United States Senate
WASHINGTON, DC 20510

November 25, 2019

Attention: **Docket ID No. EPA-HQ-OAR-2017-0757**
Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review

Re: **Comments on the Environmental Protection Agency's proposed elimination of rules governing methane emissions from oil and natural gas facilities**

I. Introduction

On May 12, 2016 the Environmental Protection Agency (EPA) issued a final rule (hereinafter "the 2016 rule") announcing new source performance standards (NSPS) to curb emissions of methane, volatile organic compounds (VOCs) and hazardous air pollutants from new, reconstructed and modified oil and gas facilities.[1] The 2016 rule differed from previous rules regulating air pollution from oil and gas facilities in two important ways. First, it covered a broader array of facilities, including midstream transmission and storage facilities. And second, it regulated methane and VOC emissions from oil and gas facilities.

Following the promulgation of the 2016 rule, almost two dozen oil and gas trade associations[2] sued EPA to block the rule.

On March 28, 2017, President Trump issued an executive order entitled "Promoting Energy Independence and Economic Growth" which revoked numerous "energy and climate-related presidential and regulatory actions" and directed relevant agencies to "review existing regulations that potentially burden the development or use of domestically produced energy resources and appropriately suspend, revise, or rescind those that unduly burden the development of domestic energy resources."[3] This executive order specifically targeted the 2016 rule, and

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[1] The rule was published in the federal register on June 3, 2016. *See*, Oil and Natural Gas Sector: Emissions Standards for New, Reconstructed, and Modified Sources, Federal Register Vol. 81, No. 107 (June 3, 2016), pg. 35824, https://www.gpo.gov/fdsys/pkg/FR-2016-06-03/pdf/2016-11971.pdf

[2] Petitioners in this litigation include the American Petroleum Institute, Independent Petroleum Association of America, American Exploration and Production Council, Domestic Energy Producers Alliance, Eastern Kansas Oil & Gas Association, Illinois Oil & Gas Association, Independent Oil & Gas Association of West Virginia, Indiana Oil & Gas Association, International Association of Drilling Contractors, Kansas Independent Oil & Gas Association, Kentucky Oil & Gas Association, Michigan Oil & Gas Association, National Stripper Well Association, North Dakota Petroleum Council, Ohio Oil & Gas Association, Oklahoma Independent Petroleum Association, Pennsylvania Independent Oil & Gas Association, Texas Alliance of Energy Producers, Texas Independent Producers & Royalty Owners Association, West Virginia Oil & Natural Gas Association, Interstate Natural Gas Association of America, and Western Energy Alliance. *See*, Industry petitioners joint response in support of EPA's motion to hold cases in abeyance, *API v. United States EPA*, Case No. 13-1108 (D.C. Cir.), *available at* http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/case-documents/2017/20170417_docket-13-1108_response-1.pdf

[3] Executive Order 13783, 82 FR 16093, https://www.govinfo.gov/content/pkg/FR-2017-03-31/pdf/2017-06576.pdf

directed EPA to "as soon as practicable, suspend, revise, or rescind the [2016 rule], or publish for notice and comment proposed rules suspending, revising, or rescinding [the 2016 rule]."[4]

On September 11, 2018, EPA announced a proposed rule to weaken the 2016 rule mandating oil and gas companies to monitor their facilities for fugitive methane emissions and to repair any facilities where emissions are detected.[5] Together with several colleagues, I submitted comments on that proposal.[6]

On August 28, 2019, EPA announced a second proposal[7] to dramatically scale back the scope of the 2016 rule. In that proposal, EPA presented both primary proposal and an alternative proposal. The primary proposal would exempt midstream storage and transmission facilities from regulation while exempting remaining upstream production facilities from any requirements to limit methane emissions.[8] The alternative proposal would continue to include midstream storage and transmission facilities in the category covered by the 2016 rule, but would exempt all facilities from any requirements to limit methane emissions.[9]

Many of the legal deficiencies I identified in EPA's 2018 proposal are present here. In this comment, I lay out two arguments why this proposal should be withdrawn: (1) it is arbitrary and capricious; and (2) it is an effective delegation of agency rulemaking authority to a regulated industry.

First, the proposed rule is arbitrary and capricious because EPA failed to engage in reasoned decision making. The proposal's history is chock full of evidence that the proposal was primarily driven by the Trump administration's desire to do the fossil fuel industry's bidding rather than seriously and impartially attempt to implement the Clean Air Act's mandate to regulate source categories responsible for significant air pollution. To achieve that end, the proposed rule significantly underestimates the volume of increased methane emissions that would result from its implementation, and it does not sufficiently account for the cost of those increased methane emissions it acknowledges will result from its implementation.

Second, the proposed rule adopts the oil & gas industry's position that methane emissions from its facilities should not be subject to regulation. As such, the proposed rule qualifies as an effective delegation of EPA rulemaking authority to the fossil fuel industry that has captured it.

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[4] *Id.*

[5] The proposed rule was published in the Federal Register on October 15, 2018. *See*, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Reconsideration, Federal Register Vol. 83, No. 199 (Oct. 15, 2018), pg. 52056, https://www.gpo.gov/fdsys/pkg/FR-2018-10-15/pdf/2018-20961.pdf

[6] Comment submitted by Senator Sheldon Whitehouse, United States Senate, *et al.*, *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2017-0483-0998

[7] The proposed rule was published in the Federal Register on September 24, 2019. *See*, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review, Federal Register Vol. 84, No. 185 (Sept. 24, 2019), pg. 50244, https://www.govinfo.gov/content/pkg/FR-2019-09-24/pdf/2019-19876.pdf

[8] *Id.* at 50246

[9] *Id.*

II. Facts

A. The Trump Administration Has Been Captured by the Fossil Fuel Industry

Donald Trump's 2016 campaign was richly funded by the fossil fuel industry. Individuals associated with coal company Murray Energy were his largest source of donations; coal company Alliance Resource Partners was his fifth largest source of donations.[10]

Once Trump was elected, the money began to pour in, and Trump raised a record amount for his inauguration, nearly doubling the previous record.[11] Hess, Chevron, BP, Citgo, ExxonMobil, Consol Energy, Anadarko Petroleum, Cheniere Energy, Continental Resources, Murray Energy, and Valero all made six or seven figure donations.[12] In fact, companies and individuals in the oil & gas and mining sectors were the second largest source of donations after the financial services sector, providing a total of more than $10.4 million to Trump's inaugural committee.[13]

As the 2020 election ramps up, fossil fuel companies have continued to be among the largest donors to outside political spending groups supporting Trump's reelection. Energy Transfer Partners, a pipeline company, is the largest single source of donations to the Trump Victory political action committee (PAC), accounting for a total of more than $700,000 in donations as of November 13, 2019.[14] The oil & gas and mining industries are the second largest source of donations to the Trump Victory PAC, accounting for more than $5,000,000 in donations as of November 13, 2019.[15] Individual fossil fuel industry executives are also some of the largest donors to the Trump Victory PAC, including Kelcy Warren of Energy Transfer Partners ($360,000), Harold Hamm of Continental Resources ($50,000), and Forrest Lucas of Lucas Oil ($37,800).[16]

These donations likely represent only the tip of the iceberg of fossil fuel industry financial support for Trump's reelection. As 501(c)(4) organizations are allowed to accept unlimited donations with no disclosure and "super" political actions committees (Super PACs) are allowed to accept unlimited donations with only minimal disclosure, it may never be possible for the public to know how much money fossil fuel companies and their executives have donated to outside spending groups supporting Trump's reelection.

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[10] Top contributors, federal election data for Donald Trump 2016 cycle, The Center For Responsive Politics, https://www.opensecrets.org/pres16/contributors?cycle=2016&id=N00023864&src=c&type=f (viewed on Nov. 13, 2019)

[11] Trump 2017 Inauguration Donors, The Center For Responsive Politics, https://www.opensecrets.org/trump/inauguration-donors (viewed on Nov. 13, 2019)

[12] *Id.*

[13] *Id.*

[14] Trump Victory Top Donors 2020, Center for Responsive Politics, *available at* https://www.opensecrets.org/jfc/donors.php?id=C00618389&cycle=2020 (viewed on Nov. 13, 2019)

[15] Trump Victory Top Industries 2020, Center for Responsive Politics, *available at* https://www.opensecrets.org/jfc/industries.php?id=C00618389&cycle=2020 (viewed on Nov. 13, 2019)

[16] Timothy Cama and Kelsey Brugger, "Energy dollars fueling presidential contest," *E&E News* (July 19, 2019), https://www.eenews.net/stories/1060758685

The fossil fuel industry isn't just a major source of donations for Trump; it has also provided him with many of his closest advisors. During his campaign, when most publicly traded companies didn't want to be associated with a candidate famous for making offensive and controversial statements, oil and gas billionaire Harold Hamm created the Trump Leadership Council, a group of business leaders mostly from privately held companies to advise the president.[17] The energy industry was the industrial sector most represented on the Trump Leadership Council, with the heads of Alliance Resource Partners, Baker Hughes (an oil services company), Murray Energy, and Devon Energy all serving on the Council.[18] In addition, the head of the National Association of Manufacturers, a trade association whose membership includes many fossil fuel companies and which was recently identified as America's worst climate obstructor,[19] was also a member of the Council.[20] The Council's influence on Trump was clear, as Trump adopted the fossil fuel industry's talking points about slashing regulations and achieving "complete American energy independence."[21]

Once Trump took office, these fossil fuel industry talking points were quickly molded into the March 28, 2017 executive order that, among other energy-related things, directed EPA to review and rescind the 2016 rule. This executive order served as the foundation for the administration's unprecedented efforts to cater to the interests of the fossil fuel industry. If there was any doubt about whom this executive order was intended to benefit, that doubt was dispelled at the signing ceremony, to which fossil fuel executives and fossil fuel industry trade association representatives were invited.[22]

Fossil fuel industry influence on the Trump administration did not end with his election. In February of 2017, Chevron wrote to then-EPA Administrator Scott Pruitt with a list of deregulatory proposals the company wanted to see implemented. Included on this list was a request to "refocus methane regulations, particularly those that impact existing sources, to encourage voluntary approaches" as well as a complaint about the cost of existing methane regulations.[23] In March of 2017, Murray Energy CEO Bob Murray shopped an "action plan" around to various administration officials. Murray met with Energy Secretary Rick Perry to discuss his deregulatory wish list, and also provided copies of it to Vice President Mike Pence

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[17] Andy Kroll, "The Shadow Cabinet: How a Group of Powerful Business Leaders Drove Trump's Agenda," *RollingStone* (June 19, 2019), https://www.rollingstone.com/politics/politics-features/trump-leadership-council-members-full-list-848274/

[18] *Id.*

[19] "Trade Associations and their Climate Policy Footprint," InfluenceMap (Dec. 2017), *available at* https://influencemap.org/report/Trade-Associations-and-their-Climate-Policy-Footprint-067f4e745c9920eb3dfaa5b637511634

[20] *Id.*

[21] *Id.*

[22] Valerie Volcovici and Jeff Mason, "Trump signs order dismantling Obama-era climate policies," *Reuters* (March 28, 2017), https://www.reuters.com/article/us-usa-trump-energy/trump-signs-order-dismantling-obama-era-climate-policies-idUSKBN16Z1L6

[23] *See*, Appendix I, February 23, 2017 from Chevron CEO John Watson to EPA Administrator Scott Pruitt

and Pruitt.[24] Notably, Murray's "action plan" called for repealing the Clean Power Plan and withdrawing from the Paris Agreement,[25] both of which the Trump administration is in the process of doing.

Advising Murray on his efforts was his then-lobbyist Andrew Wheeler, now the current EPA Administrator. Prior to becoming Deputy Administrator and then Administrator, Wheeler was a long-time lobbyist for energy interests.[26]

Caption: Perry (head of the table) meets with Murray (third from right) and Wheeler (far right) to discuss Murray's "action plan."

In the first 23 months of the Trump administration, executive agencies have taken at least 92 actions to weaken policies to limit GHG emissions or promote fossil fuels.[27] These include proposals to rescind and replace the Clean Power Plan, freeze fuel economy standards for cars and light duty trucks, weaken methane leak testing and repair rules for oil and gas facilities, and weaken emissions rules for new coal-fired power plants.[28]

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[24] Lisa Friedman, "How a Coal Baron's Wish List Became President Trump's To-Do List," *The New York Times* (Jan. 9, 2018), https://www.nytimes.com/2018/01/09/climate/coal-murray-trump-memo.html

[25] "Action Plan for the Administration of President Donald J. Trump," Murray Energy (March 1, 2017), available at https://www.nytimes.com/interactive/2018/01/09/climate/document-Murray-Energy-Action-Plan.html

[26] Steven Mufson, "Scott Pruitt's likely successor has a long lobbying history on issues before the EPA," *The Washington Post* (July 5, 2018), https://www.washingtonpost.com/business/economy/epas-acting-administrator-has-long-lobbying-record-on-issues-before-the-agency/2018/07/05/a591cd40-6a6b-11e8-bea7-c8eb28bc52b1_story.html?utm_term=.02987956d928

[27] Senators Ed Markey and Sheldon Whitehouse, "The Most Anti-Climate Administration in History" (Dec. 2018), https://www.markey.senate.gov/imo/media/doc/ANTI-CLIMATE%20REPORT%20.pdf

[28] *Id.*

Under the Trump administration, anti-climate, pro-fossil fuels actions have not been limited to just a few agencies, but rather have been carried out by multiple agencies across the federal government. The White House, EPA, Department of the Interior, Department of State, Department of Energy, Department of Transportation, Department of Agriculture, Department of Justice, as well as other federal agencies have all taken anti-climate actions under the Trump administration.[29]

In addition to specific regulatory changes to benefit the fossil fuel industry, the Trump administration has also significantly reduced the number of enforcement actions against polluters, many of them from the fossil fuel industry, that violate the Clean Air and Clean Water Acts as well as other federal laws and regulations. An investigation by *The New York Times* found that enforcement actions by the Trump EPA declined precipitously both in number and penalty size when compared to enforcement actions under the George W. Bush and Obama EPAs.[30] What's more, the Trump EPA moved to centralize decision-making around enforcement actions, taking power away from career civil servants and giving it to political appointees.[31]

Together with several colleagues, I have previously documented the close political, financial, and business connections between political leadership at EPA, including former Administrator Pruitt, current Administrator Wheeler, and former Assistant Administrator for the Office of Air and Radiation (the office in which the proposed rule was developed) Bill Wehrum, in several comments on EPA proposals to weaken rules limiting GHG emissions or seeking to restrict the types of scientific studies that can be used in rulemaking.[32] These comments also document the ways in which the fossil fuel industry, often through the myriad trade associations and front groups that it funds, orchestrated and dictated the terms of these regulatory rollbacks.

More recently, together with Senator Tom Carper, I documented how Wehrum and his deputy David Harlow used their position at EPA to benefit clients of their former law firm; many of these clients hail from the fossil fuel industry.[33] Prior to becoming head of the Air Office,

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[29] Senator Edward J. Markey and Senator Sheldon Whitehouse, "The Most Anti-Climate Administration in History" (Dec. 2018), https://www.markey.senate.gov/imo/media/doc/ANTI-CLIMATE%20REPORT%20.pdf

[30] Eric Lipton and Danielle Ivory, "Under Trump, E.P.A. Has Slowed Actions Against Polluters and Put Limits on Enforcement Officers," *The New York Times* (Dec. 10, 2017), https://www.nytimes.com/2017/12/10/us/politics/pollution-epa-regulations.html

[31] *Id.*

[32] *See, e.g.*, Sheldon Whitehouse, *et al.*, "Comment on EPA Administrator Scott Pruitt's improper involvement in Clean Power Plan-related rulemaking," *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2017-0355-17190; Sheldon Whitehouse, *et al.*, "Comments on EPA and NHTSA's Proposed Rule Freezing Fuel Economy and Greenhouse Gas Emissions Standards for Cars and Light Trucks," *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2018-0283-5483; and Sheldon Whitehouse, *et al.*, "Comments of EPA's Proposed Rule Excluding Important Scientific Studies From EPA Rulemaking," *available at* https://www.regulations.gov/document?D=EPA-HQ-OA-2018-0259-6912

[33] Tom Carper and Sheldon Whitehouse, "Redefining Air: Industry's Pipeline to Power at EPA's Office of Air and Radiation" (July 2019), https://www.epw.senate.gov/public/_cache/files/2/d/2d7a4d97-5260-

Wehrum was a longtime lawyer for the fossil fuel industry. He repeatedly sued EPA to block clean air rules, and has represented the American Petroleum Institute (API), a petitioner against the 2016 rule, as well as American Fuel and Petrochemical Manufacturers, Chevron, ExxonMobil, Koch Companies, Koch Industries, Phillips 66, the Utility Air Regulatory Group (UARG), Duke Energy, and Dominion Resources, among other energy concerns.[34]

Beyond Pruitt, Wehrum, and Wheeler, EPA leadership has been stocked with officials closely tied to the fossil fuel industry. For example, former Principal Deputy Assistant Administrator of the Air Office Mandy Gunasekara left EPA to found a dark money political spending group named Energy 45 that will help promote Trump's energy policies by raising money from fossil fuel industry interests.[35] She has been quoted as saying "[a]ny energy company that wants to stay in business and is being honest would support the president."[36] Office of Enforcement and Compliance Assurance (OECA) former Deputy Assistant Administrator Patrick Traylor was a lobbyist and lawyer for energy interests Dominion Energy, Koch Industries, and TransCanada prior to joining EPA.[37] The head of EPA's Office of Research and Development, David Dunlap is a former executive at Koch Industries.[38] In fact, Pruitt reached out to the fossil fuel industry to help staff EPA. Weeks after becoming EPA Administrator, he reportedly made a "plea" to top executives at API to help him identify oil industry leaders he could hire as regional EPA Administrators.[39]

Pruitt also sought to fill EPA's Science Advisory Board (SAB) with individuals recommended by fossil fuel interests; among the many industry-connected people he chose for the SAB were Merlin Lindstrom of Phillips 66 and Larry Monroe, a retired executive at Southern Company.[40]

In this pernicious environment, the prospect for fair and honorable regulation is vanishingly small, and provides important context for the proposed rule's substantive failures.

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[34] *See*, Appendix I.

[35] Anna Masoglia, "Former EPA official launches 'dark money' group to promote Trump's energy agenda," Center for Responsive Politics (Feb. 13, 2019), https://www.opensecrets.org/news/2019/02/epa-official-launches-dark-money-grp-promoting-trump-agenda/

[36] Timothy Cama and Kelsey Brugger, "Energy dollars fueling presidential contest," *E&E News* (July 19, 2019), https://www.eenews.net/stories/1060758685

[37] Kevin Bogardus, Corbin Hiar, and Arianna Skibell, "Enforcement pick shugs off conflict-of-interest concerns," *E&E News* (July 13, 2017), https://www.eenews.net/stories/1060057347

[38] Miranda Green, "Ex-Koch engineer to lead EPA office on scientific research," *The Hill* (Oct. 2, 2018), https://thehill.com/policy/energy-environment/409532-ex-koch-engineer-to-lead-epa-office-on-scientific-research

[39] Zahra Hirji, "EPA Chief Scott Pruitt Encouraged Oil Executives To Apply For Top Agency Jobs," *Buzzfeed News* (June 25, 2018), https://www.buzzfeed.com/zahrahiR.J.i/scott-pruitt-recruited-oil-executives-trump-hotel?utm_term=.jozV4jpZr3#.dvMR3kjomO

[40] Sean Riley and Kevin Bogardus, "Boards add industry and state officials, drop scientists," *E&E News* (Nov. 3, 2017), https://www.eenews.net/greenwire/2017/11/03/stories/1060065619

B. EPA Has Been Particularly Responsive to Industry Concerns about Methane Regulations

As discussed above, EPA has taken many actions benefitting the fossil fuel industry. This is particularly true with respect to methane regulations. While it was working on developing the instant proposal and its September 2018 proposal to weaken methane leak monitoring and repair requirements, EPA repeatedly sought to weaken, repeal, or delay initiatives and rules aimed at monitoring and reducing methane emissions from oil and gas facilities.

Within weeks of Pruitt's assuming control of EPA, the agency withdrew its request that oil and gas companies provide it with detailed information regarding methane emissions at facilities they operate.[41]

On June 5, 2017, EPA announced a three-month delay of the implementation of the 2016 rule as well as its intention to reconsider the standards.[42] One week later, EPA released a proposal to stay parts of the 2016 rule for two years.[43]

Environmental groups sued to block EPA's three-month delay of the 2016 rule; oil and gas industry trade associations intervened to support EPA's delay. On July 3, 2017, the U.S. Court of Appeals for the District of Columbia Circuit vacated EPA's three month stay.[44] On July 7, 2017, EPA filed a motion asking the D.C. Circuit not to require it to immediately begin enforcing the 2016 rule.[45] On July 31, 2017, the D.C. Circuit denied EPA's motion and ordered it to begin enforcing the rule.[46]

In March of 2018, EPA amended the 2016 rule to specify that methane leaks did not have to be repaired during unscheduled or emergency shutdowns.[47]

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[41] EPA Withdraws Information Request for the Oil and Gas Industry, U.S. Environmental Protection Agency (March 2, 2017), https://www.epa.gov/newsreleases/epa-withdraws-information-request-oil-and-gas-industry

[42] Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources; Grant of Reconsideration and Partial Stay, Federal Register Vol. 82, No. 106 (June 5, 2017), pg. 25730, https://www.gpo.gov/fdsys/pkg/FR-2017-06-05/pdf/2017-11457.pdf

[43] Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements, https://www.epa.gov/sites/production/files/2017-06/documents/oil_and_gas_2-year_stay_frn2.pdf

[44] *Clean Air Council v. Pruitt*, Case No. 17-1145 (D.C. Cir. 2017), https://www.cadc.uscourts.gov/internet/opinions.nsf/a86b20d79beb893e85258152005ca1b2/$file/17-1145-1682465.pdf

[45] EPA's Motion to Recall the Mandate, *Clean Air Council v. Pruitt*, Case No. 17-1145 (D.C. Cir. 2017), https://www.edf.org/sites/default/files/content/epa_request.pdf

[46] July 31, 2017 Order, *Clean Air Council v. Pruitt*, Case No. 17-1145 (D.C. Cir. 2017), http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/case-documents/2017/20170731_docket-17-1145_order.pdf

[47] Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources; Amendments, Federal Register Vol. 83, No. 48 (March 12, 2018), pg. 10628, https://www.gpo.gov/fdsys/pkg/FR-2018-03-12/pdf/2018-04431.pdf

Throughout this period, EPA also refused to develop and issue new rules for methane emissions from existing sources in the oil and gas sector, contrary to its obligation to do so under the Clean Air Act (CAA).[48] In April of 2018, 15 states and the city of Chicago sued EPA for its failure to promulgate new rules for methane emissions from existing oil and gas facilities.[49]

Collectively, these decisions are estimated to save oil and gas companies – many of them donors to the Trump campaign and/or outside spending groups affiliated with him – hundreds of millions of dollars.[50]

EPA's repeated efforts to weaken, delay, or repeal methane regulations took place against a backdrop of a seemingly endless series of meetings with the energy industry. In just his first few months on the job, Pruitt met with more than 40 energy interests; five of these are petitioners in litigation challenging the 2016 rule and many others are members of trade association petitioners and/or have facilities that would be regulated under the 2016 rule.[51] During this same period of time, Pruitt met with almost no environmental groups.

A review of several months of Wheeler's calendars from 2018 obtained via a Freedom of Information Act request reveals that he too was frequently meeting with fossil fuel industry companies as well as groups funded by the fossil fuel industry.[52]

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[48] Section 111(b) of the Clean Air Act requires EPA to establish "standards of performance" for emissions of air pollutants from new and modified stationary sources. These are known as "new source performance standards" (NSPS) and are the subject of both the 2016 rule and the instant rulemaking. When EPA establishes performance standards for new sources in a particular source category, in this case oil and gas facilities, EPA is also required under section 111(d) to publish guidelines for controlling emissions from existing sources in that same source category.

[49] Complaint, *New York v. Pruitt*, Case 1:18-cv-0073 (D.C. Dist. 2018), https://ag.ny.gov/sites/default/files/methane_complaint.pdf

[50] Hiroko Tabuchi and Eric Lipton, " How Rollbacks at Scott Pruitt's E.P.A. Are a Boon to Oil and Gas," *The New York Times* (May 20, 2017), https://www.nytimes.com/2017/05/20/business/energy-environment/devon-energy.html?_r=0

[51] "Who is E.P.A. Administrator Scott Pruitt Meeting With? A Detailed Schedule," *The New York Times* (Oct. 3, 2017), https://www.nytimes.com/interactive/2017/10/03/us/politics/document-Pruitt-Sked-and-McCarthy-Sked.html. These included: the National Association of Manufacturers, Duke Energy, the Edison Electric Institute. the National Rural Electric Cooperative Association, BP, Chevron, the American Petroleum Institute, the National Stripper Well Association, the Oklahoma Independent Petroleum Association, the Domestic Energy Producers Alliance, the American Gas Association, FirstEnergy, Consol Energy, Associated Electric Cooperative, the National Association of Royalties Owners, the National Mining Association, Big Rivers Electric Corporation, Kansas Electric Power Cooperative, South Texas Electric Cooperative, Central Missouri Electric Cooperative, Hoosier Energy Rural Electric Cooperative, Seminole Electric Cooperative, Deseret Power Electric Cooperative, Arizona G&T Cooperatives, Central Electric Power Cooperative, Georgia Transmission Corporation, Sho-Me Power Electric Cooperative, N.W. Electric Power Cooperative, Kentucky Association of Electric Cooperatives, North Dakota Association of Rural Electric Cooperatives, Minnkota Power Cooperative, North Central Electric Cooperative, Central Power Electric Cooperative, Basin Electric Cooperative, the Southern Company, Alliance Resource Partners, ExxonMobil, American Fuel & Petrochemical Manufacturers, Royal Dutch Shell, and Contura Energy.

[52] These companies and groups include Conoco Phillips, the National Ocean Industries Association, Love's Travel Stops, the U.S. Chamber of Commerce Global Energy Institute, Murray Energy, Duke

Likewise, a review of several months of Wehrum's calendars from 2017 and 2018 obtained via a Freedom of Information Act request reveals that he often met with fossil fuel industry companies and groups funded by the fossil fuel industry.[53]

The oil and gas industry also repeated lobbied EPA political appointees on methane regulations. For example, on July 18, 2017, representatives from API, Chevron, Anadarko Petroleum, and Hess met with Gunasekara and others to discuss methane regulations.[54] On March 2, 2018, representatives from Conoco Phillips met with Harlow to discuss methane.[55]

In April 2018, Gunasekara, Justin Schwab, and David Fotouhi met with Andeavor[56] and trade association GPA midstream to discuss source category definitions in relation to methane regulations.[57] Schwab and Fotouhi, Deputy General Counsels, worked as lawyers representing energy interests prior to joining the Trump administration.[58]

In March of 2019, BP and Shell met with Wehrum to discuss methane regulations and their companies' voluntary efforts to reduce methane emissions.[59]

In April 2019, Conoco Phillips, Chesapeake Energy, Hess, Chevron, Occidental Petroleum, Devon Energy, John Crane, Baker Hughes, and API all met with Clint Woods, Schwab, and Howard Hoffman to discuss methane regulations.[60] At the time of the meeting, Woods was Deputy Assistant Administrator at the Air Office. Before joining the Trump administration at EPA, Woods spent time leading the energy, environment, and agriculture task force at the American Legislative Exchange Council (ALEC). ALEC is a politically active group funded by the fossil fuel industry to oppose efforts to limit carbon pollution.[61]

Energy, HollyFrontier, Range Resources, American Fuel and Petrochemical Manufacturers, BP, PBF Energy, Williams Company, and TransCanada.

[53] These companies and groups include BTR Energy, Securing America's Future Energy, PBF Energy, the National Association of Manufacturers, Love's Travel Stops, and BP.

[54] July 18, 2017 EPA Meeting with API, https://www.regulations.gov/document?D=EPA-HQ-OAR-2017-0483-0008

[55] March 2, 2018 EPA-DC Meeting with Conoco Phillips RE: Alaska Issue https://www.regulations.gov/document?D=EPA-HQ-OAR-2017-0483-0070

[56] Note that prior to joining EPA, Fotouhi did legal work for Tesoro, which became Andeavor. *See*, David Fotouhi, *ProPublica*, https://projects.propublica.org/trump-town/staffers/david-fotouhi

[57] April 3 2018 Meeting with U.S. EPA and GPA, *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2017-0757-0010 (viewed on Nov. 16, 2019)

[58] Robin Bravender, "A specialist in Greek drama is killing the climate rule," *E&E News* (Sept. 11, 2017), https://www.eenews.net/stories/1060060183

[59] March 8 2019 Bill Wehrum Meeting with BP and Shell, *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2017-0757-0011 (viewed on Nov. 16, 2019)

[60] April 15 Clint Woods Meeting with API, *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2017-0757-0012 (viewed on Nov. 16, 2019)

[61] American Legislative Exchange Council, DeSmog Blog, https://www.desmogblog.com/american-legislative-exchange-council

The dominant role of the oil and gas industry in the process that led to this rulemaking also provides important context for the proposed rule's substantive failings.

III. Legal Argument

The proposed rule is illegal for two reasons. First, it is arbitrary and capricious as it is not the product of reasoned decision-making. And second, it constitutes an illegal delegation of regulatory authority to private interests, in this case the oil and gas industry.

A. The Proposed Rule Is Arbitrary and Capricious

The Administrative Procedure Act[62] permits courts to set aside agency actions found to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law."[63] In determining whether an agency action was "arbitrary and capricious, the courts look to several factors, whether: "(1) the agency 'relied on factors which Congress has not intended it to consider,' (2) the agency 'failed to consider an important aspect of the problem,' (3) the agency explained its decision in a way 'that runs counter to the evidence,' or (4) the action 'is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.'"[64]

Courts have also held that a rule is arbitrary and capricious if the promulgating agency did not "genuinely engage in reasoned decision making"[65] or if it did not "articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'"[66]

While judicial review of agency actions is usually "exceedingly deferential,"[67] when, given the totality of the circumstances, the agency appears not to have engaged in reasoned decision-making, a rule should be invalidated.

> "The scope of review under the "arbitrary and capricious" standard is narrow and a court is not to substitute its judgment for that of the agency. Nevertheless, the agency must examine the relevant data and articulate a satisfactory explanation for its action including a "rational connection between the facts found and the choice made." In reviewing that

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[62] 5 USC §500 *et seq*.
[63] 5 USC §706(2)(a)
[64] *Mendoza v. Secretary, Department of Homeland Security*, 851 F.3d 1348, 1353 (11th Cir. 2017) (quoting *Miccosukee Tribe of Indians of Fla. v. United States*, 566 F.3d 1257, 1264 (11th Cir. 2009))
[65] *Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 851 (D.C. Cir. 1970)
[66] *Motor Vehicle Manufacturers Association v. State Farm Mutual Automobile Insurance Co.*, 463 US 29, 43 (1983), quoting *Burlington Truck Lines, Inc. v. United States*, 371 U. S. 156, 168 (1962)
[67] *See, e.g., Fund for Animals v. Rice*, 85 F.3d 535, 541 (11th Cir. 1996)

explanation, we must "consider whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment."[68]

This heightened level of scrutiny calls on a court to "intervene not merely in case of procedural inadequacies, or bypassing of the mandate in the legislative charter, but more broadly if the court becomes aware, especially from a combination of danger signals, that the agency has not really taken a 'hard look' at the salient problems, and has not genuinely engaged in reasoned decision-making."[69] These concerns are epidemic for the proposed rule.

Additionally, courts have found that it is appropriate to more closely scrutinize regulatory decisions that constitute an abrupt change in course. If an agency makes such a regulatory U-turn, it must "provide a more detailed justification than would suffice for a new policy [...] when, for example, its new policy rests upon factual findings that contradict those which underlay its prior policy. [...] It would be arbitrary and capricious to ignore such matters."[70] "An agency cannot simply disregard contrary or inconvenient factual determinations that it made in the past."[71]

Recently, the United State District Court for the District of Montana rejected a Trump administration regulatory U-turn for exactly these reasons.[72] That case is instructive here. In 2015, the Obama administration denied a permit for the construction of the Keystone XL pipeline. That decision detailed how the pipeline was not consistent with climate change-related foreign policy considerations, and explained why 2015 was a critical time for climate action given rising carbon emissions and international movement towards limiting emissions. The Trump administration reversed that decision in 2017 without addressing either of these issues. The Montana court held this was arbitrary and capricious, writing, "[t]he [State] Department's 2017 conclusory analysis that climate-related impacts from Keystone subsequently would prove inconsequential and its corresponding reliance on this conclusion as a centerpiece of its policy change required the Department to provide a 'reasoned explanation.' The Department instead simply discarded prior factual findings related to climate change to support its course reversal."[73]

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[68] *Motor Vehicle Manufacturers Association v. State Farm Mutual Automobile Insurance Co.*, 463 US 29, 43 (1983), quoting *Burlington Truck Lines, Inc. v. United States,* 371 U. S. 156, 168 (1962) and *Bowman Transportation, Inc. v. Arkansas-Best Freight System, Inc., supra,* at 419 U. S. 285. *See also, Massachusetts v. EPA (*constraining EPA's discretion and subjecting the agency's deferral of a decision to hard look review)

[69] *Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 844-5 (D.C. Cir. 1970). In Greater Boston Television Corp., the biggest "danger signal" that caused the court to give an agency's actions a "hard look" was the fact that the chair of the Federal Communications Commission (FCC) had had potentially improper contacts with an executive at one of companies competing for a broadcast license to be attributed by the agency. Other "danger signals" that courts have held to trigger heightened scrutiny of agency actions include "abrupt shifts in policy" and "where the agency has demonstrated undue bias towards particular private interests."

[70] *FCC v. Fox Television Stations*, 566 U.S. 502, 515 – 16 (2009)

[71] *Id.* at 537 (Kennedy, J., concurring).

[72] *Indigenous Environmental Network v. U.S. Dep't. of State*, Case No. 4:17-cv-00031 (D. Mont. 2018)

[73] *Id.*

The instant rulemaking is similarly based on conclusory statements about climate change. The 2016 rule predicated its existence on reducing the methane emissions that are one of the main drivers of climate change. The 2016 rule features an extensive discussion of how it is an integral part of the government's strategy to combat climate change, including its connection to EPA's determination that methane emissions endanger public health and welfare, how it builds on existing regulations for oil and gas facilities, how it fits into the government's climate action plan, methane strategy, and methane reduction targets.[74] The rule also includes a detailed discussion of the negative effects of climate change and how methane emissions play a role in climate change.[75]

The proposed rule makes no effort to rebut any of these findings. Indeed, the proposal features little discussion of climate change other than to acknowledge that it will result in some foregone climate benefits from reduced methane emissions. Quite simply, EPA provides no credible explanation for the regulatory U-turn the proposed rule embodies, other than to claim that the 2016 rule's inclusion of midstream storage and transmission facilities[76] was improper because the "field gas" found in production and processing facilities contains greater impurities than pipeline gas found in midstream facilities.[77] Nowhere does EPA rebut the 2016 rule's finding that storage and transmission facilities use much of the same equipment as production and processing facilities and that methane emissions from upstream and midstream facilities are fundamentally interrelated.[78] Nor does it attempt to explain why its prior conclusions about climate change and the role methane emissions have in accelerating climate change were incorrect. As such, the proposed rule is arbitrary and capricious under both the *Fox Television Stations* and *Indigenous Environmental Network* decisions.

More troubling still, the proposal contains a section where EPA seems to minimize the contribution of methane emissions from the oil and gas sector to climate change and seeks comment on how it should determine when a pollutant from a particular source category makes a "significant contribution" to the relevant type of air pollution.[79]

In seeking additional comment on this subject, it would appear that EPA is attempting to develop a legal and factual basis for a future rule that would set a percentage threshold that emissions of a

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[74] Oil and Natural Gas Sector: Emissions Standards for New, Reconstructed, and Modified Sources, Federal Register Vol. 81, No. 107 (June 3, 2016), pg. 35830, https://www.gpo.gov/fdsys/pkg/FR-2016-06-03/pdf/2016-11971.pdf

[75] *Id.* at 35833-40.

[76] One might presume that EPA's decision to seek to artificially narrow the types of facilities covered by the relevant source category was prompted or influenced by the April 2018 meeting EPA political appointees had with industry representatives about this subject.

[77] Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review, Federal Register Vol. 84, No. 185 (Sept. 24, 2019), pgs. 50248, https://www.govinfo.gov/content/pkg/FR-2019-09-24/pdf/2019-19876.pdf

[78] Oil and Natural Gas Sector: Emissions Standards for New, Reconstructed, and Modified Sources, Federal Register Vol. 81, No. 107 (June 3, 2016), pg. 35832, https://www.gpo.gov/fdsys/pkg/FR-2016-06-03/pdf/2016-11971.pdf

[79] Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review, Federal Register Vol. 84, No. 185 (Sept. 24, 2019), pgs. 50269-71, https://www.govinfo.gov/content/pkg/FR-2019-09-24/pdf/2019-19876.pdf

particular pollutant from a particular source category would have to meet in order to be deemed to have provided a "significant contribution" to the relevant type of air pollution and therefore be amenable to regulation under the Clean Air Act.

Given that climate change is driven by greenhouse gas (GHG) emissions from around the globe, requiring that emissions of a particular GHG from a particular source category in the United States meet a percentage threshold in order to be subject to regulation under the Clean Air Act is nonsensical. Climate change is caused by cumulative GHG emissions, from all source categories. Moreover, the best available science suggests that net GHG emissions will have to be eliminated by 2050 if we are to avoid the worst effects of climate change.[80] Under such circumstances, *all* source categories of GHG emissions represent a "significant contribution" to climate change.

A full review of the technical deficiencies of the proposed rule is beyond the scope of this comment. But even a basic review shows that in an effort to achieve a result sought by the oil and gas industry, EPA engaged in a sham decision-making process lacking any rational connection between the facts and the choices made.

EPA concedes that the proposed rule would result in higher methane emissions and foregone climate benefits. However, it intentionally underestimates the costs associated with the additional carbon pollution that would be generated by the proposed rule by using a social cost of methane approximately eight to 25 times lower than the one used in the 2016 NSPS for oil and gas facilities.[81] If EPA had not artificially reduced the social cost of methane, the value of the forgone climate benefits would have outweighed the total cost savings to industry by almost $300 million for the period 2019 – 2025.[82]

Moreover, the social cost of methane used in the 2016 rule was already a low estimate. A recent survey of experts in the field yielded a mean social cost of carbon (SCC) approximately six times greater than the one used in the 2016 rule.[83] And recent peer-reviewed research has yielded SCC estimates even higher still.[84] What's more, the proposed rule does not in any way address the conclusions of the 2018 National Climate Assessment, which finds that climate change will have devastating effects on the U.S. economy.[85] Nor does it address the cavalcade of climate change-

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[80] Summary for Policymakers, IPCC Special Report on Global Warming of 1.5 Degrees Celsius, Intergovernmental Panel on Climate Change, https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/

[81] Regulatory Impact Analysis for the Proposed Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review, pg. A-6, file:///C:/Users/dd86294/Downloads/EPA-HQ-OAR-2017-0757-0004%20(1).pdf

[82] *Id.* at 5-10.

[83] Robert Pindyck, "The Social Cost of Carbon Revisited," pg. 28, National Bureau of Economic Research (Nov. 2016), http://web.mit.edu/rpindyck/www/Papers/SCCRevisitedNov2016.pdf. Social cost of methane estimates can be derived from social cost of carbon estimate by multiplying the social cost of carbon by the warming potential of methane, which is between 28 and 36 according to EPA.

[84] Katherine Ricke, et al., "Country-level social cost of carbon," *Nature Climate Change* 8 (Sept. 2018), pgs. 895 – 900, https://www.nature.com/articles/s41558-018-0282-y#ref-CR3

[85] Fourth National Climate Assessment, Volume II: Impacts, Risks, and Adaptation in the United States, https://nca2018.globalchange.gov/

related economic warnings coming from central banks,[86] asset managers,[87] investment banks,[88] economists,[89] and others.

EPA further underestimates the foregone climate benefits of the rule because it doesn't calculate the foregone climate benefits of reduced methane emissions from existing sources. Section 111(b) of the Clean Air Act requires EPA to establish "standards of performance" for emissions of air pollutants from new and modified stationary sources. These are known as "new source performance standards" (NSPS) and are the subject of both the 2016 rule and the instant rulemaking. When EPA establishes performance standards for new sources in a particular source category, in this case oil and gas facilities, EPA is also required under section 111(d) to publish guidelines for controlling emissions from existing sources in that same source category.

Under either EPA's primary proposal – limiting the source category to upstream facilities and eliminating methane requirements at those facilities – or its alternative proposal – eliminating methane requirements at both upstream and midstream facilities – the practical effect would be to absolve EPA of establishing performance standards for existing sources, which are far more numerous and are estimated to emit far more methane. EPA estimates that its proposal would result in approximately 320,000 additional metric tons of methane emissions from new and modified sources over the period 2019 to 2025 or roughly 45,000 metric tons per year.[90] However, if EPA were to develop performance standards for methane emissions from existing sources, experts estimate that they would reduce methane emissions by an additional 3.8 million metric tons of methane annually,[91] or 84 times the annual emissions reduction from new sources.

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[86] *See, e.g.*, Climate change as a source of financial risk, Network for Greening the Financial System (April 2019), *available at* https://www.ebrd.com/news/2019/ngfs-calls-for-action-by-central-banks-supervisors-and-all-relevant-stakeholders-for-greening-the-financial-system-.html. This report, authored by more than two dozen central banks, found that transition-related risks from climate change could cost $20 trillion to the global economy.

[87] *See, e.g.*, Getting physical: assessing climate risks, BlackRock (April 2019), *available at* https://www.blackrock.com/us/individual/insights/blackrock-investment-institute/physical-climate-risks. This report found that most U.S. metro areas would see annual climate-related losses of at least one percent of GDP by 2060, with some hard hit coastal metro areas facing annual losses of 15 percent of GDP.

[88] *See, e.g.*, Energy Darwinism II, Citi (August 2015), *available at* https://ir.citi.com/E8%2B83ZXr1vd%2Fqyim0DizLrUxw2FvuAQ2jOlmkGzr4ffw4YJCK8s0q2W58AkV%2FypGoKD74zHfji8%3D. This report suggests that global climate-related losses could total $72 trillion or 2.5 percent of global GDP by 2060.

[89] *See, e.g.*, Mercure, *et al.*, "Macroeconomic impact of stranded fossil fuel assets," *Nature Climate Change* (June 2018), https://www.nature.com/articles/s41558-018-0182-1. This paper suggests that transition-related climate risks could be particularly dangerous for the U.S. economy.

[90] Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review, Federal Register Vol. 84, No. 185 (Sept. 24, 2019), pgs. 50278, https://www.govinfo.gov/content/pkg/FR-2019-09-24/pdf/2019-19876.pdf

[91] Rosalie Winn and Jessica Christy, "EPA's proposal to rollback methane rules ignores scientific evidence, will lead to 5 million tons of methane pollution," Environmental Defense Fund (Sept. 3, 2019), http://blogs.edf.org/energyexchange/2019/09/03/epas-proposal-to-rollback-methane-rules-ignores-scientific-evidence-will-lead-to-5-million-tons-of-methane-pollution/

Even if one uses EPA's artificially reduced social cost of methane, the foregone benefits of eliminating this additional methane pollution dwarf the cost savings of the rule.

EPA acknowledges that its proposal would make it legally impossible to regulate methane emissions from existing sources, but dismisses this concern by claiming that oil and gas companies are engaged in voluntary efforts to limit methane emissions at existing sources.[92] This claim is risible, particularly in light of the fact that reports suggest that even those companies that claim to be committed to reducing methane emissions are among the worst offenders when it comes to venting and flaring methane at oil production facilities.[93] These reports are based on information that the companies report to state regulators. As such, this information would have been available to EPA had it attempted to verify whether or not corporate voluntary commitments to reduce methane emissions were in fact serious.

The obvious conclusion one must draw from the above record is that EPA did not in fact care about the facts. EPA political appointees' aim in replacing the 2016 rule with the instant proposal was to provide the oil and gas industry with the result it wanted: an effective end to methane regulations for new and modified sources and the foreclosure of EPA's legal authority to regulate methane emissions at existing sources. The factual record laid out in this comment details precisely the sort of "danger signals" the courts have found to warrant "hard look" review. Potentially improper contacts between regulators and regulated industries,[94] "abrupt shifts in policy,"[95] and "undue bias towards particular private interests"[96] are all present in this tawdry tale of industry capture. Based on this record, no court could plausibly conclude that EPA "genuinely engaged in reasoned decision making"[97] nor conclude that EPA could "articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'"[98] The proposed rule is therefore arbitrary and capricious and should be withdrawn.

B. The Proposed Rule Is an Illegal Delegation of EPA Rulemaking Authority to a Regulated Industry

Just as an agency rulemaking will be set aside if a court determines that it was arbitrary and capricious, an agency rulemaking should be invalidated if a court finds that the agency delegated its rulemaking authority to one or more private interests, because Congress "cannot delegate

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[92] Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources Review, Federal Register Vol. 84, No. 185 (Sept. 24, 2019), pgs. 50274, https://www.govinfo.gov/content/pkg/FR-2019-09-24/pdf/2019-19876.pdf

[93] *See, e.g.*, Lawrence Carter and Tim Donaghy, "Exxon and BP among worst for flaring in US oil fields despite green pledges," *Unearthed* (Oct. 17, 2019), https://unearthed.greenpeace.org/2019/10/17/exxon-bp-flaring-united-states-climate-change/.

[94] *Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 844-5 (D.C. Cir. 1970)

[95] *United Church of Christ v. FCC*, 707 F.2d 1413, 1425 (D.C. Cir. 1983)

[96] *NRDC v. SEC*, 606 F.2d 1031, 1050 (D.C. Cir. 1979)

[97] *Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 851 (D.C. Cir. 1970)

[98] *Motor Vehicle Manufacturers Association v. State Farm Mutual Automobile Insurance Co.*, 463 US 29, 43 (1983), quoting *Burlington Truck Lines, Inc. v. United States,* 371 U. S. 156, 168 (1962)

regulatory authority to a private entity."[99] "Although objections to delegations are "typically presented in the context of a transfer of legislative authority from the Congress to agencies, [...] the difficulties sparked by such allocations are even more prevalent in the context of agency delegations to private individuals."[100]

While it is clear that an agency may not *explicitly* delegate its rulemaking authority to private interests, an agency that *implicitly* delegates its rulemaking authority to private interests raises the same concerns. An agency is effectively captured by the private interests it regulates when its "'regulation is . . . directed away from the public interest and toward the interest of the regulated industry' by 'intent and action' of industries and their allies."[101]

In reviewing industry's comments during the rulemaking that culminated in the 2016 rule, it becomes apparent that the Trump EPA followed essentially all of the fossil fuel industry's suggestions when it came to how to undo the 2016 rule in the instant rulemaking. During the 2016 rulemaking process, industry urged EPA to recalculate and lower the social costs of methane and carbon. Specifically, the largest trade associations representing the fossil fuel industry including the U.S. Chamber of Commerce, the National Association of Manufacturers, API, and American Fuel and Petrochemical Manufacturers argued that the social costs of carbon and methane used in the rulemaking were too high because they included global and not just domestic costs of climate change.[102] As discussed, *supra*, the Trump EPA reduced its estimate of the social costs of carbon and methane, in part by following industry's suggestion to only consider domestic impacts of carbon pollution.

Industry also argued during the 2016 rulemaking process that EPA did not have the authority to expand the source category to include midstream facilities.[103] The Trump EPA adopted industry's position as its rationale for the proposed rule, and even met with industry about this specific topic, as mentioned, *supra*.

As described above, the proposed rule was the product of a process that was effectively delegated to industry. In addition to the fact that the proposed rule adopts industry's position while ignoring the public interest and minimizing the benefits of reduced methane emissions, there is also abundant evidence that EPA political staff essentially took direction from the fossil fuel industry with respect to this rulemaking. The fossil fuel industry had open access to EPA

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[99] *Ass'n of American Railroads v. USDOT*, 721 F.3d 666, 670 (D.C. Cir. 2013) rev'd on other grounds

[100] *Id.*, quoting *Nat'l Ass'n of Regulatory Util. Comm'rs v. FCC,* 737 F.2d 1095, 1143 (DC Cir. 1984).

[101] Lindsey Dillon, *et al.*, "The Environmental Protection Agency in the Early Trump Administration: Prelude to Regulatory Capture," *American Journal of Public Health* (April 2018), https://ajph.aphapublications.org/doi/10.2105/AJPH.2018.304360, quoting, Daniel Carpenter, editor, *Preventing Regulatory Capture: Special Interest Influence and How to Limit It*, pg. 73, Cambridge University Press (2014)

[102] Comment submitted by United States Chamber of Commerce, *et al.*, *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0505-6919 (viewed on Nov. 16, 2019)

[103] *See, e.g.*, Comment submitted by Howard J. Feldman, Senior Director, Regulatory and Scientific Affairs, American Petroleum Institute (API), *available at* https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0505-6884 (viewed on Nov. 16, 2019)

and senior EPA officials overseeing this rulemaking were consulting with them on it. Senior EPA officials were closely tied to the fossil fuel industry and had a long history of hostility towards rules designed to reduce greenhouse gas emissions including rules designed to limit methane emissions from the oil and gas sector, particularly on behalf of industry donors who bankrolled their political careers or industry clients they represented as lawyers or lobbyists prior to joining the Trump administration.

I am not the only one to conclude that the Trump EPA has been captured by industry. An article published in the *American Journal of Public Health* finds that EPA is exhibiting many signs of regulatory capture.[104] The authors of this article examined EPA actions from December 2016 through June 2017 and they interviewed 45 current and retired EPA employees. Among their findings pointing to regulatory capture:

- "Appointees have deep ties with industries."
- "Significant policy changes at the EPA favor businesses and industry, while probably incurring considerable health and environmental consequences."
- "Pruitt has regularly championed the interests of regulated industries, while rarely affirming environmental and health protections."
- "Pruitt dismissed many members of the EPA's Science Advisory Board and its Board of Scientific Counselors, created a new rule preventing EPA-funded scientists from serving on those boards, and—for the first time in agency history—allowed lobbyists on scientific advisory boards."
- "Pruitt's own meetings and schedule… are almost exclusively with company and trade organizations and rarely with environmental, public health, or citizen groups."[105]

The extreme and well-documented regulatory capture of the Trump administration is evidence that it has effectively delegated its authority to the industries that have captured it, in particular, the fossil fuel industry. There is no substantive difference between an agency explicitly telling a company or industry to write a rule for it, and an agency telling a company or industry that it will write whatever rule the company or industry wants. In both cases, the substance is all industry, whatever the letterhead, and the public interest is ignored. That is not lawful under well-established principles of administrative law.

For the foregoing reasons, I respectfully urge EPA to withdraw this proposed rule.

Sincerely,

Sheldon Whitehouse
United States Senator

Tammy Duckworth
United States Senator

[104] Lindsey Dillon, *et al.*, "The Environmental Protection Agency in the Early Trump Administration: Prelude to Regulatory Capture," *American Journal of Public Health* (April 2018)
[105] *Id.*

Chris Van Hollen
United States Senator

Jeffrey A. Merkley
United States Senator

Appendix I

John S. Watson
Chairman and Chief Executive Officer

February 23, 2017

Transmitted Via Email: Jones.Knolyn@epa.gov

The Honorable Edward Scott Pruitt
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460

Dear Administrator Pruitt:

Congratulations on your appointment as Administrator of the Environmental Protection Agency. I am confident your extensive experience in government, both in the state legislature and as Attorney General of Oklahoma, will be valuable in your new role.

The Environmental Protection Agency plays an essential role in continuing our national energy dividend. Responsible development of America's abundant energy resources creates millions of good paying jobs and has the potential to add significant tax revenues to local, state and federal treasuries. We support your commitment to pursuing policies that balance our national economic, environmental and energy security priorities.

We have written to President Trump to outline Chevron's view of the role that strong energy policy can play in the future of our country and internationally. Our recommendations to President Trump are attached for your consideration. We believe that consulting with stakeholders in the business community, particularly the energy industry, can significantly improve policymaking. We can do more to ensure our nation's energy security and protect our environment by working together.

Our government affairs team, led by Maria Pica Karp, Vice President and General Manager of Government Affairs, will be requesting a meeting for us during my next trip to Washington on March 21-23, 2017. I look forward to meeting with you at that time. In the interim, I hope that you will consider Chevron as a resource and extend my very best wishes for a successful tenure.

Sincerely,

Enclosures

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swat@chevron.com

Economic Growth and Energy Development

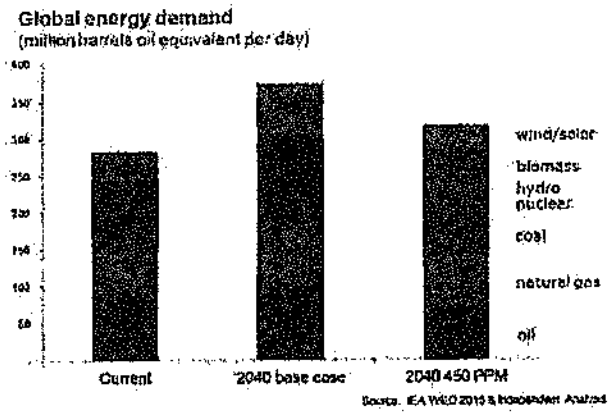
Summary

- U.S. leadership in oil and natural gas production provides a national energy dividend that supports economic growth and high quality middle-class jobs.
- Policies should support domestic energy development.
- Oil and gas development, including on federal lands, provides economic opportunity.
- Energy infrastructure investment is needed to meet changing demand.

Due to continued application of advanced technologies and innovation, the U.S. has transitioned from energy scarcity to energy abundance. Our nation is just beginning to reap dividends from this significant achievement. Families are benefiting from lower energy prices and manufacturers are advantaged by lower feedstock costs. Despite the down turn in prices, Chevron continues to provide high quality jobs and supply energy globally in an affordable, reliable, and responsible manner.

Discussion

The oil and gas industry is a major contributor to the U.S. economy. Globally, oil and gas provide approximately half of all energy needs today and are projected to continue to do so for the foreseeable future. In the U.S., oil and gas provide approximately two thirds of our energy today and are expected to be a comparable part of our energy mix in 2040. This significant component of the economy supported 9.8 million jobs (5.6% of total U.S. employment) and contributed $1.2 trillion to the national GDP at its recent high in 2011 (8% of total GDP). Since 2014, the oil and gas sector has been coping with a down cycle in energy prices, and crude oil prices have fallen by about 50%. Even during this downturn, in 2015 Chevron alone spent over $15 billion with U.S. suppliers, including over $2 billion with small businesses and nearly $800 million with women and minority-owned businesses.



Over the long term, our industry will continue to support millions of U.S. jobs and create thousands of new ones each year. By 2035, the energy and petrochemicals industries are expected to provide up to 1.9 million new high-quality jobs.

A robust oil and gas industry results in positive contributions to other industries and government. Recent advancements in hydraulic fracturing and horizontal drilling provide the basis for fueling economic growth in the decades to come. In addition to supporting high-quality jobs in the energy sector, oil and gas development benefits other industries including manufacturing. Increased domestic natural gas production supports the strong growth projected in domestic manufacturing through 2025. In 2015, domestic production from shale and the accompanying lower natural gas prices contributed to a manufacturing resurgence and resulted in an estimated $190 billion to GDP, 1.4 million new jobs, and $156 billion in disposable income to the U.S. economy. In addition to income taxes, America's oil and natural gas industry also pays the federal government rents, royalties and lease payments – totaling nearly $120 billion since 2000. A continued national energy dividend will

require industry investment, which government policy should encourage.

Increased oil and gas development on federal lands is needed. Onshore and offshore oil and gas resource development is safe, environmentally sound, and compatible with the long-term management of federal lands. Overall domestic oil and gas production has increased more than 70% and 20% respectively from 2010 to 2015. During the same period, production on federal lands decreased by approximately 3% and 40% respectively. Development of onshore and offshore resources could provide up to 130 billion barrels of oil and 1.5 quadrillion cubic feet of natural gas. This is enough energy to fuel 94 million cars for 50 years and heat all 66 million U.S. households that use natural gas heating for more than 300 years.

Maintaining a leadership position on energy requires energy infrastructure investment. U.S. energy infrastructure investment is an opportunity for both job creation and sustaining our national energy dividend. New and modernized energy infrastructure investment is needed as demand for various energy supplies (e.g. oil, gas, and electricity) changes. Uncertainty related to energy infrastructure increases costs and hinders development of all forms of energy. For example, uncertainly related to permitting of new pipelines can hinder development of new efficient natural gas power plants that supply electricity and provide back up for intermittent renewable electricity sources. Increased production and efficient use of natural gas contributes towards affordable energy for consumers and manufacturers.

Recommendations

Support domestic energy production to sustain the U.S. as a global energy leader and support the economy. Policies should balance economic, security, and environmental concerns. This is the case for both the development of new and implementation of existing policies. Policies should encourage expansion of energy production through: 1) increased recognition and consideration of the benefits derived from the oil and gas sector; 2) improved coordination among government agencies to advance project permitting; and 3) elimination of overlapping and duplicative regulations such as methane emissions requirements called for by EPA, BLM, and several states.

Continue and expand development of energy resources on federal lands onshore and offshore. Agencies should be given the authority and directive to go forward with onshore and offshore federal leasing plans. These plans should be designed to assure robust industry participation, resulting in economic benefits for industry and the nation as a whole.

Support strategic and sustained energy infrastructure investment. The review and approval process for energy infrastructure permits should be well defined, transparent, and predictable. Changes to processes should not be applied retroactively. Infrastructure permitting hurdles can negatively impact development and deployment of all forms of energy. Improving these processes should be a high priority.

Regulatory Framework

Summary

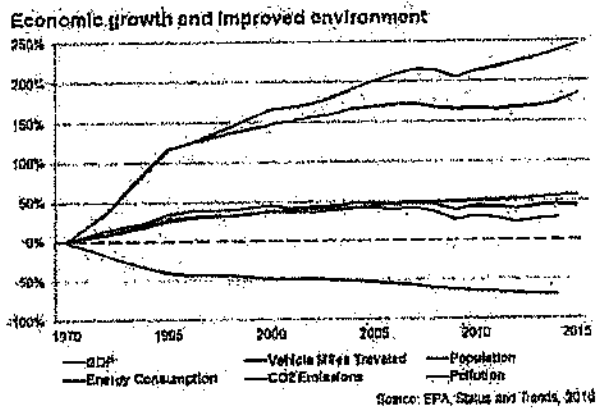
- Regulations should protect health, safety, and the environment while promoting a strong economy and energy security.
- Regulations should be based on rigorous cost-benefit analysis, sound science, and pragmatic pathways for implementation.
- Increased stakeholder engagement and transparent communication of costs and benefits is needed.
- Significant expansion of federal regulations could negatively impact investment in energy projects that produce jobs and provide revenues to treasuries.

Regulations aim to protect health, safety, and the environment. Along with the U.S. energy resurgence, there has been a notable increase in federal regulations as policies are still adjusting to an era of energy abundance. If regulations become overly burdensome, they hinder investment and innovation. Therefore, it is important that the U.S. have an efficient and effective regulatory framework that reduces economic burden while protecting health, safety and environmental quality. Meaningful regulatory reform could support the continuation of the American energy dividend that has helped improve our economy, environment, and domestic and international security.

Efficient and effective regulations that protect the environment, health and safety are in everyone's interest. Every day, Chevron employees responsibly manage our operations in full compliance with all applicable laws and regulations, including those governing the environment, health, and safety. We make positive contributions to the areas in which we operate and the markets we serve. Chevron's continued investment is valued by the communities we work in and our shareholders.

Discussion

A pragmatic regulatory framework can achieve environmental and economic growth goals. Over the last several decades, the U.S. has made measurable progress in achieving its environmental objectives. The air in urban areas in the U.S. is far cleaner than it was in 1970. From 1970 to 2014, aggregate national emissions of the six common pollutants alone dropped an average of 69% while gross domestic product grew by 238%. For example, since 1980, national averages of sulfur dioxide and carbon monoxide emissions are each down 84%. Particulate matter concentrations (i.e., smoke and soot) are down over 20% since 2000, when trend data began for fine particles. Ozone concentration levels are down 32% from 1980 levels. These are impressive accomplishments, and real examples of responsible development. They are proof that growth does not have to come at the expense of the environment. New regulations, however, could be a barrier to continued economic growth because they may result in diminishing benefits for the costs imposed. For example, the new National Ambient Air Quality Standard for ozone is at background levels in many areas (i.e., any emissions that are not related to human activity in that area).



Regulatory expansion could harm the U.S. energy renaissance. Federal regulation is estimated to cost approximately $2 trillion

annually. This represents a cost of over $16,000 annually to the average American household. The cost of all new regulations finalized in 2015 alone is estimated at $197 billion. Regulatory overreach is impacting our ability to grow the energy economy. The EPA's Waters of the U.S. Rule and BLM's Hydraulic Fracturing Rule are examples where agencies took expansive approaches to their authority and courts had to step in. Ensuring agencies stay within their statutory authority is necessary to avoid protracted litigation, reduce uncertainty, and achieve underlying policy objectives.

An effective regulatory framework requires robust cost-benefit analysis, sound scientific basis, and practical pathway for implementation. A principal component of an effective regulatory regime is robust cost-benefit analysis (CBA) to understand the trade-offs of a proposed regulation. Such analyses should consider the reliability of the underlying science and the feasibility of various implementation options. Regulations should be based on transparent, verifiable, and well-vetted (i.e., broadly peer reviewed) data. Today, there are a number of rulemakings that move forward either without, or with inaccurate, CBAs. The regulatory process does not have an effective avenue for challenging CBAs. Concerns about CBAs include: data quality, failure to consider alternatives; failure to consider opportunity costs (jobs and investment); incorrect assumptions; and lack of transparency. CBAs should be subject to adequate review by stakeholders and OMB. For example, CBAs should not rely on inputs, like a social of cost of carbon, unless they have gone through a robust public comment review and are consistent with federal guideline for developing CBAs.

Costs and benefits of regulatory actions should be presented in a standardized and easy to understand manner. CBAs can be complex and their results are reported out in an inconsistent format. This makes understanding and comparing the impacts of a regulation difficult if not impossible. A standardized format for reporting the key inputs and outputs of a CBA (including assumptions, costs, and benefits) that is easily understood by the public will improve transparency and understanding of government actions.

Stakeholder input should be encouraged for regulatory actions. Enforcement actions and settlement agreements reached behind closed doors have been used to create new policies and regulatory actions in lieu of a comprehensive stakeholder engagement process. Excluding stakeholders from the regulatory process diminishes trust in government. Companies want to work with government towards well informed policies and provide data driven insights to improve regulatory actions. Increased engagement with business is needed to avoid unintended consequences. For example, in the Clean Power Plan, industry input helped EPA avoid penalizing efficient cogeneration plants.

Recommendations

Actively enforce the principles of Executive Orders 12866 and 13563 on federal agencies. These Executive Orders outline the regulatory review process and require agencies to fully and objectively assess the costs and benefits of new regulations. The projected costs and benefits for regulations should be publicly reported in a standardized and straightforward format.

Direct OMB to mediate CBA differences between agencies and affected industries. OMB should adopt a process by which stakeholders can challenge the CBA developed by an agency. Such a process would enhance the accuracy of CBAs and result in a better understanding of the environmental impacts and economic consequences of a proposed regulation.

Reform "sue and settle" practices. Agencies should give public notice when they learn of a potential lawsuit that could be settled by

requiring a new rulemaking. Agencies should also be required to publish notices of proposed settlements in the Federal Register.

Reevaluate key existing and proposed regulations. Chevron is committed to working with government on all issues impacting our business. While there are numerous opportunities to improve regulations, we note the following:

Methane Emissions - Refocus methane regulations, particularly those that impact existing sources, to encourage voluntary approaches. New regulation should not be finalized or implemented until the Clean Power Plant litigation is decided as this could inform how the Clean Air Act may be applied for methane regulations.

Federal methane regulations will result in minimal reductions in methane emissions while increasing costs. For example, some of the prescriptive measures required by recent regulations could cost Chevron the equivalent of over $50,000 per ton of carbon dioxide equivalent. Regulatory compliance costs are high because minimal methane emission reduction results from the new regulatory requirements. Many states already have methane regulations in place, making federal requirements duplicative and unnecessary. Additionally, industry is reducing methane emissions on its own and incentivized to do so. Natural gas, the product we sell, is mostly methane. Prescriptive regulatory requirements could hinder effective, risk-based, and voluntary industry efforts.

Renewable Fuels Standard (RFS) – Repeal or reform the RFS. Volumetric mandates for the RFS are waived each year demonstrating that the current RFS is flawed and unworkable.

Key challenges remain for successful implementation of the current RFS including: 1) insufficient quantities of available biofuels; 2) realities of the E10 blendwall (the maximum amount most vehicles can safely take); and 3) vehicle and infrastructure limitations. Unattainable biofuel targets could result in significant negative impacts on the U.S. economy and consumers, and have negligible, if any, environmental benefits.

National Ambient Air Quality Standards (NAAQS) for Ozone - Direct the EPA to withhold implementing more stringent NAAQS for Ozone until 85% of nonattainment areas from a previous standard are in attainment. The NAAQS review timeframe could be extended from 5 years to 10 years, allowing states an opportunity to come into compliance with one requirement before a new one is set.

In 2015, the EPA lowered the ozone standard, despite the fact that the previous standard has not yet been fully implemented. It is nearly impossible for multiple regions of the country to meet the new standard and a significant portion of the country may be designated to be in "nonattainment". More than 700 counties will fall into new nonattainment areas by 2018. Nonattainment designation can stifle growth and industry investment in an area or state.

U.S. Tax Policy

Summary

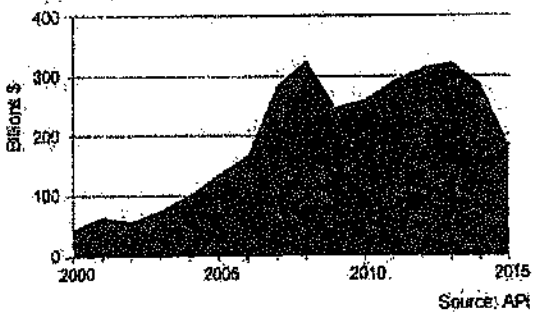
- Tax policy should enhance domestic investment in all forms of energy, including oil and natural gas, and the global competitiveness of U.S.-based companies.
- Tax reform should be fair and equitable and not disadvantage one sector of the economy, especially a sector such as oil and gas that is fundamental to our economy and national security.
- The oil and gas industry pays significant taxes, both domestic and international, and receives comparable tax treatment to other sectors.

Energy markets are global. U.S. energy companies, including Chevron, have multiple opportunities to invest in projects both domestically and overseas. Tax policy, along with regulations and policies impacting access, play a key role in determining which projects companies decide to pursue. Chevron supports tax policy that enhances both domestic investment in all forms of energy as part of the overall energy mix and the global competitiveness of U.S. companies.

Discussion

U.S. tax policy impacts domestic energy investment. Comprehensive tax reform has been contemplated by both parties and may be ripe for discussion by the new Administration and Congress. Policy priorities for both Republicans and Democrats require funding that may be secured through changes to the U.S. tax code. Any changes should enhance companies' ability to succeed by avoiding policies that hinder energy resource development or undermine the global competitiveness of U.S. energy companies. Since 2000, the oil and gas industry has invested over $3 trillion in the U.S. Between 2009 and 2014, our industry created nearly 170,000 jobs at a rate 5 times faster than the economy as a whole. Since 2014, oil and gas jobs numbers decreased 18% to adjust to falling energy prices. From 2011 to 2015, the U.S. oil and gas industry paid an average of 37 cents in taxes out of every dollar earned, compared to about 26 cents for other industrial companies in the S&P500. Today our industry is adjusting to the significant decline in global commodity prices and tax payments are being impacted accordingly. During this downturn, and as commodity prices recover, it is particularly important that tax policies have a fair and predictable impact on the oil and gas sector.

Capital spending for U.S. projects



Source: API

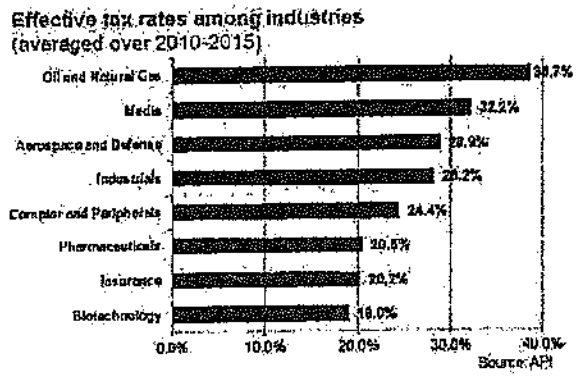
Targeted tax increases on the oil and gas industry are discriminatory and would harm the U.S. economy. Treating the oil and gas industry differently from other sectors is inequitable and ultimately penalizes all businesses and consumers. Repeal of longstanding energy-related provisions in the tax code would destroy high-quality domestic middle class jobs, decrease government revenues, diminish U.S. competitiveness, and be detrimental to national security. Punitive taxes will hurt a vital sector of the U.S. economy, dampen economic growth, and shift domestic oil and gas investments overseas. Expansion of the domestic oil and natural gas industry will provide a significant boost to the U.S. economy and enhance energy security.

The oil and gas sector receives tax treatment similar to those available to other sectors. The tax treatment of the oil and gas industry is sometimes mischaracterized as subsidies. The

tax deductions and provisions used by our industry are generally the same or mirror provisions available to virtually every other company in the U.S. In this regard, specific provisions include:

- Intangible Drilling Costs - ability to deduct intangible drilling costs. A basic principle of tax policy is to tax income after costs. Current tax policy allows the industry to deduct intangible drilling costs, just as other sectors deduct research expenses.
- Dual Capacity Taxpayers' Foreign Tax Credits - prevent double taxation on the income oil and gas companies earn overseas. These credits are similar to those received by virtually every other U.S. firm earning income abroad. They ensure our industry stays competitive with foreign energy companies.
- Domestic Manufacturer's Deduction ("Section 199") - encourages U.S. industries to maintain and create jobs at home. The program provides for a 9% deduction (6% for oil and gas).

Even with the current tax treatment, our industry has a demonstrated history of paying its fair share of taxes. From 2010 to 2015, our industry had an average effective tax rate of 38.7%, above the federal statutory rate of 35%.



Comprehensive tax reform should provide non-discriminatory treatment among different energy sources and all sectors should be treated equitably. If done correctly, comprehensive tax reform should encourage oil and gas companies to continue developing the energy resources the U.S. needs. Piecemeal tax reform efforts, such as international only or a patent box, are more likely to favor one industry over others. They would lessen the chance of achieving comprehensive tax reform that could lower the rate for all industries.

Recommendations

America needs a tax policy that enhances both domestic investment in all forms of energy and the global competitiveness of U.S.-based companies. Tax reform should be guided by the following principles:

- Reform should be comprehensive.
- All existing provisions of the tax code should be considered for reform.
- Taxes should be simplified.
- Reform should be equitable across all industries and sectors.
- To prevent double taxation of foreign-earned income, a fully-functioning foreign tax credit provision should be retained, unless it is replaced with a competitive territorial tax system.
- Tax reform should not discriminate among different energy sources or technologies or involve transfers from one energy sector to subsidize other components of the energy portfolio.

Climate Change

Summary

- Climate policy should require global engagement, be balanced and measured, transparently communicate costs and benefits to consumers, and support continued research, innovation, and application of technology.
- Significant progress can be made in reducing emissions through the expanded use of energy efficiency and natural gas.
- Increased focus on technology and innovation through early phase research and development is needed to meet long term climate objectives.

Thoughtful decision making on this issue has never been more important. Governments should pursue policies that concurrently address national environment, economic, and security priorities. They should avoid policies that increase energy costs, particularly for those least able to afford it.

In the U.S., policy actions can be taken that are complementary to all of our priorities, such as: enabling natural gas, promoting energy efficiency, and investing in early stage research for step-change innovations.

Oil and gas development can support our long-term climate objectives. Industry innovation, such as the use of hydraulic fracturing combined with horizontal drilling, has resulted in the resurgence of domestic oil and gas production. This has led to U.S. energy abundance, lower energy costs, increased use of natural gas, and reduced U.S. GHG emissions to 1991 levels.

Chevron is taking practical and cost-effective actions to control our GHG emissions and support complementary government efforts. We are promoting energy efficiency, investing in natural gas, developing world-scale CO2 storage projects, and reducing flaring. We have improved our energy efficiency by over 34% since 1992. Chevron has also invested in two of the world's largest CO2 injection projects: Gorgon in Australia and Quest in Canada. As a member of the World Bank sponsored Global Gas Flaring Reduction Partnership, we are working to minimize gas venting and flaring. We have reduced gas flaring by nearly 40% from 2011 through 2015. The CDP (formerly the Carbon Disclosure Project) consistently ranks Chevron among the best in disclosing information about climate change practices and GHG emissions. In 2015, the CDP gave Chevron a score of 99 out of 100.

Discussion

Government policy for climate change should adhere to the following principles: global engagement, a balanced and measured approach, transparency, and advancement and application of technology. Policymakers should consider these criteria when considering policy options.

Reducing GHG emissions is a global issue that requires global engagement and action.

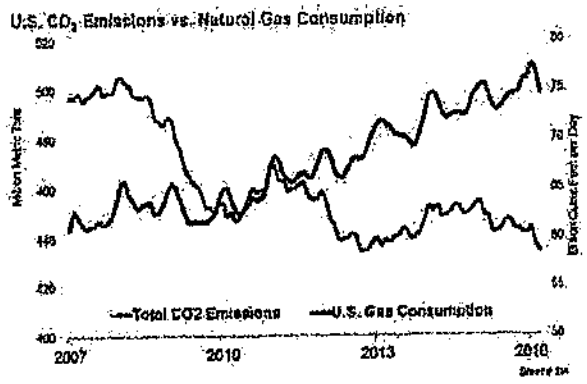
Balanced and measured policies can ensure: 1) long-term economic, environmental, and energy security needs are met; 2) costs are allocated equitably, gradually, and predictably; and 3) actions consider both GHG mitigation and climate change adaptation.

The costs, risks, trade-offs and uncertainties associated with GHG reduction and climate change adaptation efforts and policies must be transparent and openly communicated to global consumers.

Continued research, innovation, and application of technology are essential to enable significant and cost-effective mitigations to climate change risks over the long term.

Increased production and use of natural gas supports climate change objectives. It also advances national economic and environmental priorities. Natural gas fueled electricity

generation helped reduce U.S. energy related carbon dioxide emissions to 25 year lows, reaching 1991 levels during the first half of 2016. At the same time, the oil and gas industry produced natural gas more efficiently. From 1990 to 2015, U.S. natural gas sector methane emissions remained flat as production increased over 50%. Natural gas is a significant and increasing part of the national and global energy mix (29% and 23% respectively in 2015). Natural gas is essential for increased use of renewable electricity because it addresses intermittency challenges inherent to wind and solar. The U.S. has an opportunity to supply this lower carbon economic fuel to markets around the world to enable them to reap similar benefits.



Energy efficiency continues to be a cost-effective option. Since 2000, energy efficiency has helped the U.S. economy grow by nearly 30% while energy demand has remained flat. Improved energy efficiency, including in the transportation sector, can help meet climate change policy objectives. Increasing energy efficiency, such as through a 20% improvement in U.S. energy intensity, could save enough energy to meet the needs of California, New York and Florida combined. At Chevron, we have focused on, and successfully improved, our energy efficiency for decades and aim to sustain this trend going forward.

Increased research and development of lower carbon technologies should be encouraged. All forms of energy will be needed to meet the world's needs, including renewables that are scalable and economic without subsidies. Chevron has invested in technologies including solar, advanced biofuels, and hydrogen. Our experience tells us that innovation is needed to identify and advance low carbon technologies. Increased government support for early phase research will accelerate innovation, which industry can then use for technology commercialization. Chevron has partnered with universities, federal labs, and companies to advance technologies for all forms of energy.

Recommendations

Pursue climate policies that require global engagement, are balanced and measured, transparently communicate costs and benefits to consumers, and support continued research, innovation, and application of technology. Climate policies should be assessed against these criteria.

Support cost effective and scalable options for reducing GHG emissions, including energy efficiency and increased production and use of natural gas. Significant progress can be made towards our climate objectives through established and proven pathways.

Promote technology neutral, early phase research and development in low-carbon technologies. Increased focus in this area can accelerate the innovation needed for breakthrough technologies that can be adopted globally, at scale, and without subsidies. The Administration should invest in technology innovation related to all forms of energy and allow markets to pick winner and losers.

Security and Global Engagement

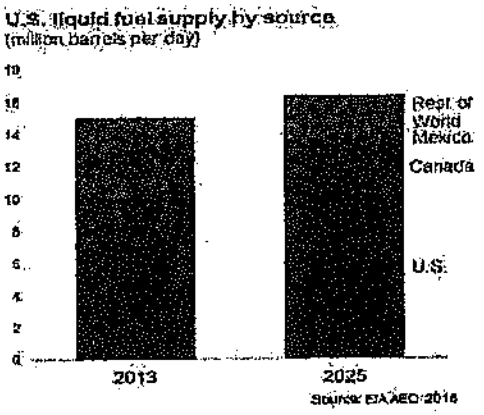
Summary

- Abundant domestic and global energy supplies support U.S. energy security.
- Affordable, reliable energy is essential for security because it promotes strong economies, sustained improvements in the quality of life, and poverty eradication.
- Maintaining energy security as the world's demand increases requires U.S. engagement and leadership abroad in calling for policies that promote efficient and open energy markets.

Over the past decade U.S. oil production has risen from around 5 million barrels per day to around 8.5 million barrels per day, and during the past two years domestic production surpassed imports for the first time since 1993. Natural gas production has grown nearly 50% since 2005 and is projected to soon exceed domestic consumption, making the U.S. a net gas exporter and reducing its emissions. Along with these clear benefits, this has enhanced national and global energy security. Federal policies are still catching up to an era of energy abundance and leveraging our energy resource to further improve security for the U.S. and our allies.

Discussion

Abundant reliable energy promotes national and global security. For energy to support a vibrant economy, it must be widely available, affordable and reliable—the basic principles of energy security. While the energy resurgence of the past decade has supported the U.S. economy and security, more is possible. Abundant affordable energy supplies make the global system more resilient to disruption, whether from geopolitical or natural causes, and bolsters both domestic and global economy and security. The U.S. has the resources and technology to increase global energy production and supply to markets, effectively increasing and diversifying the global energy mix.



Affordable, reliable energy is essential for security. Global energy demand is expected to increase by around one third by 2040. Oil and gas will continue to make up about half of the global energy mix for the foreseeable future. Increasing demand will be driven by population growth and the continued development of emerging economies. Abundant oil and gas production will promote strong economies, sustained improvements in the quality of life, and poverty eradication. Diverse, reliable and affordable energy promotes stability and ultimately is in the U.S. national interest. We need to continue developing oil and gas as part of the overall energy mix.

Well-functioning global energy markets are essential. Today's energy markets are complex and global. Just as consuming economies seek secure reliable energy supplies, producing economies need reliable buyers. No modern economy is fully self-sufficient. Regional market disruptions can result in global price shocks and have far reaching geopolitical implications. Global security, economic growth, and U.S. national interests are all positively influenced by access to open, transparent, and well-functioning markets. Participation in global markets, including through trade agreements that provide

a level playing field for U.S. companies, should be pursued.

U.S. leadership on energy requires continued global engagement. Key areas of focus should include: maintaining physical security of critical energy assets and supply routes; maintaining constructive dialogues with global energy partners, producers and consumers; and supporting rule of law and good governance through continuous engagement by U.S. agencies and embassies.

Recommendations

Encourage expansion of domestic and global energy production. Robust global energy production and ability to export U.S. oil and gas enhances our domestic and global energy security.

Encourage the free flow of energy from the U.S. to and from markets abroad. Support development of necessary domestic and cross-border infrastructure, including pipelines and terminals.

Engage on energy policy abroad with energy partners. Continued leadership by the Departments of State (regional and functional bureaus), Energy (International Affairs and Fossil Fuels), and Commerce on energy issues is vital to coordinating policy, crucial to maintaining sustained engagement with energy partners across the globe, and supporting the competitiveness of U.S. companies abroad. These agencies are well positioned to support U.S. economic interests, foreign policy priorities, and development objectives. They also serve an important role in reinforcing the longstanding U.S. commitment to transparency and good governance. U.S. leadership will be crucial in the coming years for sustaining these efforts. As such, an Assistant Secretary for the Bureau of Energy Resources should be created in the State Department to ensure energy diplomacy is fully integrated with our foreign policy.

Implement trade agreements, including the Trans-Pacific Partnership, with comprehensive investor-state dispute settlement mechanisms. High quality investment agreements support economic growth and a level playing field, the rule of law, and good governance. They provide predictability for long-term, large-scale investments abroad. Ensuring that trade agreements contain core protections and meaningful investor-state dispute settlement provisions, as outlined in the 2012 U.S. Model Bilateral Investment Treaty, are vital to protecting American companies abroad. They provide recourse against unfair treatment, support the rule of law, and provide a level playing field.

Engage with industry early when considering sanctions to avoid unintended consequences. During the past few decades, Congress and the executive branch have imposed economic sanctions on a variety of countries in the pursuit of foreign policy goals. Policy makers should engage with the private sector to avoid unintended consequences on energy supplies, markets and the economies of partner nations, while achieving foreign objectives.

Creating Prosperity and Unlocking Progress

Summary

- The U.S. private sector is a major contributor to international development.
- Investments in global development promote U.S. security and prosperity.
- Public-private partnerships support U.S. and global development.

Public-private partnerships are essential for economic development. By leveraging the capabilities, best practices, and resources of both the private and public sectors to drive economic growth and job creation, we collectively contribute to the overall prosperity of communities where we operate.

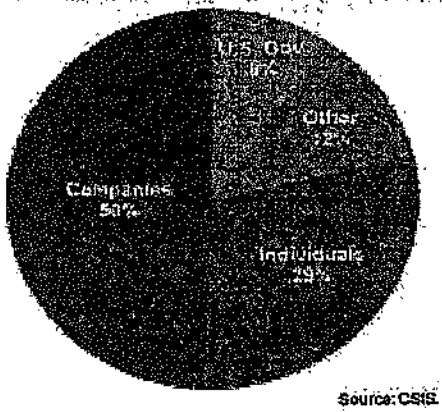
Affordable energy is a catalyst for economic growth and prosperity. Chevron provides energy responsibly and works with our partners to strengthen communities. Wherever we work, our Operational Excellence Management System provides a disciplined approach to working safely, protecting the environment, and operating reliably and efficiently. Our success is tied to the success of the communities where we work.

Discussion

U.S. companies support economic growth through their investments; by promoting best practices; and investing in public private-partnerships. Private companies provide 50% of financial flows to developing countries; 50 years ago it was only 30%. Chevron invests significant capital in major projects which require local goods and services. Our projects create jobs and generate revenue for local communities in the U.S. and abroad. In 2015, we invested more than $54 billion in total goods and services around the world. Our work, however, extends beyond our direct business investments, supplying energy, and providing stimulus to local economies through jobs and the taxes we pay.

We make strategic social investments around the globe that focus on health, education, and economic development. Our public-private partnerships in these areas involves working closely with NGOs, development agencies, and communities to understand a community's needs and develop programs that effectively meet those requirements.

U.S. investment in developing countries



Source: CSIS 2010

Chevron continues to innovate in public-private partnerships at home and abroad. From our first work with USAID in the early 2000s on the Angola Partnership Initiative, designed to help the country recover from decades of civil war, we remain committed to working with our partners and communities. Over the past 10 years, Chevron has invested over $1.9 billion in partnerships and programs in the U.S. and around the world to develop skilled workers, improve access to healthcare, and boost local economies. We work with local governments, community leaders, NGOs, think tanks, and development agencies to create long-term programs that address critical needs across the globe. By leveraging the expertise and resources of our public-private partnerships, we help drive scalable and sustainable results.

As of 2016, Chevron has established and invested in world class public-private partnerships in many countries where we operate, including: United States, Kazakhstan,

Angola, Nigeria, Bangladesh, Indonesia, and Thailand.

Education and economic development are key areas to drive development. Science, technology, engineering, and math education (STEM) is increasingly a driver of development. Few factors are more important to the success of our business and a country's competitiveness than individuals trained in STEM fields.

Chevron has a firm commitment to increasing and diversifying the long-term pool of STEM talent. Since 2013, we have invested over $150 million in education in the U.S. and over $300 million worldwide. In the U.S., we partner with leading organizations to prepare tomorrow's innovators for college and future careers. Our partnership with Project Lead the Way has brought project-based engineering curriculum to over 100 schools and has reached more than 100,000 students in 10 states including Pennsylvania, California, and Washington, D.C. The Appalachia Partnership Initiative is working to address education and workforce development in 27 counties in Pennsylvania, West Virginia and Ohio. Our partnerships with organizations such as Fab Foundation and Techbridge bring hands on STEM programs to students to arm them with skills needed to succeed in the jobs of the future. Abroad, our STEM partnerships in Thailand and Kazakhstan, as well as our enterprise and workforce development in Bangladesh and Nigeria aim to promote economic growth and development across these nations.

Improved health is a critical need in many nations that public private partnerships can help address. Since 2008, Chevron has partnered with The Global Fund, directing $60 million to programs in Asia, West Africa, and South Africa. As The Global Fund's inaugural Corporate Champion and one of its largest single corporate partners, our support of The Global Fund contributed to 17 million lives saved. In addition, since partnering with Pact in 2012, Chevron has provided $5.3 million to support HIV testing and counseling for over 53,000 pregnant women in Africa.

Supporting global development helps countries, businesses and communities grow. Investing in public-private partnerships is an important component for long term viability of a nation and our business. Through decades of experience, we have learned that our business success is deeply linked to society's progress and prosperity. This is why everywhere we work, we strive to build lasting partnerships to create prosperity now and for decades to come.

Recommendations

Support public-private partnerships in the U.S. and abroad. Whether to attain the UN 2030 Agenda for Sustainable Development or to expand existing partnership efforts through USAID or the Department of State, public-private partnerships can support U.S. interests. The new Administration should continue to support these efforts.

Support U.S. companies in advancing energy projects overseas. Engagement with other nations to advance U.S. company energy projects promotes both local and U.S. interests. Improving lives and growing economies in developing countries improves U.S. economic partnerships and security.