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Good morning, Chairman Fallon, Ranking Member Bush, and members of the Committee. My name is Ron Gusek, and I am the President of Liberty Energy Inc. ("Liberty"). Liberty is a leading North American oilfield services firm that offers cutting-edge completion services and technologies to onshore oil and natural gas exploration and production companies. Liberty is publicly traded and is listed on the NYSE under the ticker LBRT and is headquartered in Denver, Colorado.

Thank you for inviting me to testify today on the state of U.S. energy production and the future of the energy workforce. At Liberty, our mission is to better human lives through abundant energy. The growth in availability due to fossil fuels in the twentieth century transformed humanity and improved the quality of life of billions around the world. Nowhere has this effect been more profound than in the United States, which first through oil and then natural gas became the world's first energy superpower.

But over the past several years, climate idealists and their allies in the Biden Administration have launched a "whole-of-government" attack on energy production. As I catalog below, this Administration has proposed and finalized dozens of regulations aimed at all stages of energy production and use: limiting initial capital formation, adding costs to all phases of production and transportation, and implementing end-use regulations to dry up demand. Collectively, these rules will impose trillions of dollars in costs[1] to American citizens while offering virtually no benefits. And while the motivation for these rules is to address climate change, their mechanisms are ultimately self-defeating, driving energy production to foreign countries that lack strong environmental protections, and thus on net increasing greenhouse gas ("GHG") emissions.

I. Background.

Liberty was founded in 2011 with a relentless focus on developing and delivering next-generation technology for the sustainable development of unconventional energy resources. Our business revolves around partnering with the leading oil and gas producers in the United States and Canada to unlock their vast underground shale oil and natural gas reserves through hydraulic fracturing. Liberty began as a pure-

[1] For example, EPA's new model year 2027 and later light- and medium-duty rules project $870 billion in vehicle technology costs, $190 billion in electric vehicle supply equipment (i.e., chargers), and $33 billion in added insurance costs. 89 Fed. Reg. 27860. These are almost certainly underestimates because, as explained below, they ignore the effect of cross subsidization on electric vehicle prices. That rule's model year 2023–26 predecessor estimated $300 billion in costs. 86 Fed. Reg. 74509. As explained below, this $1.4 trillion in cost is imposed through just two rules which are themselves only one part of the Biden Administration's electric vehicle mandate plan which is in turn just one small part of the overall attack on energy.

play provider of hydraulic fracturing, or "frac" operations. We have grown into an integrated supplier of all the supporting services that are required to execute frac operations.

Our founders were pioneers in the shale revolution that began with natural gas 25 years ago, and Liberty has been a leader in the effort to broaden the shale revolution to include oil production. These efforts have transformed the United States from the world's largest importer of oil and natural gas to a net exporter of oil and refined oil products and the world's largest exporter of natural gas today. Energy enables all human activity, and we are proud to play a growing role in helping lift everyone's standard of living. Liberty employs over 5,000 people and fracs roughly 20 percent of the onshore wells drilled in the United States and Canada. We are proud to say that about 10 percent of total primary energy production in the United States comes from wells frac'd by Liberty.

We are also proud because, at Liberty our ultimate mission is to better human lives through abundant energy. As we explain in our most recent *Bettering Human Lives* report, human happiness comes through relationships, love, and finding a strong purpose in life.[2] The preconditions for these ultimate ends are food, shelter, health, education, and longevity. None of these are possible without energy, and the quality of each depends on the degree of access to affordable, reliable, and secure energy. So far in modern history and for the near future, hydrocarbons are essential to this goal.

II. Abundant Energy Makes Life in America Better

The story of the 20th century is the story of the triumph of energy.[3] The arrival of fossil fuels transformed humanity, lifting billions out of poverty and more than doubling human life expectancy.[4] Fossil fuels today support billions of people in lifestyles that were simply unimaginable only a few generations ago. Planes, trains, and automobiles changed the game for human mobility. Modern medicine, communications, the internet, and air conditioning have changed the human condition beyond anything our ancestors would recognize.

This unprecedented growth was accomplished largely on the back of coal, oil, and natural gas—with the latter two increasingly displacing coal in the United States in recent decades.[5] By 1900, fossil fuels contributed roughly half of the world's energy or about 22 exajoules per year.[6] That meant roughly

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[2] *See* Liberty Energy, *Bettering Human Lives* (Jan. 2024), https://libertyenergy.com/bettering-human-lives-2024/.

[3] Liberty Oilfield Servs., *2020 ESG Report: Bettering Human Lives* 16 (June 2021), https://libertyenergy.com/bettering-human-lives-2020-esg-report/.

[4] Max Roser et al., *Life Expectancy*, Our World in Data (2023), https://ourworldindata.org/life-expectancy.

[5] *Monthly Energy Review*, U.S. Energy Info. Admin. (Apr. 2021), https://www.eia.gov/energyexplained/us-energy-facts/.

[6] 1 Exajoule (EJ) = 0.95 Quadrillion British Thermal Units (BTUs) = 278 Terawatt-hours (TWh)

14 gigajoules (GJ) per person per year, the equivalent of 311 gallons of gasoline. A century later, fossil fuel energy had grown more than ten-fold to supply more than 320 EJ per year, dominating energy production and raising per capita energy availability more than four-fold to 61 GJ per year.[7] These raw numbers understate the change in energy availability because they fail to account for the improvements in efficiency that this energy unlocked.[8] Conservative estimates suggest that by the beginning of the twenty-first century the world had twenty-five times as much useful energy at its disposal than it did at the dawn of the twentieth.[9]

This increase in energy has been hugely important for transportation, industry, and food production. Transportation alone account for 27 percent of U.S. energy consumption, with virtually all transportation being powered by oil.[10] Industry accounts for another 35 percent of total U.S. energy consumption, with oil and natural gas supply more than three-quarters of that energy.[11] Oil and natural gas are essential to industry in part because they are core to the synthesis of plastics, steel, and fertilizer. Nearly all plastics (99.8%), ubiquitous in modern life, are made from fossil fuels.[12] Steel production, which is currently responsible for 8% of the world's energy demand, cannot yet be produced in a commercially viable way without fossil fuels and is expected to increase by more than a third by 2050.[13] Without synthetic nitrogen fertilizers, which are mainly made from natural gas through the Haber-Bosch process, current farmland could sustain only about half of the global population.[14]

This energy abundance has been particularly important for the United States because of how it has positioned our country in the global order. In World War II, America became the oil superpower, producing the fuel to power a two-ocean fleet and enabling our allies to prosecute the war. Despite drastic superiority at the beginning of the war, Hitler's Germany ultimately lost when it failed in a push for Russian oil in the Caucuses, leaving the blitzing tanks of 1939 without enough fuel to perform basic maneuvers.[15] Japan's

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[7] Global direct primary energy consumption, OUR WORLD IN DATA, https://ourworldindata.org/grapher/global-primary-energy

[8] Vaclav Smil, Energy in the Twentieth Century: Resources, Conversions, Costs, Uses, and Consequences, 25 ANNUAL REV. ENERGY AND THE ENVIRONMENT 21, 23 (2000).

[9] *Id.*

[10] *Transportation*, U.S. Energy Info. Admin., https://www.eia.gov/energyexplained/use-of-energy/transportation.php.

[11] *Industry*, U.S. Energy Info. Admin., https://www.eia.gov/energyexplained/use-of-energy/industry.php.

[12] *Fossil Fuels & Plastic,* Ctr. for Int'l Env't Law (2022), https://www.ciel.org/issue/fossil-fuels-plastic/.

[13] Int'l Energy Agency, *Iron and Steel Industrial Roadmap* (Oct. 2020).

[14] *See* Hannah Ritchie, *How Many People Does Synthetic Fertilizer Feed?*, Our World in Data (Nov. 7, 2017), https://ourworldindata.org/how-many-people-does-synthetic-fertilizer-feed.

[15] Daniel Yergin, THE PRIZE 320 (2009)

fuel scarcity led it to gradually succumb to a depleted United States force, falling back further and further to their home islands, eventually without enough fuel to launch their fighter planes.[16]

Energy and American fortunes have been linked ever since. After the war, an abundance of oil and coal sustained the United States in a massive manufacturing and energy exporting boom, putting it in a position of unprecedented international power and influence. The decline of American oil production in the 1970s led directly to the first oil crisis and the 1973–75 recession.[17] It was a similar decline in oil production in the Soviet Union in the 1980s which led to its own recession and eventual breakup.[18]

In the twenty-first century, the shale revolution has made the United States a natural gas superpower. The widespread application of horizontal drilling and hydraulic fracturing techniques after 2008 caused American oil and gas production to soar, launching the United States back atop the world's energy supply chain. In 2014, the United States again surpassed Russia in combined oil and gas production. In 2020, for the first time in more than fifty years, the United States became a net-oil exporter. The United States now produces 35 EJ of natural gas, an astonishing 6% of the total primary energy consumed worldwide more than the third through sixth largest producers (Iran, China, Canada, and Qatar) combined.[19]

The biggest impacts of this growth have been felt directly by American consumers. About 47 percent of all the homes in the country rely on natural gas furnaces for heating.[20] Heating with gas is far cheaper than heating with electricity, largely because of the incredibly low prices for natural gas in the United States. The current trading price for natural gas at Henry Hub is $1.63 per million British thermal units (MMBtu). The same volume of natural gas sells for $9.71 at the TTF trading hub in Europe, and $10.73 in Southeast Asia.[21]

Natural gas has also transformed the electricity sector and now supplies over 40 percent of U.S. electricity in 2023.[22] Coal has fallen from over 50 percent of U.S. electricity supply just 15 years ago, to less than 20 percent today. This reduction in coal has meant both cleaner air (lower particulate matter,

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[16] Daniel Yergin, THE PRIZE 349 (2009)

[17] *Id.*

[18] *Id.*

[19] *Statistical Review of World Energy*, Energy Institute (2023), https://www.energyinst.org/statistical-review/resources-and-data-downloads.

[20] John Muyskens et al., *U.S. home heating is fractured in surprising ways,* WASH. POST (Mar. 6, 2023), https://www.washingtonpost.com/climate-environment/interactive/2023/home-electrification-heat-pumps-gas-furnace.

[21] *Global Gas and Power Products*, CME Group, https://www.cmegroup.com/markets/energy/natural-gas.html (last accessed Apr. 16, 2024).

[22] *U.S. Total Energy Statistics,* U.S. Energy Info. Admin., https://www.eia.gov/energyexplained/us-energy-facts/data-and-statistics.php.

sulfur dioxide, mercury, etc.) in the United States and a decline in GHG emissions on a per capita basis to its lowest level in over 50 years.[23] Well over half of the steep drop in U.S. greenhouse emissions over the last 15 years is attributable to natural gas displacing coal.[24]

It is popular today to suggest that somehow in the next 10 or 30 years we are going to "transition" fully away from fossil fuels. This will not happen. The fact is that fossil fuels are and will continue to be essential to affordable, secure, and reliable energy production. Natural gas electricity generation has grown even faster than wind and solar generation (despite their immense subsidization) in part because these resources need natural gas to operate when winds or solar light are inadequate. Consequently, demand for oil and natural gas is also increasing. In the thirty years since the Kyoto climate accords were drafted, total global energy from hydrocarbons has grown by 60%. The U.S. Energy Information Administration expects petroleum and natural gas production to continue to increase through 2050.[25]

A willful ignorance of this reality is driving politically motivated attacks on our industry that will impoverish American consumers and consumers around the world.

III. Regulatory Attacks on Energy Development

Climate idealists in the United States have long sought to ban oil and natural gas completely but have been unable to do so because Congress has never passed a law authorizing this inherently flawed logic. The Obama Administration tried to get around its dearth of authority with the Clean Power Plan, in which the EPA "claimed to discover in a long-extant statute an unheralded power" to require coal and natural gas generators to transition to other preferred power sources like wind and solar. But the Supreme Court vacated that power grab in the landmark case of *West Virginia v. EPA*, reasoning that an agency cannot promulgate rules addressing questions of "vast economic and political significance" without "clear congressional authorization."[26]

The Biden Administration has taken a different approach to even more expansive ends. Unlike the Clean Power Plan, where EPA undertook its task alone, this Administration is trying what it calls a "whole of government" approach: deploying a series of interlocking rulemakings, spread across time and different agencies to thwart straightforward legal challenges and maximize its regulatory agenda's chances of

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[23] Hannah Ritchie & Max Roser, *United States: CO2 Country Profile*, Our World in Data (2020), https://our-worldindata.org/co2/country/united-states.

[24] *The Role of Gas in Today's Energy Transitions*, Int'l Energy Agency (2019), https://www.iea.org/reports/the-role-of-gas-in-todays-energy-transitions.

[25] *EIA Expects U.S. Fossil Fuel Production to Reach New Highs in 2023*, U.S. Energy Info. Admin. (Jan. 21, 2022), https://www.eia.gov/todayinenergy/detail.php?id=50978.

[26] 142 S. Ct. 2587, 2605, 2609 (2022).

success.[27] Of course, the agencies lack the power to enact even these smaller regulations as well, but they hope that each individually is small enough that they will fly under the radar—a kind of regulatory "smurfing." These regulations attack all stages of energy production and use, limiting initial capital formation, adding costs to all phases of production and transportation, and attempting to dry up demand by adopting aggressive end-use regulations. with aggressive end-use regulations.

A. Capital Formation

One category of regulation seeks to prevent energy companies from gaining access to the capital necessary to produce energy by burdening them with excessive disclosures designed to reduce investment. There are several regulations of this type.

SEC Climate Rule

The Securities and Exchange Commission's ("SEC's") new rule, *The Enhancement and Standardization of Climate-Related Disclosures for Investors,* requires companies to make broad "climate"-related disclosures, which will occupy a significant portion of public companies' SEC filings and subject them to increased enforcement and litigation.[28] The true effect of requiring the disclosure of GHG emissions, "physical risks," and speculative "transition risks," as the Climate Rule does, is to manipulate capital markets to achieve energy and climate policy goals. The activists who call for these disclosures have made clear why they want them: to drive "aggressive … reductions" in GHG emissions.[29] Through a broad disclosure regime, climate activists hope to open the door to public shaming, further regulation, and aggressive enforcement through actions by the SEC, other agencies, state and local officials, and through private lawsuits.[30] Further, because there is great uncertainty in determining the short and long-term risks from climate change, such disclosures would expose issuers and investors to greater litigation risk.

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[27] *FACT SHEET: President Biden Takes Executive Actions to Tackle the Climate Crisis at Home and Abroad, Create Jobs, and Restore Scientific Integrity Across Federal Government*, White House (Jan. 27, 2021), https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/27/fact-sheet-president-biden-takes-executive-actions-to-tackle-the-climate-crisis-at-home-and-abroad-create-jobs-and-restore-scientific-integrity-across-federal-government.

[28] 89 Fed. Reg. 21668 (Mar. 28, 2024).

[29] *Ceres Ambition 2030*, Ceres, https://www.ceres.org/climate/ambition2030 (last accessed Apr. 5, 2024) (referenced as calling for the disclosures in the proposed version of the Climate Rule, *The Enhancement and Standardization of Climate-Related Disclosures for Investors*, 87 Fed. Reg. 21,334, 21,338 (Apr. 11, 2022)).

[30] Rupert Darwall, Real Clear Found., *Capitalism, Socialism, and ESG* (May 2021), https://www.realclearpolitics.com/docs/2021/rupert_darwall_capitalism_socialism_and_esg_may_2021.pdf.

As Liberty has argued in court filings challenging the Climate Rule, the SEC's requirements are unlawful for several reasons.[31] First, the SEC lacks the statutory authority to issue the Climate Rule. The Rule fails the major-questions doctrine, which requires that agencies have clear authority to regulate matters of vast economic and political significance. Second, the Rule is arbitrary and capricious because it fails to account for the SEC's drastic change in position on its authority to regulate climate disclosures and is premised on evidence the Rule admits is at-best mixed, which court precedent holds is insufficient to justify an SEC rule. Third, the Rule violates the First Amendment by mandating controversial disclosures and effectively mandating discussions about climate change.

DOL ERISA ESG

The Department of Labor (DOL) has also put its thumb on the scale through its 2022 rule, *Prudence and Loyalty in Selecting Plan Investments and Exercising Shareholder Rights* amending its regulations under the Employee Retirement Income Security Act of 1974 ("ERISA").[32] This new provides fiduciaries with greater flexibility to consider non-pecuniary factors when selecting investment options for retirement plans subject to ERISA. Among other things, the new DOL rule removed from the regulation all uses of the terms "pecuniary" and "non-pecuniary," as well as a documentation requirement for fiduciaries. DOL was explicit about its intent to remove a "chill" on environmental, social, and governance investment objectives and regulatory provisions. In other words, the rule was designed to give activist fund managers permission to divest from energy companies on the grounds of climate change, regardless of whether or not that was best for the retirees whose funds they managed.

This too is beyond DOL's authority. As Liberty explains in our lawsuit challenging the DOL rule, "ERISA's duty of loyalty requires fiduciaries to act for the 'sole' and 'exclusive' financial benefit of plan participants. That plain statutory text prohibits collateral considerations, especially in pursuit of benefits to third parties or society."[33] The rule is also arbitrary and capricious. It removed or weakened important safeguards to protect the retirement income of plan participants, offering inconsistent or unreasonable logic, relying on impermissible factors, and failing to consider that the changes make it harder for participants to monitor their fiduciaries. An agency may not "rel[y] on factors which Congress has not intended it to consider"—like a desire to punish energy companies—when it goes about its rulemaking duties.[34]

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[31] *See* Emergency Mot. For Admin. Stay and Stay Pending Jud. Rev. at 7–27, *Liberty Energy Inc. v. SEC*, No. 24-60109 (5th Cir. Mar. 8, 2024), ECF No. 5.

[32] 87 Fed Reg. 73822 (Dec. 1, 2022).

[33] Opening Brief for Appellants, Utah v. Su, No. 23-11097 (5th Cir. Jan. 25, 2024).

[34] *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29 (1983).

Federal Acquisition Regulations

To make sure no companies slip through the cracks, the Biden Administration is also requiring climate disclosures for government contractors. The Federal Acquisition Regulation Council ("FAR Council"), composed of the Department of Defense, the General Services Administration, and the National Aeronautics and Space Administration, have proposed two rules that are nearing finalization, *Federal Acquisition Regulation: Disclosure of Greenhouse Gas Emissions and Climate-Related Financial Risk* and *Federal Acquisition Regulation: Sustainable Procurement*.[35] These rules are nominally framed as requiring these disclosures "to better understand" the impacts of federal activities on GHG emissions, but their true purpose, as the proposals make clear, is to "shift markets, drive innovation, and be a catalyst for adoption of new norms and global standards," and to create and require a "social license to operate" a business.[36]

That transformation is far beyond the FAR Council's statutory authority. Congress gave the President and the FAR Council authority to regulate the procurement and supply of nonpersonal services through the Federal Property and Administrative Services Act of 1949. But that Act is only aimed at making "the government's entry into contracts less duplicative and inefficient," not imposing climate standards on thousands of businesses and hundreds of billions of dollars in contracts annually.[37] As the Supreme Court has said, an agency has "'literally … no power to act'—including under its regulations—unless and until Congress authorizes it to do so by statute."[38]

California Disclosures

Not to be outdone, California Governor Gavin Newsom recently signed into law SB 253 and SB 261, which will collectively require businesses generating more than $1 billion in revenue to publicly disclose their scope 1, 2, and 3 emissions, and businesses with revenue surpassing $500 million to identify climate-related financial risks. Like their federal cousins, these laws are designed to add reporting burdens to energy companies and to provide an excuse for activist investors to further divest from profitable oil and gas companies at the expense those shareholders whose money they manage.

There are several problems with California's laws that make their challenge and defeat a near certainty. California's laws violate the First Amendment, the Dormant Commerce Clause, and are preempted by several federal laws. The most critical of these issues is the constitutional violation. The First Amendment prohibits the government from seeking disclosure of political issues under the guise of

[35] 87 Fed. Reg. 68312 (Nov. 14, 2022) and 88 Fed. Reg. 51672 (Aug. 3, 2023), respectively.

[36] 87 Fed. Reg. at 68,318, 68,320.

[37] *Kentucky v. Biden,* 23 F.4th 585, 605 (6th Cir. 2022).

[38] *FEC v. Cruz*, 142 S. Ct. 1638, 1649 (2022).

disclosure requirements. That is precisely what California's disclosure laws do. Climate change in general is a politically charged matter, and, more specifically, whether emissions information is material to corporate performance is a strongly debated political matter.

B. Production and Transportation Regulations

A second category of regulation seeks to limit oil and natural gas production by setting overly onerous rules that prevent or add costs to exploration, drilling, extraction, and refining, and that limit the distribution of oil and natural gas, by adding costs or creating barriers that make it impossible to build pipelines or export terminals.

EPA Methane Rule

On March 8, 2024, EPA published new rules under Clean Air Act section 111 to regulate methane emissions from the oil and gas industry (the OOOO rules).[39] The OOOO rules set new standards for new or modified sources and emissions guidelines for states to implement nearly identical standards for existing sources. The rule covers sources across the onshore production and processing sector, as well as the natural gas transmission and storage sector. Among other things, the rule limits routine flaring, implements stringent standards for process controllers, changes the way fugitive emissions are addressed through leak monitoring, detection, and repair, and creates a new program for addressing so-called "super-emitter events."

While the rule has many problems, the two of the biggest involve its treatment of existing sources and its use of a new "social cost of methane." The entire purpose of Section 111 is that existing sources would be grandfathered into the regulatory scheme, to prevent a continual increase in cost as emissions standards are gradually tightened. By implementing nearly identical standards for existing sources, EPA's rule changes the financial projections that allowed those existing sources to be opened in the first place, likely rendering many operations unprofitable and forcing them to shut down. To justify this enormous expense, EPA used a new and never-subject-to-public-comment value of the "social cost of methane," some $1,600 per metric ton emitted in 2020.[40] As discussed in Section IV below, this and EPA's other social costs of carbon are based on dubious science, and have the appearance of being developed for the sole purpose of justifying regulations like this one.

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[39] *Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review*, 89 Fed. Reg. 16820 (Mar. 8, 2024).

[40] EPA, Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances at 154 (Nov. 2023), https://perma.cc/5M3R-YACH.

EPA Waste Emission Charge Rule

As part of the Inflation Reduction Act ("IRA"),[41] Congress amended the Clean Air Act to create a scheme to assess a Waste Emission Charge ("WEC") on methane emissions from specific segments of the oil and gas sector. [42] The sectors subject to the charge include upstream production and midstream transport of oil and natural gas. Under the program, the EPA plans to assess a charge of up to $1,500 per metric ton[43] of emissions over a given threshold.

The statutory text is itself confusing, which has given rise to calls for Congress to repeal the provision.[44] EPA's proposal[45] to implement the rule magnifies this problem. The text from the IRA includes several exceptions—one for facilities that comply with the OOOO rules, another for emissions that occur because necessary infrastructure is held up in the permitting process, and one to incentivize the capping of wells. The EPA's proposal would have the practical effect of reading these exceptions out of the rule. The IRA directs the EPA to transform the Greenhouse Gas Reporting Program ("GHGRP") into a program in which those subject to the WEC can accurately assess and determine their liability for the amount of a charge owed.

Transforming a reporting program into a program for assessing an excise tax is not a straightforward enterprise. Because the EPA delayed proposing changes to the GHGRP, the EPA has proposed, at least for reported 2024 emissions, to subject the industry to liability based on unrevised reporting rules, without the benefit of the revisions that the IRA directed the EPA to undertake before collecting the fee. Since 2024 is the initial reporting year, the efforts to comply with the WEC will be burdensome and chaotic. The cost that this uncertainty creates is on top of the amount that may be owed for the charge.

Permitting Issues and NEPA

There are a number of permitting issues that limit the construction of oil and natural gas pipelines. Some involve the Federal Energy Regulatory Commission ("FERC"), others involve the Clean Water Act, and still others involve the National Environmental Policy Act ("NEPA").

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[41] P.L. 117-169

[42] 42 U.S.C. § 7436

[43] The fee begins at $900 per metric ton for emissions reported in calendar year 2024, $1200 per metric ton in 2025, and $1500 for 2026 and each year thereafter. *Id.* at § 7436(e)(2).

[44] *See*, e.g., American Petroleum Institute, Press Release, API Calls on Congress to Repeal IRA's Methane Fee, January 12, 2024, https://www.api.org/news-policy-and-issues/news/2024/01/12/api-calls-on-congress-to-repeal-ira-methane-fee.

[45] Waste Emissions Charge for Petroleum and Natural Gas Systems, 89 Fed. Reg. 5318 (Jan. 26, 2024) (to be codified at 40 C.F.R. Parts 2 and 99).

NEPA creates massive uncertainty for any industry that depends upon federal permitting decisions to operate. This makes the rational allocation of capital in these industries difficult, which results in more costs and, ultimately, harms American consumers.[46] Though NEPA is supposed to be a "a purely procedural statute"[47] the courts' application of the arbitrary and capricious[48] standard means that any reviewing court can use the inclusion or omission of any information in an environmental review as a reason to set aside an agency's decision to grant a permit. The Biden Administration, rather than act to constrain the scope of NEPA, reversed the previous administration's attempted reforms[49] and has issued guidance to agencies encouraging them to broaden the scope of NEPA review.[50]

The years-long wait for many federal permits is also the result of the uncertainty that the NEPA process creates. In the attempt to bullet-proof federal decision making, federal bureaucrats draft environmental reviews that can run into the hundreds and even thousands of pages, extending the time before permits are issued.[51] And once issued, environmental groups then subject the permit to years more of litigation, further increasing the time and uncertainty involved in the process. About fifty percent of pipelines that require federal permits wind up challenged in court.[52] As a result, needed infrastructure is delayed or never gets built. And these delays increase costs that are born, in the end, by consumers.

Federal agencies have faced particular difficulty in determining whether they must review indirect environmental effects—effects that may be upstream or downstream of an agency's jurisdiction. The United States Court of Appeals for the D.C. Circuit ("D.C. Circuit"), for example, recently vacated a permit that the Surface Transportation Board ("STB") granted for the construction of a rail line in Utah

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[46] *See* Maya Weber, Transco seeks early FERC review for 150 MMcf/d expansion serving Alabama, GAS DAILY, Feb. 23, 2022 ("The thought of somebody having a cost of capital that can go take on the sufferings of something like [Mountain Valley Pipeline] or anything like that today, I just think those days are over[.]") (quoting Williams Companies, Inc. CEO Alan Armstrong).

[47] *Neighbors of Cuddy Mountain v. Alexander*, 303 F.3d 1059, 1070 (9th Cir. 2002).

[48] *See*, *Oregon Nat'l. Desert Ass'n v. Jewell*, 840 F.3d 562, 568 (9th Cir. 2016) ("NEPA challenges are reviewed under the Administrative Procedure Act . . ..").

[49] National Environmental Policy Act Implementing Regulations Revisions, 87 Fed. Reg. 23,453 (April 20, 2022) (reversing Trump era NEPA reforms).

[50] National Environmental Policy Act (NEPA) Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, 88 Fed. Reg. 1196-01 (January 9, 2023). For a critical review of this guidance, see Commissioner James Danly, Letter to the Honorable Cathy McMorris Rodgers (April 6, 2023), https://www.ferc.gov/news-events/news/commissioner-danly-response-march-2023-mcmorris-rodgers-ceq-letter.

[51] *See Harnessing the Power of Information*, 86 Tex. L. Rev. 1575, 1582 – 83 (2008) (noting that the result of the unpredictability of NEPA review is "to encourage agencies to gold-plate their EISs by including every conceivably relevant piece of information to avoid reversal.").

[52] Michael Bennon & Devon Wilson, *NEPA Litigation Over Large Energy and Transport Infrastructure Projects*, Environmental Law Reporter, Oct. 2, 2023.

that would, in large part, transport crude oil to refineries.[53] Among other things, the D.C. Circuit faulted the STB for not including in its environmental review analysis of the GHG emissions associated with the production of crude oil upstream or of the crude oil refining downstream.[54] A coalition of Utah counties has filed a *cert* petition at the Supreme Court challenging this decision, which may provide an opportunity for the Court to finally clarify the appropriate scope of review under NEPA.

PHMSA PIPES Act Implementation

In 2020, President Trump signed legislation that included the Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020 ("PIPES Act").[55] This legislation requires the Pipeline and Hazardous Materials Safety Administration ("PHMSA") to, among other things, issue regulations requiring pipeline operators to conduct leak detection and repair programs on various gas gathering lines and new and existing gas transmission and distribution pipeline facilities in order to "meet the need for gas pipeline safety . . . and to protect the environment."[56] In May of 2023, PHMSA proposed a rule to implement this new authority.[57]

Following a path similar to other Biden Administration agencies, PHMSA has used this statutory hook to transform itself from a safety regulator into an environmental regulator. To address the "Urgency of Methane Emissions Reductions in Confronting the Climate Crisis," PHMSA has proposed rules that read out of the PIPES Act the congressional command to exempt small leaks by redefining "potential hazard" to include any leak which could not "escape detection."[58] This misreading of the statute transforms a statutory mandate to prevent hazards into a blunt tool to add costs to pipelines.

LNG Export Terminal Delay

In January of this year, the Biden Administration announced that it would place a temporary "pause" on pending decisions to export liquefied natural gas (LNG) to countries with which the United States has not entered into a free trade agreement requiring national treatment for trade in natural gas (non-FTA countries).[59] The pause will remain in place until the Department of Energy (DOE) has updated its

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[53] *Eagle Cnty., Colorado v. Surface Transportation Bd.*, 82 F.4th 1152 (D.C. Cir. 2023).

[54] *Id.*

[55] PIPES Act of 2020, Pub. L. 116–260.

[56] *Id.* at Section 113(1)(A)-(B).

[57] *Pipeline Safety: Gas Pipeline Leak Detection and Repair*, 88 Fed. Reg. 31,890 (May 18, 2023).

[58] 88 Fed. Reg. 31893, 31938.

[59] *Statement from President Joe Biden on Decision to Pause Pending Approvals of Liquefied Natural Gas Exports*, White House (Jan. 26, 2024), https://www.whitehouse.gov/briefing-room/statements-releases/2024/01/26/fact-sheet-biden-harris-administration-announces-temporary-pause-on-pending-approvals-of-liquefied-natural-gas-exports/.

analyses on whether LNG exports to non-FTA countries are in the "public interest."[60] The administration has offered no timeline for this, but because public notice and comment period lasts at least 60 days, and agency review takes at minimum several months, the "pause" will last at least through the end of the year and jeopardize several large export projects.

The White House explained that its motivation for the pause is to update its evaluations to include the "latest assessment of the impact of greenhouse gas emissions."[61] It also referred to an "evolving understanding" of economic and environmental impacts associated with LNG, and a need to guard against health risks to "frontline" communities. But the DOE doesn't have the authority to take this action. To begin with, Congress never gave DOE power to issue blanket denials of export permits. Section 3 of the Natural Gas Act requires DOE to approve applications to export LNG to non-FTA countries "unless, after opportunity for hearing, it finds that the proposed exportation … will not be consistent with the public interest."[62] The statute creates a "general presumption favoring [export] authorization,"[63] and needs to make "an affirmative showing of inconsistency with the public interest" before it can deny an application.[64] The administration's approach flips the statutory presumption on its head.

C. End-use Regulations

A final category of regulations seeks to limit the market for oil and natural gas, by applying a patchwork of federal regulations that disfavor the biggest consumers of oil and natural gas—power plants and internal combustion engines—or by forcing states to adopt rules with the same effect.

EPA Power Plant Rule

In May of 2023, EPA sought to build on the Obama-era Clean Power Plan with a new proposed rule setting GHG emissions standards for fossil fuel-fired electric generating units including new gas plants and existing coal plants.[65] For gas turbines, the rule would require power plants to adopt unproven and expensive "emissions reduction" technologies like co-firing up to 30 percent with "green" hydrogen and implementing carbon capture and storage technologies to collect 90 percent of the emitted carbon

[60] *Id.*

[61] *Id.*

[62] 15 U.S.C. § 717b(a).

[63] *West Virginia Pub. Servs. Comm'n v. U.S. Dep't of Energy*, 681 F.2d 847, 856 (D.C. Cir. 1982).

[64] *Panhandle Producers & Royalty Owners Ass'n v. Econ. Regul. Admin.,* 822 F.2d 1105, 1111 (D.C. Cir. 1987).

[65] *EPA New Source Performance Standards For Greenhouse Gas Emissions From New, Modified, And Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines For Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; And Repeal Of The Affordable Clean Energy Rule*, 88 Fed. Reg. 33240 (May 23, 2023). The proposed rule also included regulations for existing natural gas plants, but the Biden Administration explained this February that it would drop the requirements for existing gas plants from the final rule.

dioxide. For coal plants, the rule would require units to either commit to permanently cease operations before 2040 and co-fire with 40 percent natural gas in the interim or commit to using carbon capture and storage to collect 90 percent of the emitted carbon dioxide. EPA estimates that these changes will cost tens of billions of dollars to implement, a gross underestimate because EPA both deflates the costs of its proposed emissions reduction systems and inflates the systems it expects power plants to implement as a "baseline," i.e., without the rule going into effect. Stunningly, EPA predicts this massive expenditure will reduce power-sector carbon emissions by a grand total of about 1 percent in 2040.[66]

The proposed rules are unlawful for several reasons. First, like its predecessor, EPA's new rule relies on a generation-shifting approach, something EPA lacks authority to do under the Clean Air Act. In *West Virginia v. EPA*, the Supreme Court explained that EPA "had never devised a[n emissions] cap by looking to a 'system' that would reduce pollution simply by 'shifting' polluting activity from dirtier to cleaner sources."[67] Instead, prior to 2015, EPA had always set emission limits based on application of measures that would cause regulated sources to operate more cleanly.[68] The Court concluded that Clean Power Plan effected a fundamental revision of the statute, from a paradigm limited to ensuring the efficient pollution performance of each individual regulated source to a paradigm based on requiring coal plants to shift away from coal or even to cease operation altogether.[69] Yet that is exactly what EPA has proposed to do here—requiring sources to shut down or co-fire some other fuel source.

The proposed rule is also arbitrary and capricious because it relies on carbon capture and storage technology that is not "adequately demonstrated" as required by the Clean Air Act. Instead, EPA relies on a scant few power plants that installed carbon capture systems without bothering to assess if those systems actually worked. One system EPA points to is a small 40 MW facility in Massachusetts that DOE explained "ha[s] not been proven at full scale."[70] Another system EPA relies on is the SaskPower Boundary Dam project. EPA uses the Boundary Dam as an example of a large system for which a 90 percent capture rate was feasible. Not so. That "seven-year-old facility's carbon capture rate in 2021 was less than 37% of the official target of 90%."[71]

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[66] *Id.*

[67] 142 S.Ct. at 2610.

[68] *Id.*

[69] *Id.* at 2612.

[70] 88 Fed. Reg. at 33,292 2 n.252 (citing DOE, Carbon Capture Opportunities for Natural Gas Fired Power Systems, https://www.energy.gov/fecm/articles/carbon-capture-opportunities12 natural-gas-fired-power-systems).

[71] *Only still-operating carbon capture project battled technical issues in 2021*, S&P Global (Jan. 6, 2022), https://www.spglobal.com/marketintelligence/en/news-insights/latest-newsheadlines/only-still-operating-carbon-capture-project-battled-technical-issues-in-2021-68302671.

The result of setting performance standards using unproven technologies will be that those standards are not met. This in turn would necessarily force facilities to shut down, reduce generation, or shift fuels in order to avoid the technology requirements altogether. Indeed, EPA's own modeling predicts that most of the affected electric generating units will not implement *any* of EPA's proposed technologies.[72] Instead, EPA expects that they will either shut down entirely or reduce the amount of electricity generated so as to be exempt from the rule's more onerous compliance requirements.

Electric Vehicle Mandates

At the same time it is shutting down power plants which generate electricity, the Biden Administration has also implemented a goal that 50 percent of all new vehicles sold in 2030 be electric vehicles.[73] The displacement of diesel and gasoline vehicles and trucks with electric vehicles hasn't been accomplished with just one rule, but an interlocking set of at least a dozen separate and reinforcing rules spread out over multiple agencies.

First, EPA has claimed the power to establish a *de facto* electric vehicle mandate by reimagining its authority to set emissions standards for new motor vehicles. EPA realized that by counting electric vehicles as producing zero-emissions while simultaneously setting average emissions standards below that which can be achieved with conventional vehicles, the agency could effectively require automakers to "gradually increas[e] sales of plug-in electric vehicles."[74] It used this power first to set emissions standards that would require about 17 percent of new light-duty vehicles to be electric by 2026,[75] then in a second rule to require about 70 percent of new light-duty vehicles to be electric by 2032, and finally in a third rule to require about 50 percent of new heavy-duty vehicles to be electric by 2032.

Second, EPA has also enabled California to set *de jure* electric vehicle mandates for new vehicles sold in California and in any other state that adopts California's standards. While Section 209(a) of the Clean Air Act broadly preempts states from adopting "any standard relating to" new motor-vehicle emissions, Congress authorized EPA to grant California—and only California—a limited preemption waiver in Section 209(b), allowing the state to set its own emissions standards if they are "need[ed]" "to meet

[72] Integrated Proposal Modeling and Updated Baseline Analysis, at Table 11; RIA at 8-2.

[73] E.O. 14037, 86 Fed. Reg. 43,583 (Aug. 5, 2021). The class of "zero-emission vehicles" nominally contains both battery electric vehicles and fuel cell electric vehicles. But to date, virtually no fuel cell electric vehicles have been sold. Consequently, all of the mandates discussed herein are effectively mandates for battery electric vehicles, and are referred to accordingly.

[74] 86 Fed. Reg. 74,438.

[75] 86 Fed. Reg. 74,434.

compelling and extraordinary conditions."[76] Any other state could then also "adopt and enforce" California's standards if "a waiver has been granted" by EPA.[77]

While this exception was originally intended to help California deal with its local smog problems, California has since received EPA's blessing to use these standards to address the decidedly non-local problem of climate change. California's Advanced Clean Cars I and Advanced Clean Cars II regulations require the gradual electrification of new light-duty vehicles up to 100 percent of those vehicles in 2035. The Advanced Clean Trucks regulation requires the gradual electrification of heavy-duty vehicles on a similar timeline. And the Advanced Clean Fleets program sets a purchase mandate for certain disfavored heavy-duty fleets, requiring them to gradually retire their older conventional vehicles and replace them with new electric vehicles.

Third, the National Highway Traffic Safety Administration (NHTSA) has claimed power to independently establish its own separate electric vehicle mandate using its authority to set fuel economy standards for new motor vehicles. NHTSA has the authority to prescribe the "maximum feasible" "average fuel economy standards" for vehicle fleets.[78] But while setting these standards NHTSA is strictly forbidden from "consider[ing] the fuel economy of dedicated automobiles," *i.e.*, automobiles that operate "only on alternative fuel," which includes "electricity."[79] But this hasn't stopped the agency. NHTSA's model year 2024–26 standards achieve electrification comparable to EPA's over the same time. The agencies proposed 2027 and later light- and heavy-duty standards, expected to be finalized this summer, would similarly harmonize with EPA's latest equivalent rules. By publishing its own standards separate from EPA, NHTSA creates a regulatory backstop, forcing automakers to comply even if EPA's rules were vacated by a court. Secretary of Transportation Pete Buttigieg was enthusiastic and candid about the role of his Department in the Biden Administration's transformational agenda, calling his new standards "a big step, and just one part of an all-of-the-above strategy" designed to "accelerate our path to cleaner energy and electric vehicles."[80]

The cost of this vehicle electrification is staggering. EPA estimates that its new light-duty standards will by themselves impose $870 billion in vehicle technology costs on consumers. The other rules carry similar $100 billion plus price tags, and these are almost certainly underestimates. Each of these rulemakings fails to address the current massive impact of cross-subsidization in electric vehicle prices. As

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[76] 42 U.S.C. § 7543(b).

[77] 42 U.S.C. § 7507.

[78] 49 U.S.C. § 32902(a)

[79] 49 U.S.C. § 32902(h); *id.* § 32901(a)(8); *id.* § 32901(a)(1)(J).

[80] U.S. Dep't of Transp., *Transcript of Buttigieg Remarks, CAFE Standards Announcement* (Apr. 1, 2022), https://www.transportation.gov/briefing-room/transcript-secretary-buttigieg-remarks-cafe-standards-announcement.

several commentors pointed out, automakers are losing $20–60 thousand per electric vehicle they sell and make up the difference by raising prices on conventional vehicles.[81] As the share of electric vehicles increases, this cross-subsidization will become more and more difficult, and the prices of all vehicles will rise dramatically. The agencies also brush aside a host of other problems with electrification: the lack of consumer preference for electric vehicles; the lack of charging infrastructure, the impact of electrification on the electric grid; and the colossal national security concerns implicated by importing an ever-growing number of electric vehicle batteries from China.

EPA PM NAAQS

In addition to banning end use directly, the Biden Administration has also implemented rules which pressure states to get in on the action. Pursuant to the Clean Air Act, EPA sets National Ambient Air Quality Standards ("NAAQS") for a variety of air pollutants, and then requires individual States to comply with these ever-tightening standards by submitting state implementation plans that explain what they will do to meet them. In February, EPA revised its NAAQS for particulate matter ("PM") by lowering the primary fine-PM standard down to just 9.0 micrograms per cubic meter from a previous level of 12 micrograms per cubic meter.[82] By way of context, the European Union has standards for fine PM of between

[81] There is overwhelming evidence that the manufacturing costs for electric vehicles far exceed their current MSRPs and that current prices are the result of cross subsidization. For example, Ford recently split its electric vehicle sales off from its internal combustion engine sales for accounting purposes: Ford e Segment sells the former while Ford Blue sells the latter. The company's 2023 Q4 SEC filings show the revenue and costs per unit for both types of vehicles. *See* Ford Motor Company, Form 10-Q, 2023 Q4, https://s201.q4cdn.com/693218008/files/doc_financials/2023/q4/Ford-2023-10-K-Report.pdf. The filing shows that while the company as a whole was profitable, Ford e Segment was not. Conventional vehicles returned a profit of about $2,617 per wholesale unit sold. *Id.* at 45. By contrast, electric vehicles lost around $40,500 per vehicle, an 80 percent loss. *Id.* at 46. This was an improvement from Ford's Q1 filings, which showed the electric vehicles segment losing $60,000 per vehicle. *See* Ford Motor Company, Form 10-Q, 2023 Q1, https://s201.q4cdn.com/693218008/files/doc_financials/2023/q1/ford-q1-2023-10-q-report.pdf. Other companies' statements confirm similar seven-figure losses. Chrysler Automobiles CEO Sergio Marchionne explained that while the electric Fiat 500e has an MSRP of about $33,000, the company is losing about $20,000 per car on each sale: a 60 percent loss. Matthew DeBord, *FCA Loses a Staggering $20,000 on Every One of Its All-Electric Cars*, Business Insider (Oct. 2, 2017), https://www.businessinsider.com/fca-loses-20000-on-every-one-electric-car-2017-10. General Motors' Chevrolet Volt and Bolt EV both lost approximately $16,000 per unit.

Manufacturers are willing to sustain a high loss on electric vehicles because these vehicles are necessary to meet EPA, NHTSA, and California's regulatory schemes. An automaker charges less for an electric vehicle so it can sell more of them and take advantage of their favorable regulatory treatment to comply with federal standards. But to ensure that it is not losing money as a whole, the manufacturer simultaneously raises prices on its internal combustion engine vehicles to offset the electric vehicle losses. Because electric vehicles are treated more favorably in all relevant regulations, these cross subsidies always go one way: from internal combustion engine vehicles to electric vehicles.

[82] 89 Fed. Reg. 16202

20 to 25 micrograms per cubic meter.[83] Most of the rest of the world has effectively no standards at all. Ambient air quality in the United States is already among the cleanest in the world and continues to fall.[84]

So why has EPA proposed to tighten its PM NAAQS? Presumably because these new standards are a creative way to force states to impose Malthusian limitations on new and existing industrial activities. The final rule will impose billions of dollars in costs to manufacturing, agriculture, and industry.[85] This will disproportionately affect the oil and natural gas industry because "fuel combustion for electricity production" and "diesel- and gasoline-powered highway vehicles" are some of the few sources of PM that can actually be prevented.[86]

EPA's new standards are arbitrary and capricious. The Clean Air Act requires "EPA to set air quality standards at the level that is 'requisite'—that is, not lower or higher than is necessary—to protect the public health with an adequate margin of safety."[87] As Justice Breyer explained, that means balancing "the public's ordinary tolerance of the particular health risk in the particular context at issue," the "comparative health risks," and "the acceptability of small risks to health."[88] Certainly, having some of the cleanest air in the world suggests that the "public's ordinary tolerance of the particular health risk" supports leaving the standards alone, a decision supported by public health costs of devastating industry. As Prof. Cass Sunstein has explained, "costly regulation imposes health risks simply by virtue of its cost. If a regulation produces less employment and more poverty, it may result in worse health as well."[89]

EPA Good Neighbor Rule

In addition to targeting emissions that affecting their own air quality, the Clean Air Act's "Good Neighbor" provision requires states to reduce emissions that will "contribute significantly to nonattainment of a NAAQS in a downwind State."[90] The statute sets up a deferential standard of review: if a state's

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[83] *EU Air Quality Standards*, European Commission, https://environment.ec.europa.eu/topics/air/air-quality/eu-air-quality-standards_en (last accessed Apr. 19, 2024).

[84] State of Global Air, *PM2.5 Exposure*, https://www.stateofglobalair.org/air/pm (last accessed Mar. 28, 2023).

[85] EPA estimates that its finalized standards will cost $590 million dollars. 89 Fed. Reg. 16373. As several commentors on the proposed rule pointed out, this is likely a gross underestimate. One analysis suggested that EPA's proposed standards could cost up to $23.7 billion. *See* Comment of U.S. Chamber of Commerce, EPA-HQ-OAR-2015-0072-2428 at 10, https://www.regulations.gov/comment/EPA-HQ-OAR-2015-0072-2428.

[86] 88 Fed. Reg. 5569.

[87] *See Whitman v. American Trucking Association*s, 531 U.S. 457, 465–472, 475–76 (2001).

[88] *Id.* at 494-95.

[89] Cass Sunstein, *Is the Clean Air Act Unconstitutional?* 98 Mich. L. Rev 303, 375 (1999).

[90] *EME Homer City Generation, L.P. v. E.P.A.*, 795 F.3d 118, 123 (D.C. Cir. 2015).

plan meets statutory requirements, EPA "shall approve" it.[91] But the Biden Administration has again taken a different approach. In early 2022, EPA announced a plan to reject the air-quality plans of roughly half of all states. It then revealed its own substitute federal plan, which relied on a coordinated and nationwide approach to emissions reduction, finalizing its "*Good Neighbor Plan" for the 2015 Ozone National Ambient Air Quality*.[92]

As Ohio explained while seeking a stay of EPA's rule from the Supreme Court, the Good Neighbor rule will make the permitting process for new industry "lengthy, resource intensive, and costly"; will "slow[ ] progress on other critical infrastructure projects"; and will "severely undermine the States' electricity-generation capacity and destabilize the States' power grids."[93] It is also illegal. EPA's authority to issue a federal-implementation plan only applies if the agency properly and individually rejects a state's implementation plan. But EPA didn't do that here. Instead, EPA used non-statutory factors to deny those plans, relied on data unavailable to the States at the time of their submissions, and contradicted its own earlier guidance.[94] EPA's new multi-state federal plan is also arbitrary and capricious because it relies on a multi-state analysis, instead of the normal factors, and fails to consider whether the plan would work if it wasn't applied to all 23 states—a hypothetical that is now a reality as the application of the plan to many states has been stayed by various federal courts.

A. Other Regulations

In addition to the regulations listed above, the Biden Administration has written hundreds more filling tens-of-thousands of pages of the Federal Register, that cumulatively amount to death for the energy industry by a thousand cuts. Among others, these actions include: canceling pipelines; issuing moratoriums on oil and natural gas leases on public lands; raising the social cost of carbon; urging state public service commissions to decommission fossil-fuel power plants; directing the Treasury Department to perform climate-risk assessments on banks; and adopting a myriad of energy efficiency regulations that force the electrification of various appliances and add costs to consumers.

IV. Against Self-Defeating Climate Policy

Each of these rules raise important technical and legal issues that are important to get right for their own sake. But the biggest threat that they collectively pose is to bettering human lives through clean

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[91] 42 U.S.C. §7410(k)(3).

[92] 88 Fed. Reg. 36654, 36656 (June 5, 2023).

[93] State Applicant's Emergency Application for a Stay of Administrative Action, *Ohio et al. v. EPA et al.,* No. 23A349 (Oct. 13, 2023) at 24–25, https://www.supremecourt.gov/DocketPDF/23/23A349/284940/20231013090543221_SCOTUS%20Stay%20Application.pdf.

[94] *Id.* at 19.

and efficient energy production. If they stand, these rules will impose severe compliance costs on energy companies, raise the price of energy, and have but a remarkably negative impact on human lives. Worse still, this cost will not be born for actual benefit to the climate, as increased costs for domestic energy will only serve to drive energy production and industry abroad to countries like Russia and China that will *increase* global GHG emissions.

B. These policies harm the public by driving up costs without any corresponding benefits.

The common thread uniting each of these policies is that they make using fossil fuels more expensive or impossible altogether. The various capital formation and disclosure regulations will cause some energy companies to conclude that they cannot bear the increased costs of compliance and subsequent litigation over allegedly misleading disclosures, and either go private and face higher capital costs or divest from fossil fuels entirely. The various production and transportation regulations add cost to and limit total fuel production while ensuring that what oil and natural gas is produced is not effectively transported to consumers. And the various end-use regulations mean that even if—in spite of all these added costs—consumers would still prefer to use fossil fuels they would be effectively prohibited from doing so. All of this will lead to increased costs for energy consumers. Because most Americans live paycheck to paycheck, a surge in energy prices beyond what is already occurring today, with record high gasoline and diesel prices, would be devastating.[95]

While the agencies seek to minimize these costs in their rulemakings, they don't ignore them entirely. Instead, the repeated refrain is that the enormous cost of these regulations is offset by the benefits of avoiding damages from climate change. But that is a dubious claim.

Although increased GHG emissions are generally associated with rising global temperatures, there remains significant scientific uncertainty around feedback effects and the path of warming that we are currently on. The worst predicted harms from climate change—melting ice caps, raging wildfires, etc.—are premised on an outdated warming scenario developed by the U.N.'s International Panel on Climate Change ("IPCC") called RCP8.5, which projected a temperature rise of around 5°C by 2100.[96] But the

[95] Jessica Dickler*, As Inflation Heats Up, 64% of Americans Are Now Living Paycheck to Paycheck*, CNBC (Mar. 8, 2022), https://www.cnbc.com/2022/03/08/as-prices-rise-64-percent-of-americans-live-paycheck-to-paycheck.html.

[96] IPCC, *Climate Change 2021: The Physical Science Basis* 1856 (2021) (Table 12.12: Emergence of CIDs in Different Time Periods, As Assessed in This Section), https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf.; Zeke Hausfather & Glen P. Peters, Comment, *Emissions—The "Business As Usual" Story Is Misleading*, 577 Nature 618, 618 (2020); Zeke Hausfather, *Explainer: The High-Emissions 'RCP8.5' Global Warming Scenario*, CarbonBrief (Aug. 21, 2019), https://www.carbonbrief.org/explainer-the-high-emissions-rcp8-5-global-warming-scenario/.

latest projections of the International Energy Agency expect a median warming of around only 2.4°C by 2100.[97]

From the warming we have experienced to date, there has been only limited harm. According to the IPCC, the only extreme weather today attributable to climate change with medium- or high-confidence are limited hot (primarily in the tropics) and cold spells (primarily in Africa, Australia, and Northern South America).[98] This warming was not a net negative. While both extreme hot and extreme cold can be fatal, extreme cold is far more deadly. A 2015 meta-study found that 17 times more deaths are attributable to low temperatures than to high.[99] This is why a 2021 study found that, while heat-related deaths have increased somewhat over the last two decades, they were more than offset by reductions in cold-related deaths, with the net effect that climate-related mortality has decreased by about 166,000 deaths per year.[100]

Extreme weather features prominently in the news—perhaps because of the frightening sense of awe inspired by hurricanes, tornadoes, floods, and droughts. But the IPCC reports that the frequency and intensity of droughts, floods, and storms (including tropical storms and hurricanes) do not appear to have meaningfully increased over the last century.[101] Meanwhile, deaths from extreme weather events have been plummeting as a wealthier, more energized world has proven far more resilient than in times past. Take hurricanes, for example. While there is large annual variability in hurricane activity, the data shows no obvious increasing trend.[102] Tornadoes are also often mentioned—but tornadoes of a greater than F3 magnitude have shown a *downward* trend over the last 70 years.[103] Flood damage as a percentage of GDP has plummeted since 1940, and while wildfires have burned millions more acres of forest in the 2010s than in the 1990s, that number represents only a small fraction of the more than 40 million acres burned

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[97] In'l Energy Agency, *World Energy Outlook 2023*, at 22 (2023), https://www.iea.org/reports/world-energy-outlook-2023/executive-summary.

[98] IPCC, *Climate Change 2021: The Physical Science Basis* 1856 (2021) (Table 12.12: Emergence of CIDs in Different Time Periods, As Assessed in This Section), https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf.

[99] *See* Antonio Gasparini et al., *Mortality Risk Attributable to High and Low Ambient Temperature: A Multicountry Observational Study*, 386 Lancet 369 (2015), https://doi.org/10.1016/S0140-6736(14)62114-0.

[100] *See* Qi Zhao et al., *Global, Regional, and National Burden of Mortality Associated with Non-optimal Ambient Temperatures from 2000 to 2019: A Three-stage Modelling Study*, 5 Lancet Planet Health (2021) https://doi.org/10.1016/S2542-5196(21)00081-4.

[101] IPCC, *Climate Change 2021: The Physical Science Basis* 1856 (2021) (Table 12.12: Emergence of CIDs in Different Time Periods, As Assessed in This Section), https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf.

[102] *See* Philip J. Klotzbach et al., *Continental U.S. Hurricane Landfall Frequency and Associated Damage: Observations and Future Risks*, 99 Bull. Am. Meteorological Soc'y 1359 (2018), https://doi.org/10.1175/BAMS-D-17-0184.1.

[103] *See National Weather Service, Storm Prediction Center,* Nat'l Oceanic & Atmospheric Admin., https://www.spc.noaa.gov/wcm (last update Jan. 14, 2024).

nearly each year in the 1930s and 1940s.[104] While property damage from hurricanes has increased, this is due largely to increased growth and exposure resulting from the independent acts of third parties, i.e., more homes and more expensive homes built on the coastline.[105]

By far the most important factor regarding extreme weather is the impact that it has on human lives. There has been an over *90% decline* in annual global deaths from extreme weather over the last century even while the world population has more than tripled over the same time period.[106] Wealthier societies with abundant access to affordable energy are simply far safer places to live than they were a century ago. The large majority of the remaining deaths from extreme weather are concentrated in poorer nations with high rates of energy poverty. Spreading energy access to those currently in energy poverty is the key to further driving down deaths from extreme weather. While climate change is broad and complicated, it is simply incorrect to suggest that increasing extreme weather is posing a risk to businesses. If anything, the opposite is the case.

The methods used by EPA and others to project future risks are based on bad or bad-faith science.[107] Generally the costs and benefits of reducing GHG emissions are calculated using a social cost of carbon: a modeled future welfare cost of the global climate change impacts caused by emitting a metric ton of carbon dioxide or an equivalent amount of some other GHG. The use of models conveys the impression that scientists know significantly more about the consequences of climate change—and the effects of emitting a single ton of carbon dioxide—than they really do.

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[104] *See* Frances V. Davenport et al., *Contribution of Historical Precipitation Changes to US Flood Damage*, 118 PNAS (Jan. 11, 2021), https://doi.org/10.1073/pnas.2017524118; Sean A. Parks et al., *High-severity Fire: Evaluating its Key Drivers and Mapping Its Probability Across Western US Forests*, 13 Env't Res. Letter. (Apr. 18, 2018), https://doi.org/10.1088/1748-9326/aab791.

[105] Philip J. Klotzbach et al., *Trends in Global Tropical Cyclone Activity: 1990–2021*, 49 Geophysical Rsch. Letters, Issue 6, Mar. 14, 2022, https://doi.org/10.1029/2021GL095774; *see also* Adam B. Smith & Richard W. Katz, *US Billion-Dollar Weather and Climate Disasters: Data Sources, Trends, Accuracy and Biases*, 67 Nat. Hazards 387, 408 (2013), https://doi.org/10.1007/s11069-013-0566-5 ("[I]t is difficult to attribute any part of the trends in losses to climate variations or change, especially in the case of billion-dollar disasters."); Roger Pielke Jr., *"Billion Dollar Disasters" Are a National Embarrassment*, The Honest Broker (Jan. 8, 2023), https://rogerpielkejr.substack.com/p/billion-dollar-disasters-are-a-national.

[106] *See* Hannah Ritchie & Pablo Rosado, *Natural Disasters*, Our World in Data (rev. Jan. 2024), https://ourworldindata.org/natural-disasters.

[107] *See* Kevin Dayaratna et al., *Empirically Constrained Climate Sensitivity and the Social Cost of Carbon*, 8 Climate Change Econ., art. no. 1750006 (2017), https://doi.org/10.1142/S2010007817500063; Kevin Dayaratna & David Kreutzer, *Environment: Social Cost of Carbon Statistical Modeling Is Smoke and Mirrors*, 30 Nat. Gas & Elec., Issue 12, at 7 (2014), https://doi.org/10.1002/gas.21771; *compare* William D. Nordhaus, *Revisiting the Social Cost of Carbon*, 114 PNAS 1518, 1518 (2017) (estimating the SCC at $31/metric ton of CO_2), https://doi.org/10.1073/pnas.1609244114, *with* EPA, *Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances* 101 (Nov. 2023) (Table 4.1.1) (estimating the SCC at $190/metric ton of CO_2), www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf.

This veneer of scientific legitimacy masks the uncertainty underlying each of the many inputs to the system. In reality, the social cost of carbon model is a black box: it takes in hundreds of assumptions about future human behavior, emissions, temperature rise, damages, and discount rates, and throws out a single concrete number. But the vast range of calculated SCC values puts the lie to these claims. Richard Tol, an Economist with the University of Sussex, observed that "published estimates [of the social cost of carbon] range from [negative $]771 [per ton of carbon dioxide] to [positive $]216,035 [per ton of carbon dioxide]. Research cannot reduce the span of credible estimates by much, as the future is uncertain and ethical parameters are key."[108]

EPA's latest estimates of the social cost of carbon establish an "official value" of $190 per metric ton of carbon dioxide emitted in 2020—more than seven times higher than the value assigned by the Interagency Working Group on the Social Cost of Greenhouse Gases in 2010. EPA managed to discover this higher value despite reduced warming projections by adapting other parts of their model, namely the damage function (translating predicted physical changes into monetized estimates of net economic damage) and discount rate (translating these future damages into the amount of money the individuals experiencing the climate change impacts would be willing to pay now to avoid them).

While EPA has disavowed RCP8.5 for the purposes of predicting emissions, it snuck it back into its models in its damage functions. RCP8.5 accounts for the majority of climate impacts in almost every damage study EPA relies on.[109] For many of those studies damages are near zero or even negative when smaller temperature impacts are considered. Even if these inflated effects are considered, approximately 50 percent of EPA's damages are based on projected temperature changes of between 3–8°C by 2300. As Roger Pielke explained, "RCP8.5 does the heavy lifting" in EPA's damage module.[110]

EPA's discount rate is also highly dubious. Because money today is worth more than the same amount in the future, the social cost of carbon uses a Ramsey discount rate to determine how future costs and benefits can most appropriately be compared to present ones. The EPA's most recent estimates dropped the central discount rate from the 3 percent rate used in previous calculations to 2 percent, citing "ethical" considerations. While this is a small percentage change, it had an outsized impact on the final number. EPA's 2023 SCC estimates show that shifting from a 2.5 percent to a 1.5 percent discount rate nearly triples the SCC from $120 to $340 per metric ton of carbon dioxide emitted in 2020.

There is reason to suspect that the final choice was politically motivated. At the same time EPA was developing these new social cost of carbon estimates, the Biden Administration was developing all

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[108] Richard Tol (@RichardTol), Twitter (Feb. 22, 2021, 2:12 AM), https://perma.cc/3BYS-983D.

[109] Roger Pielke Jr., *Secret Sauce*, The Honest Broker (Dec. 4, 2023), https://perma.cc/RCK2-MCNR (emphasis added).

[110] *Id.*

of the extremely costly regulations laid out above. To offset these costs, EPA had to discover benefits that would justify them. During a Brookings Institution forum on the social cost of carbon in April 2023, *New York Times* reporter Coral Davenport mused about how the Biden Administration could best justify its upcoming rules:

> The Biden administration is preparing, in the next couple of weeks, to propose what I think will be the most aggressive standard the US has ever seen on US auto emissions. It will be designed to essentially end sales of the internal combustion engine in our lifetime. …[T]hat is a transformation of a cornerstone of the US economy as we have known it for the last century. How do you economically justify that? One way you do that is you come in with the social cost of carbon at $192 per ton. If you can justify, if you can say this rulemaking that will phase out the internal combustion engine and force automakers to change everything they've done, force all of us to buy EVs—almost whether or not we want to—if you say the cost of every ton of carbon dioxide that comes out of that tailpipe is $192—hurts us all $192—boom, you basically have your economic justification for this powerful rulemaking.[111]

Ms. Davenport's estimate was on the nose: EPA's unrounded 2020 SCC was $193.[112] That this number reflects politics more than science is obvious.

C. These policies are self-defeating of their goal to reduce GHG emissions.

The most frustrating part of this policy package is that cannot hope to achieve its goal of reducing GHG emissions globally. Each of these rules is focused on the United States, which means their main impact will be to make it more expensive and riskier to produce oil, natural gas, and everything else in the United States. When faced with high price tags domestically and lower prices abroad, many companies will choose to manufacture internationally and import their products. That means that instead of reducing emissions, these policies often just displace them to China, Russia, Iran, Venezuela, and other countries with comparatively less stringent environmental regulations. Carbon emissions for Chinese steel are two times greater than those for American steel, and American natural gas produces far fewer emissions than coal produced anywhere.[113] Outsourcing production to these countries would raise, not reduce, GHG

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[111] *Social Cost of Carbon*, Brookings Inst. (Apr. 3, 2023), https://www.brookings.edu/events/social-cost-of-carbon-what-it-is-why-it-matters-and-why-the-biden-administration-seeks-to-raise-it/.

[112] EPA, *Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances* at 154 (Nov. 2023), https://perma.cc/5M3R-YACH.

[113] *See American Steel's Carbon Advantage,* AM. IRON & STEEL INST. (Sep. 2022), https://www.steel.org/wp-content/uploads/2022/09/American-Steel-Carbon-Advantage-_-Final.pdf.

emissions, with the side effect of displacing American jobs and empowering foreign adversaries. There is no policy "win" in those outcomes.

Climate change is a real and global challenge. But representing it as the most urgent threat to humanity today crowds out action on urgent issues like malnutrition, access to clean water, air pollution, endemic diseases, and human rights, among many others. The stakes are high because energy from hydrocarbons is the essential ingredient that makes everything happen. Even though many believe solar, wind, and batteries can transform our whole energy system and address the climate crisis, the reality is that they have not, will not, and cannot replace most of the energy services and raw materials provided by hydrocarbons.

Today, renewables are deployed almost exclusively in the electricity sector, which in total delivers only 20% of total primary energy consumption. Manufacturing is the largest user of energy globally, mostly in the form of process heat that cannot effectively be supplied via electricity. To make matters worse, aviation, global shipping, long-haul trucking, and mobile mining equipment have no viable replacements in sight. Critical materials from hydrocarbons provide nitrogen fertilizer that is responsible for fully half of global food production. In addition, hydrocarbons supply critical materials to produce plastics and petrochemicals that are essential components of modern lives. They also provide asphalt, paints, lubricants, cosmetics, 60% of global clothing fiber, and thousands of other products. Without hydrocarbons we would have no way to produce the vast quantities of steel and cement that undergird our built world. Even wind turbines, solar panels, and batteries are made of hydrocarbon materials and require massive amounts of process heat energy from hydrocarbons for their fabrication.

Put simply, fossil fuels are not going away. They are even necessary to reduce GHG emissions. Adopting the opposite assumption is wrong and makes for bad public policy that will needlessly harm the energy sector's ability to better human lives.

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I thank the Committee again for the invitation to testify today on this important subject, and I look forward to discussing it further with the Committee's members.