December 22, 2021

The Honorable Pete Buttigieg
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue SE
Washington, D.C. 20590

Re: Returning to a Ban on Bulk LNG by Rail
PHMSA-2021-0058 (HM-264A)

Dear Secretary Buttigieg,

The undersigned organizations write to urge the Department of Transportation to rescind the Trump-era regulation allowing the transportation of liquefied natural gas (LNG) by rail (the "LNG-by-rail rule").[1] The transportation of LNG by rail endangers communities and accelerates the climate crisis. Continuing to permit LNG by rail across the country would undermine the Biden Administration's commitment to environmental justice and the dramatic reduction of greenhouse gas emissions, particularly methane.

While we are grateful for the Department's recent proposal to suspend the LNG-by-rail rule,[2] we remain concerned that any replacement rule may still provide for the transportation of LNG by rail in some form. To protect our communities from lethal fires and explosions and from the ravages of climate change, the LNG-by-rail rule should be rescinded; further, the transportation of bulk LNG by rail should be banned.

We wish to raise two points in this letter. First, the transportation of LNG by rail endangers communities and heats the planet. Second, the Biden Administration should rescind the LNG-by-rail rule and restore a categorical prohibition on this dangerous practice.

I. The Transportation of LNG by Rail Endangers Communities and Heats the Planet

A. LNG by Rail Endangers Communities

LNG is highly flammable and explosive—as a consequence, transporting LNG by rail can expose fence-line communities to uncontrollable fires and devastating explosions. LNG fires

[1] "Hazardous Materials: Liquefied Natural Gas by Rail," Final Rule, 85 Fed. Reg. 44,994 (July 24, 2020).
[2] "Hazardous Materials: Suspension of HMR Amendments Authorizing Transportation of Liquefied Natural Gas by Rail," Notice of Proposed Rulemaking, 86 Fed. Reg. 61,731 (Nov. 8, 2021).

are hotter and burn more rapidly than fires caused by oil or gasoline.[3] And once ignited, LNG fires are extremely difficult to control—emergency responders can only extinguish "very small" LNG fires.[4] In most cases, LNG fires continue until they consume all the available gas—which, for a fire burning a rail car's worth of LNG, could amount to thousands of gallons of burned gas.[5]

If LNG does not immediately ignite after leaking from its container, it can pool in low-lying areas like sewers or ditches, causing fires up to 1.5 miles away from the source of release and second degree burns in people located up to 0.4 miles away from the fire.[6] If not ignited, these LNG pools can warm from their liquid state into harmful, flammable vapor,[7] aggregating into low-lying flammable clouds that spread even farther than the vapor clouds formed by other hydrocarbons like oil,[8] which makes it more likely that a cloud composed of gas will reach an ignition source.[9]

Fires involving LNG can also lead to boiling liquid expanding vapor explosions or "BLEVEs," which occur when an LNG container such as a tank car is heated to the point of rupturing. When the pressure of the container is released, LNG can rapidly reach its boiling point and expand to gas form, which can cause a fireball, create a blast wave, and shoot shrapnel from the broken LNG container.[10] A fireball created by spilled LNG can cause second degree burns in people located 0.14 miles away from the fireball.[11]

LNG spills are dangerous to human health and the environment even if they do not result in fires or explosions. LNG vapor clouds can displace breathable air and asphyxiate people trapped within them.[12] In addition, LNG is stored at extremely cold temperatures to keep it in a

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[3] *Rail Transportation of Liquefied Natural Gas: Safety and Regulation*, CONGRESSIONAL RESEARCH SERVICE (July 28, 2020), https://fas.org/sgp/crs/misc/R46414.pdf, at 2.
[4] *Id.*
[5] *Id.*
[6] NATIONAL ACADEMY OF SCIENCES, ENGINEERING, AND MEDICINE, PREPARING FOR LNG BY RAIL TANK CAR: A REVIEW OF A U.S. DOT SAFETY RESEARCH, TESTING, AND ANALYSIS INITIATIVE 30 (2021) (available at https://www.regulations.gov/document/PHMSA-2021-0058-0001). LNG pool fires are so intense that they are difficult to manage even in testing scenarios. An example of this can be seen in the use of liquefied petroleum gas (LPG) to simulate LNG pool fires during tests of portable tanks. An LNG fire would have burned 2-3 times hotter than the simulated fire. *Id.*
[7] *Id.*
[8] *Id.* at 19.
[9] *Id.* at 28-29.
[10] *What You Should Know About Liquefied Natural Gas and Rail Cars*, EARTHJUSTICE (Mar. 17, 2021), https://earthjustice.org/features/liquefied-natural-gas-lng-by-rail-tanker-car.
[11] It is important to note that estimates of the heat flux emitted by a fireball during the Trump-era rulemaking were likely conservative. The National Academies of Sciences, Engineering, and Medicine recommends that future tests employ a heat flux twice the level used during the initial tests. NATIONAL ACADEMY OF SCIENCES, ENGINEERING, AND MEDICINE, PREPARING FOR LNG BY RAIL TANK CAR: A REVIEW OF A U.S. DOT SAFETY RESEARCH, TESTING, AND ANALYSIS INITIATIVE 19 (2021), https://www.regulations.gov/document/PHMSA-2021-0058-0001.
[12] *Rail Transportation of Liquefied Natural Gas, supra* note 3, at 2. Since LNG must be stored at -260°F, it is a cryogenic liquid with the associated safety risks. *See* Berkeley College of Chemistry, *Section 7: Safe Handling of Cryogenic Liquids*, *in* Health & Safety Manual, Univ. of Cal. Berkeley (2021), https://chemistry.berkeley.edu/research-safety/manual/section-7/cryogenic-liquids.

liquid state, so direct contact with LNG causes frostbite or freeze burns that can result in tissue damage in people, animals, and plants.[13]

The transportation of LNG by rail also raises environmental justice concerns.[14] Communities located near potential rail routes are disproportionally environmental justice communities,[15] and under the LNG-by-rail rule, the burden of tracking and opposing LNG transport now falls to them. Since the LNG-by-rail rule eliminates notice and comment requirements that would have otherwise accompanied every instance of LNG transportation by rail, and given the misleading marketing efforts that describe LNG as a safe and clean energy source, many communities could remain unaware of the risks posed by these trains.[16] Moreover, environmental justice communities face additional economic and social challenges that preclude focusing time and resources investigating and opposing LNG transport by rail near their neighborhoods. As a result, these communities may be unable to protect themselves from the threat of LNG by rail absent a categorical prohibition of this activity.

B. LNG by Rail Heats Our Planet

As you are well aware, LNG is primarily composed of methane, which is the second most prevalent greenhouse gas after carbon dioxide and responsible for about half of the 1.1 degree temperature rise since the 1850s.[17] Methane is 80 times more potent than carbon dioxide over a 20-year horizon and 28 times more potent over a 100-year horizon.[18] During the production and transportation of LNG, methane is flared or vented from wells and processing facilities into the atmosphere.[19] Overall, the greenhouse gas emissions produced from the extraction, transport, and re-gasification of LNG can be equivalent to the emissions from the burning of the gas itself.[20]

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[13] *Id.*

[14] Low-income communities of color are frequently at greatest risk of experiencing the health and safety consequences posed by train travel. See, e.g., *Decrease Port, Train, and Truck Pollution*, NRDC (last visited Nov. 19, 2021), https://www.nrdc.org/issues/decrease-port-train-and-truck-pollution (explaining that pollution from trains, among other modes of transport, "increase regional smog and creates toxic hot spots, particularly in low-income communities of color."); *New Study: Philly's Minority Communities at Greatest Risk from Oil Trains*, PENNENVIRONMENT (Feb. 16, 2016), https://pennenvironment.org/news/pae/new-study-philly%E2%80%99s-minority-communities-greatest-risk-oil-trains (finding that "people of color in Philadelphia are more likely to live in the possible oil train blast zone").

[15] *Id.*

[16] *See* Stefanie Herweck, *Straight Talk, Not Sales Pitch, About LNG Dangers*, SIERRA CLUB (Aug. 26, 2016), https://www.sierraclub.org/texas/blog/2016/08/straight-talk-not-sales-pitch-about-lng-dangers (describing companies spreading the message to communities surrounding a proposed export terminal that LNG is safe).

[17] *More Countries Join Global Pledge to Cut Methane Emissions*, SCIENTIFIC AMERICAN (Oct. 12, 2021), https://www.scientificamerican.com/article/more-countries-join-global-pledge-to-cut-methane-emissions/.

[18] *Overview of Greenhouse Gases*, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (last updated Jul. 27, 2021), https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane.

[19] Flaring refers to a controlled burn of natural gas, while venting is the release of natural gas directly into the atmosphere. *Pennsylvania Natural Gas Flaring and Venting Regulations*, OFFICE OF OIL & NATURAL GAS, U.S. DEP'T OF ENERGY, https://www.energy.gov/sites/prod/files/2019/08/f66/Pennsylvania.pdf (last updated May 2019).

[20] Christina Swanson & Amanda Levin, Natural Resources Defense Council, *Sailing to Nowhere: Liquefied Natural Gas is Not an Effective Climate Strategy*, at 4 (Dec. 2020), https://www.nrdc.org/sites/default/files/sailing-nowhere-liquefied-natural-gas-report.pdf.

When combined with the emissions produced from the use of LNG at its destination, as well as methane leakage during the export process, the planet heating potential of LNG is just as dangerous as the other fossil fuels LNG seeks to replace.[21]

If fracked LNG exports increase as projected, the LNG industry alone will generate 130 to 213 million metric tons of new GHG emissions in the United States by 2030, equal to the annual emissions of 28 to 45 million fossil fuel-powered cars—enough to reverse the one percent per year decline in total U.S. GHG emissions measured during the past decade.[22] Furthermore, permitting increased LNG production and use in the coming decades would render the Biden Administration's goals of achieving net-zero GHG emissions by 2050 and limiting global warming to 1.5 degrees Celsius nearly impossible. [23]

In light of the high global warming potential of methane, the Biden administration has pledged to slash methane emissions.[24] As climate envoy John Kerry has noted, cutting methane emissions is "the single fastest strategy that we have to keep a safer, 1.5-degree Centigrade future within reach."[25] Closing the floodgates of LNG transportation by rail before it begins is not just important but necessary to achieve this goal.

II. The Department of Transportation Can Reverse This Trump-Era Rule Before It Takes Effect

A. Despite the Clear Harms Associated with LNG by Rail, the Trump Administration Took Steps to Expand This Activity

The shipment of LNG by rail is a relatively new practice—prior to the LNG-by-rail rule, PHMSA and the Federal Railroad Administration agreed that the shipment of LNG by rail was too dangerous to categorically approve. Instead, the transportation of LNG by rail required a PHMSA special permit or approval from the Federal Railroad Administration for the shipment of LNG in a special portable tank.[26]

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[21] *Id.*

[22] Swanson & Levin, *supra* note 20, at 14.

[23] *Id.; see also 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,* THE WHITE HOUSE (Apr. 22, 2021), 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/.

[24] Lisa Friedman, *More than 30 countries join U.S. pledge to slash methane emissions*, NYTIMES (Oct. 11, 2021), https://www.nytimes.com/2021/10/11/climate/methane-global-climate.html.

[25] *Id.*

[26] *LNG-by-Rail Rule*, HARVARD LAW SCHOOL ENVIRONMENTAL & ENERGY LAW PROGRAM (January 22, 2021), https://eelp.law.harvard.edu/2021/01/lng-by-rail-rule/.

In 2019, following the Trump Administration's mandate by Executive Order, PHMSA proposed a rule allowing for the bulk transportation of LNG by rail.[27] In public comments, the National Transportation Safety Board—an independent federal agency charged with investigating transportation-related accidents and issuing safety recommendations to transportation agencies—concluded that the rule proposed by PHMSA "would be detrimental to public safety."[28] Nonetheless, PHMSA issued the final rule allowing for bulk transportation of LNG by rail.[29]

After the LNG-by-rail rule was promulgated, twelve states and a coalition of environmental groups challenged the rule in court.[30] The Department of Transportation recently asked the D.C. Circuit to hold this case in abeyance pending PHMSA review of the rule, and the court granted this motion.[31]

B. The Department Now Has an Opportunity to Rescind the Rule

In early 2021, the Biden Administration issued an executive order directing the Department to review the LNG-by-rail rule.[32] Shortly thereafter, PHMSA announced that it was suspending authorization of the LNG-by-rail rule,[33] and that PHMSA would amend the rule after consulting with experts and reviewing new research.[34] In November 2021, PHMSA issued notice of a proposed rulemaking to suspend the Trump-era rule until the completion of a new rulemaking to modify the LNG-by-rail rule or June 30, 2024, whichever comes first.[35] This proposed rule acknowledges that uncertainty regarding the safety and environmental risk of LNG transport by rail has not only continued but increased since the LNG-by-rail rule was promulgated in 2019.[36]

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[27] *See* Executive Office of the President, "Promoting Energy Infrastructure and Economic Growth," Exec. Order No. 13868, 84 Fed. Reg. 15495 (Apr. 10, 2019); U.S. Dep't of Transp., "Hazardous Materials: Liquefied Natural Gas by Rail," Notice of Proposed Rulemaking, 84 Fed. Reg. 59694 (Oct. 24, 2019).
[28] *See* Public Comment from Robert L. Sumwalt III, Chairman, National Transportation Safety Board, Re: Docket No. PHMSA-2018-0025 (HM-264) (Dec. 5, 2019).
[29] *See* U.S. Dep't of Transp., "Hazardous Materials: Liquefied Natural Gas by Rail," Final Rule, 85 Fed. Reg. 44994, 45011 (July 24, 2020).
[30] *Maryland v. U.S. Dep't of Transp.*, No. 20-1318 (D.C. Cir., complaint filed Aug. 18, 2020).
[31] *Sierra Club v. U.S. Dep't of Transp.*, No. 20-1317, Doc No. 1886940 (D.C. Cir., motion to hold in abeyance filed Feb. 24, 2021 and granted Mar. 16, 2021) (this case has been consolidated with *Maryland v. U.S. Dep't of Transportation*, cited *supra* at footnote 30).
[32] Executive Office of the President, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis," Exec. Order No. 13990, 86 Fed. Reg. 7037 (January 20, 2021).
[33] Hazardous Materials: Suspension of HMR Amendments Authorizing Transportation of Liquefied Natural Gas by Rail, 2137-AF55 (proposed Nov. 2021) (to be codified at 49 C.F.R. 172, 173, 174, 179, 180).
[34] Hazardous Materials: Improving the Safety of Transporting Liquefied Natural Gas, 2137-AF54 (to be proposed Apr. 2022) (to be codified at 49 C.F.R. 172, 173, 174, 179, 180).
[35] U.S. Dep't of Transp., "Hazardous Materials: Suspension of HMR Amendments Authorizing Transportation of Liquefied Natural Gas by Rail," Notice of Proposed Rulemaking, 86 Fed. Reg. 61731 (Nov. 8, 2021).
[36] *Id.* at 86 Fed. Reg. 61735.

Conclusion

The transportation of LNG by rail is disastrous for the health and safety of fence-line communities, especially environmental justice communities. The transportation of LNG by rail also escalates the climate crisis. We respectfully urge the Department and PHMSA to conclude their evaluation of an alternative LNG-by-rail rule by permanently rescinding the Trump-era LNG-by-rail rule and categorically banning the bulk transport of LNG by rail. The safety of our communities and the future of our planet demand it.

Sincerely,

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