2020).

<sup>179</sup> *Id.*

limiting exports to non-FTA countries, or particular regions of those countries, where coal use is particularly high, and/or renewable energy use is relatively low.

**j. Must evaluate the extent to which the MPL expansion will lock-in increased use of fossil fuels**

While a GHG analysis that looks at fossil fuel emissions from fossil infrastructure projects is a useful component of a NEPA analysis, it does not tell the whole story. Agencies must also consider the extent to which construction of new fossil fuel infrastructure “locks in” long-term emissions and creates an affirmative barrier to decarbonization efforts. Privately financed infrastructure projects costing hundreds of millions if not billions of dollars will result in extraordinary pressure to continue using that infrastructure for many decades—well past the time when fossil fuel uses must be all but eliminated. And other private actors make their own investment decisions based on the existing of other infrastructure, much like the construction of a new crude oil pipeline both spurs new development projects as well as other feeder pipelines relying on that new infrastructure.

Moreover, projects that “lock in” fossil fuels also “lock out” low carbon alternatives, “either because it uses up finite capital or to the extent that it contributes to social or political norms, building in redundancy of supply that helps to increase investor confidence in the long-term prospects of that fuel, or contributes to economies of scale for fossil fuel processing technologies.”<sup>180</sup> Other useful questions for the agency to ask may include whether the project

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<sup>180</sup> Peter Erickson, Assessing the Greenhouse Gas Emissions Impact of New Fossil Fuel Infrastructure, Stockholm Env’t Inst. (2013), available at <https://mediamanager.sei.org/documents/Publications/SEI-DB-2013-Assessing-GHGs-fossil-fuel-infrastructure.pdf> (attached).

could be repurposed at some point for low-GHG alternatives, and at what cost. These are crucial considerations that must be disclosed in a NEPA analysis.

In short, a useful climate analysis for major infrastructure projects must go further than just disclosing lifecycle emissions. Instead, agencies should assess the extent to which the project risks becoming a stranded asset or, instead, will create pressures to continue operations for decades and/or generate other investments that promote fossil fuel use. In its final guidance CEQ should instruct agencies to disclose the risk of “locking in” GHG emissions and investments associated with fossil fuel infrastructure projects as part of their NEPA analyses.

### **III. Conclusion**

For the reasons stated above, Sierra Club’s motion to intervene in this docket should be granted. The proposed export increase is not consistent with the public interest and should be denied. DOE must not approve the application without reviewing whether current gas price spikes call into question DOE’s prior analyses and assumptions about the effects of increased exports on domestic gas production and prices. Nor DOE cannot approve the application without taking a hard look at foreseeable environmental impacts occurring throughout the LNG lifecycle.

Ultimately, the United States and nations around the globe have set ambitious but necessary goals for reducing greenhouse gas emissions during the proposed authorization period. Expanded gas exports and use cannot be reconciled with those goals, and this proposal should be denied.

/s/ Doug Hayes

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UNITED STATES OF AMERICA  
DEPARTMENT OF ENERGY  
OFFICE OF FOSSIL ENERGY

IN THE MATTER OF )  
 )  
Mexico Pacific Limited, LLC. ) FE Docket No. 22-167-LNG  
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**SIERRA CERTIFIED STATEMENT OF AUTHORIZED REPRESENTATIVE**

Pursuant to 10 C.F.R. § 590.103(b), I, Rebecca McCreary, hereby certify that I am a duly authorized representative of the Sierra Club, and that I am authorized to sign and file with the Department of Energy, Office of Fossil Energy and Carbon Management, on behalf of the Sierra Club, the foregoing documents and in the above captioned proceeding.

Executed at Boulder, CO on April 3, 2023.

/s/ Doug Hayes  
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UNITED STATES OF AMERICA  
DEPARTMENT OF ENERGY

OFFICE OF FOSSIL ENERGY

IN THE MATTER OF )  
 )  
Mexico Pacific Limited, LLC. ) FE Docket No. 18-145-LNG  
 )

**SIERRA CLUB VERIFICATION**

Pursuant to 10 C.F.R. § 590.103(b), I, Rebecca McCreary, hereby verify under penalty of perjury that I am authorized to execute this verification, that I have read the foregoing document, and that the facts stated therein are true and correct to the best of my knowledge.

Executed at Boulder, CO on April 3, 2023.

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