**A Letter from U.S. Scientists on the Climate Impacts of the Energy Permitting Reform Act**

Dear Representative,

As U.S. scientists, we write to express our substantial concerns regarding the Energy Permitting Reform Act ("EPRA") of 2024. We are now in a time of record-breaking temperatures year over year, with new science suggesting that limiting warming to 1.5°C is increasingly out of reach.[1] Legislation that further accelerates global fossil fuel development and global emissions, the key driver of climate devastation, will only result in even more severe climate impacts.

The proponents of the EPRA point to non-peer-reviewed modeling claiming that the renewable energy and transmission provisions will yield *domestic* emissions savings greater than the emissions increases from its fossil fuel provisions, in a ratio ranging from 3:1 to 10:1. However, these estimates fail to take into account the full *global* lifecycle of fossil fuels, namely the burning of exported fossil fuels including LNG, crude oil, refined petroleum and coal. If any of these models fully accounted for the global lifecycle emissions, then the purported emissions benefits of the EPRA would most likely be undermined by increased emissions in other nations.

The emissions savings from renewable energy and transmission improvements are significantly undermined if the fossil fuels they supplant are merely exported and burned elsewhere. Yet, U.S. fossil fuel exports continue trending upward, suggesting that our emissions footprint is indeed being exported. Domestic fossil gas demand is projected to undergo an IRA-supported decline of 16% domestically by 2035 (compared to 2022), but fossil gas production is nonetheless projected to increase by 7%, with gas exports projected to nearly double, driven by expansion of LNG export terminals. Similarly, while domestic oil and petroleum demand is expected to decline by 10%, production is expected to increase by 13%, and exports are expected to increase by 23%.[2] Further lease sales and fossil fuel infrastructure approvals enabled by the EPRA will only contribute to this trend of shipping our emissions burdens abroad.

This point comes further into focus when considering the LNG projects that would certainly proceed because of the EPRA. There are five major LNG projects currently awaiting final approval from the Department of Energy. The EPRA would mandate a decision on these projects within 90 days of the bill's enactment. Combined, these five projects would constitute a 40% increase in LNG processing capacity above what is currently in operation or under construction and would result in lifecycle emissions of 616 million metric tons of $CO_2e$ (mmt $CO_2e$) annually, equivalent to 165 coal-fired power plants. These five projects completely negate the emissions benefits of 50 major clean electricity transmission projects.[3]

The myopic policy focus on demand-side impacts of fossil fuels rather than considering demand together with supply-side policies is exemplified by the persistent notion among supporters of the EPRA that "what we do not produce here will simply be produced elsewhere." For example,

this premise underlies a deeply flawed modeling analysis just completed by the think tank RMI which *only* assessed the domestic transmission (i.e. demand-side) reductions of the EPRA, while simply ignoring all other potential global emissions increases. This approach has proven to be neither factually nor historically accurate with respect to emissions responses to such policy changes.

In contrast, research by the Stockholm Environment Institute found that restricting leasing of fossil fuels from federal lands and waters would lead to global carbon emissions reductions. This is in part because energy markets respond to a reduction in fossil fuel supply through higher prices, which in turn lowers consumption.[4] Global oil consumption drops by about half a barrel for each barrel of oil not produced.[5] Rather than the reduction in fossil fuel supply leading to production elsewhere, increasing supply, as would be enabled by the EPRA, *reduces* the price of fossil fuels, which disincentivizes importing countries from exploring clean alternatives.

In short, there is a fundamental conflict between reducing fossil fuel demand and simultaneously approving long-lifespan extraction and infrastructure projects that increase fossil fuel supply. Experts have repeatedly warned that policies that decrease fossil fuel supply *and* demand must go hand in hand to effectively reduce emissions and allow for a transition away from fossil fuels. Reducing U.S. fossil fuel demand without reducing supply will significantly undercut any domestic emissions reductions coming from demand-side policies.[6] For example, the total annual emissions from 17 major fossil fuel projects approved by the Biden administration (1,642 mmt $CO_2e$ annually) greatly exceed the annual domestic emissions reductions projected to result from the IRA and other climate policy (879 mmt $CO_2e$ annually) in 2030 as modeled by the U.S. Energy Information Administration.[7]

It is not surprising, therefore, that many of the modeled emissions projections used during the debate regarding the Inflation Reduction Act are not being realized, in part because fossil fuel emissions — domestic and global — continue to rise. In failing to account for the emissions from fossil fuel exports, modeled results claiming emissions benefits of the EPRA are likewise misleading and undercut by planned and pending fossil fuel infrastructure projects.

As long as fossil fuel extraction is enabled, fossil fuel companies will continue purchasing leases, building new infrastructure, and producing. As fossil fuel demand declines in the power sector due to replacement by renewables, the fossil fuel industry pushes to deploy its products in other venues to prolong its life. Between 2022 and 2035, projections indicate that declining fossil gas demand in the power sector will be offset by increases in other industrial sectors — LNG exports, the production of plastics and the refining of other petrochemicals.[8] The United States is already now the number one exporter of petroleum products and the number one exporter of fossil gas, a trend that will be further locked in under the EPRA.[9]

As such, fossil fuel production does not fall as demand falls in the power sector, despite what demand-side-policy-only proponents would contend. Production is merely funneled elsewhere.

There is simply no evidence to date that bringing renewables online will hinder or arrest increased fossil fuel production. One merely needs to take the plastics industry as an example. Currently, 12% of global crude oil demand and 8.5% of fossil gas demand goes to plastics production.[10] But the interlinked fossil fuel and plastic industries plan to double or triple plastic production by 2050,[11] despite the growing scientific certainty regarding the need to phase out fossil fuels. On the current trajectory, the plastics industry is expected to account for half the growth in oil demand by 2050, when the plastics sector will account for 20% of total oil consumption and consume up to 26% of the global carbon budget.[12]

The "escape hatch" for the fossil fuel industry—that is, exports and petrochemicals—comes at the expense of community health and welfare. LNG export terminals emit significant conventional air pollution associated with serious health harms, currently estimated at 60 premature deaths and $957 million in total health costs per year. If all planned LNG terminals and expansion projects were built, costs would rise to 149 premature deaths and $2.33 billion in health costs per year, with harms largely centered on the Gulf Coast region.[13]

These harms are disproportionately distributed—Black and Hispanic Americans would experience air pollution from LNG terminals at 151-170% and 110-129% the rate of white Americans, respectively. Similar is the case with petrochemicals.[14] A feature of the notorious "Cancer Alley," there are more than 100 pollution-spewing petrochemical facilities along the 85-mile stretch along the Mississippi River from Baton Rouge to New Orleans, an area home to high concentrations of Black residents with elevated incidences of cancer and other diseases.[15]

The EPRA would sanction and perpetuate such harms, with the bill potentially requiring that Department of Energy use outdated scientific studies to cursorily approve additional fossil fuel infrastructure. The EPRA would force DOE to restart approvals using deeply flawed climate and economic information and without any environmental justice analysis. Thus, not only would the EPRA expedite LNG project approvals, but it would do so without the backing of the best and latest science.

The United States undoubtedly needs to accelerate the deployment of critical clean energy and transmission infrastructure. However, the inclusion of numerous provisions that expand the fossil fuel buildout in the United States completely undermines this otherwise worthwhile aim. The climate crisis demands an immediate and rapid reduction in greenhouse emissions *globally*, so it is not enough to reduce emissions domestically while exporting our emissions footprint abroad. We strongly urge Congress to reject this proposal, and to opt instead for clean energy reforms that constitute real solutions, not ones bound to fossil fuel industry giveaways.

Thank you for your consideration,

*Scientists joining this letter do so in their individual capacities and not on behalf of the institutions with which they are affiliated.*

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[1] Bertram, C. et al., Feasibility of peak temperature targets in light of institutional constraints, Nature Climate Change (2024), https://doi.org/10.1038/s41558-024-02073-4

[2] Oil Change International, Biden's Fossil Fuel Fail: How U.S. Oil and Gas Supply Rises Under the Inflation Reduction Act, Exacerbating Environmental Injustice (2023), https://priceofoil.org/content/uploads/2023/11/Fossil-Fuel-Fail-report_web.pdf

[3] Symons Public Affairs, The Manchin-Barrasso Permitting Bill: Assessing the Climate Impacts of the LNG Title (2024), https://www.symonspa.com/post/assessing-the-climate-impacts-of-the-manchin-barrasso-bill-s-lng-title

[4] Erickson, P. & M. Lazarus, Would constraining US fossil fuel production affect global CO2 emissions? A case study of US leasing policy, Climatic Change (2018), https://doi.org/10.1007/s10584-018-2152-z

[5] Erickson, P. et al., Limiting fossil fuel production as the next big step in climate policy, Nature Climate Change (2018), https://doi.org/10.1038/s41558-018-0337-0

[6] Donaghy, T., Real Climate Leadership: Why the Next President Must Prioritize a Fossil Fuel Phase Out, Greenpeace, Oil Change International, Labor Network for Sustainability, DFP, Honor the Earth, and Indigenous Environmental Network (2019), https://www.greenpeace.org/usa/wp-content/uploads/2019/06/Greenpeace-Report-Real-Climate-Leadership.pdf; Green, Fergus and Richard Denniss, Cutting with both arms of the scissors: the economic and political case for restrictive supply-side climate policies, Climatic Change (2018), https://doi.org/10.1007/s10584-018-2162-x; York, Richard and Shannon E. Bell, Energy transitions or additions? Why a transition from fossil fuels requires more than the growth of renewable energy, Energy Research & Social Science (2019), https://doi.org/10.1016/j.erss.2019.01.008; Prest, Brian C., Partners, Not Rivals: The Power of Parallel Supply-Side and Demand-Side Climate Policy, Resources for the Future (2022), https://www.rff.org/publications/reports/partners-not-rivals-the-power-of-parallel-supply-side-and-demand-side-climate-policy/; Paul, Mark and Lina Moe, An Economist's Case for Restrictive Supply Side Policies: Ten Policies to Manage the Fossil Fuel Transition, Climate and Community Project (2023), https://www.climateandcommunity.org/economists-case-end-fossil-fuels

[7] Wolf, S. et al., Out-Polluting Progress: Carbon Emissions From Biden-Approved Fossil Fuel Projects Undermine CO2 Cuts From Inflation Reduction Act, Center for Biological Diversity (2023), https://www.biologicaldiversity.org/programs/climate_law_institute/pdfs/Out-Polluting-Progress-Report-2023.pdf

[8] Oil Change International, Biden's Fossil Fuel Fail: How U.S. Oil and Gas Supply Rises Under the Inflation Reduction Act, Exacerbating Environmental Injustice (2023), https://priceofoil.org/content/uploads/2023/11/Fossil-Fuel-Fail-report_web.pdf

[9] U.S. EIA, The United States exported more LNG than other country in the first half of 2023 (Sep 12, 2023), https://www.eia.gov/todayinenergy/detail.php?id=60361

[10] Karali, N. et al., Climate Impact of Primary Plastic Production (2024), https://escholarship.org/uc/item/12s624vf

[11] Bauer, F. et al., Mapping GHG emissions and prospects for renewable energy in the chemical industry, 39 Current Opinion in Chemical Engineering (2023), https://doi.org/10.1016/j.coche.2022.100881

[12] Karali, N. et al., Climate Impact of Primary Plastic Production (2024), https://escholarship.org/uc/item/12s624vf

[13] Heureaux-Torres, J. et al., Permit to Kill: Potential Health and Economic Impacts from U.S. LNG Export Terminal Permitted Emissions, Greenpeace and Sierra Club (2024), https://www.greenpeace.org/usa/wp-content/uploads/2024/08/Permit-to-Kill.pdf

[14] Heureaux-Torres, J. et al., Permit to Kill: Potential Health and Economic Impacts from U.S. LNG Export Terminal Permitted Emissions, Greenpeace and Sierra Club (2024), https://www.greenpeace.org/usa/wp-content/uploads/2024/08/Permit-to-Kill.pdf

[15] Saha, R. et al., Liquefying the Gulf Coast: A Cumulative Impact Assessment of LNG Buildout in Louisiana and Texas (2024), https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=1015&context=environstudies_pubs