ENERGY & COMMERCE
CHAIR RODGERS

MEMORANDUM November 27, 2023

TO: Members of the Subcommittee on Environment, Manufacturing, and Critical Materials

FROM: Committee Majority Staff

RE: Hearing entitled "America Leads the Way: Our History as the Global Leader at Reducing Emissions."

I. INTRODUCTION

On Wednesday, November 29, 2023, at 10:00 a.m. in 2123 Rayburn House Office Building, the Subcommittee on Environment, Manufacturing, and Critical Materials will hold a hearing entitled "America Leads the Way: Our History as the Global Leader at Reducing Emissions." The hearing will examine lessons of America's experience and success in reducing emissions of air pollutants and greenhouse gases, among other environmental advances, while focusing on expanding the benefits of affordable, secure energy domestically and around the world.

II. WITNESSES

- **Mark W. Menezes,** President and CEO, United States Energy Association
- **Amanda Eversole,** Executive Vice President and Chief Advocacy Officer, American Petroleum Institute
- **Mark Mills,** Senior Fellow, Manhattan Institute
- **Karl Hausker, Ph.D.,** Senior Fellow, World Resources Institute

III. BACKGROUND

Energy is essential to the nation's economy, its productive capacity, its security, and the health and welfare of the public.

Blessed with tremendous natural resources and an economic system that fosters the free flow of capital to support its innovative and technological capabilities, the United States has developed and maintains the most sophisticated, efficient, and productive systems of energy production and delivery in the world. Its vast and complex electricity systems deliver uninterrupted power to the public, manufacturers, and industry—all of which serve to provide the affordable, reliable energy, feedstock, and power necessary to expand and protect America's economy, security, the environment, and the public welfare.

America's system of laws, governance, private property rights, institutional stability, research infrastructure, private capital formation, among many other factors, has fostered world-changing entrepreneurial and innovative activity that has driven the development and deployment of a range technologies, from electricity to nuclear technology to the silicon chip. Its economic growth has been matched with growth in more efficient production, including in energy, as the producers of goods and services constantly drive more efficiency into their operations to remain competitive.

Against this dynamic backdrop, environmental progress has kept pace. The U.S. Environmental Protection Agency (EPA) reports that, over the past 50 years, the combined emissions of the criteria air pollutants dropped by 78 percent.[1] These reductions occurred while the nation's GDP increased 304 percent, vehicle miles traveled increased 183%, its population increased over 60 percent, and energy consumption jumped 48 percent.[2] Large portions of these emissions reductions were achieved over the past twenty years. Other similar positive improvements may be seen in reductions in air toxics and regional haze. The number of days across 35 major U.S. cities in which air quality reaches levels considered unhealthy for sensitive groups is about a quarter of the number reported in 2000.[3]

America's air quality also surpasses the rest of the world. For example, U.S. levels of fine particulate matter—a key air pollutant–are far lower than the world average, lower than Europe and South-East Asia (including China).[4] American air quality advances involve the success of cooperative state and federal regulations, and the constant work of businesses and industry not only to meet standards but to drive improvements in efficiency.[5]

America experienced significant carbon dioxide reductions as well. Its economy-wide net greenhouse gas (GHG) emissions in 2021 were 17 percent below 2005 levels, primarily due to a shift to less CO2-intensive natural gas for generating electricity and an increase of renewable energy in the power sector, enabled by natural gas as a peaking fuel.[6] U.S. manufactured goods are 80 percent more carbon efficient than the world average.[7]

The American shale revolution transformed the nation's energy posture in the world and serves as a lesson in the benefits of American energy expansion and accompanying environmental benefits, including reductions in carbon dioxide emissions. From 2007 to 2019, hydraulic fracturing, horizontal drilling, and related innovations for production from shale and other "tight" formations, brought an eight-fold increase in extraction productivity for natural gas

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[1] See EPA Air Trends report, linked here. Criteria air pollutants include ground-level ozone, carbon monoxide, sulfur dioxide, lead, nitrogen dioxide, and course and fine particulate matter. See https://www.epa.gov/criteria-air-pollutants.
[2] Id.
[3] Id.
[4] See World Health Organization SDG Indicator 11.6.2 Concentrations of fine particulate matter, linked here and Energy and Commerce hearing testimony at page 16, linked here.
[5] There are limits to what regulations accomplish without negative consequences, particularly as emissions standards push beyond technological and economic feasibility, as examined for example in Subcommittee hearings here, here, and here.
[6] AGA-Report_Understanding-GHG-Emssions-from-Natural-Gas_2023.pdf
[7] American Steel is Cleaner than its Competition. Can We Leverage That? - Alliance for American Manufacturing

and a nineteen-fold increase for oil. These innovations reduced costs and spurred production to record-breaking levels, resulting in the United States becoming the world's largest oil and gas producer—a net exporter of oil and the largest exporter of gas.

The President's Council of Economic Advisors in 2019 estimated this greater productivity reduced the domestic price of natural gas by 63 percent and led to a 45 percent decrease in the wholesale price of electricity; a 10 percent drop in the global price of oil.[8] This in turn, saved U.S. consumers an estimated $203 billion annually, or $2,500 for a family of four. The increase of more affordable natural gas in electric generation especially helped the United States achieve the largest absolute reduction in carbon dioxide emission of all countries in the world.[9]

The shale energy boom switched America's approach to energy "from a mind-set of scarcity," as the International Energy Agency explained, "to one seeking to maximize the benefits of energy abundance."[10] World energy markets were reshaped. America began providing increased assurance of secure, reliable supplies of energy both for its markets and for the world.[11] This created new opportunities for additional emissions reductions globally. For example, oil and natural gas, mining and quarrying, and support activities in the United States produce significantly less fine particulate matter (PM2.5) and nitrous oxide (NOx) in producing a given amount of output than the sector in the rest of the world does, approximately 15 percent and 33 percent respectively.[12] The GHG footprint for the extractive industries is smaller as well. American extractive industries produce around 530,000kg of GHGs per $1 million of output, the global average of extractive industries is around 670,000kg of GHGs per $1 million of output, approximately 20 percent cleaner on a GHG basis.[13]

Up until the last few years, much of this strength in American energy and growth in emissions reduction has been the result of a reliance upon American natural resources and American workers. We must be careful not to allow mandates or singular focuses on certain technologies to drive us toward a dependence upon other countries for our supply chains, in particular a foreign adversary like China.[14]

Overall energy demand globally is projected to grow 50 percent by 2050, with fossil fuels continuing to dominate–accounting for more than 70 percent of world demand (down from over 80 percent today). Most of this growth will be from the developing world.[15] As policymakers examine how best to assure energy for a growing world and the role of United Nations

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[8] See "The Value of U.S. Energy Innovation and Policies Supporting the Shale Revolution," The Council of Economic Advisors, October 2019.
[9] See Global Energy & CO2 Status Report, International Energy Agency, March 2019.
[10] See International Energy Agency release, "The US shale revolution has reshaped the energy landscape at home and abroad, according to latest IEA policy review," September 13, 2019.
[11] The benefits of U.S. shale gas to European gas prices and savings may be seen in these data linked here, by the Energy Policy Research Foundation.
[12] NAM_Air_Quality_Standards_Analysis_Web_Version.pdf, pg. 26. However, the Volatile Organic Compounds (VOCs) footprint is higher due to differing production practices
[13] Ibid, 26-27.
[14] China and much of the developing world are projected to produce the bulk of carbon dioxide emissions growth in the future. See illustration of coal plant capacity since the 2015 Paris Agreement, linked here.
[15] See, for example, U.S. Energy Information Administration, International Energy Outlook, 2021, linked here.

Framework Convention on Climate Change (UNFCCC) agreements[16] to address climate risks, the lessons of American experience in energy, the shale revolution, and success in reducing emissions will remain an important consideration.

IV. ISSUES

The following issues may be examined at the hearing:

- The lessons of America's economic, energy, and emissions-reducing experience.
- The benefits of American energy technology for energy access and prosperity.
- America's history of expanding clean energy access domestically and abroad.

V. STAFF CONTACTS

If you have any questions regarding this hearing, please contact Peter Spencer, Drew Lingle, or Mary Martin of the Committee staff.

[16] From November 30 to December 12, 2023, the 28th Session of the Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC) will meet in Dubai, United Arab Emirates, to examine and negotiate the treaties and agreements established under the UNFCCC.