

March 31, 2023



The Honorable Chuck Fleischmann
The Honorable Marcy Kaptur
House Committee on Appropriations
Energy and Water Development Subcommittee
2362-B Rayburn House Office Building
Washington, DC 20515



Dear Chairman Fleischmann and Ranking Member Kaptur:



We are writing to request your support for increased research and development funding within the Fiscal Year (FY) 2024 Energy and Water Development Appropriations Bill to invest in innovations which will enable us to keep essential energy sources affordable, further reduce emissions and develop the next generation of clean fuels.



Today, natural gas is delivered safely through more than 2.6 million miles of transmission and distribution pipes to more than 187 million Americans, who use this clean affordable fuel to heat their homes, their water, and cook their food. More than 4.1 million jobs are connected to the natural gas industry, with 3.4 million associated with local distribution companies, or those delivering energy directly to America's homes and businesses. Today 83 percent of the jobs in the gas distribution sector are local, hiring from the communities they serve.



The impacts of climate change are evident in our communities today, adding to the urgency to secure reductions in carbon emissions economy-wide. Continued investment in research, development, and innovation will demonstrate U.S. leadership on clean energy and open the door to revolutionary technologies and fuels, such as renewable natural gas (RNG) and hydrogen. Today, RNG is used to fuel the cleanest commercially available heavy-duty trucks, resulting in a carbon neutral or carbon negative fuel, depending on the feedstock. Further research is needed to make our vehicles and power cycles cleaner and more efficient while continuing to drive down costs. Additionally, since RNG can be used in the same distribution infrastructure as natural gas, it provides a near-term renewable and low-carbon alternative for use in homes and businesses, and a sustainable energy option for the industrial sector, all while utilizing the existing, skilled workforce. Still, federal investment is needed to ensure RNG can be produced more efficiently and continue to be delivered safely to our homes and businesses, enabling existing energy infrastructure to be leveraged to provide access to low-carbon fuels.



Hydrogen also shows great promise as a low-carbon fuel for power generation, harder to decarbonize economic sectors such as manufacturing and heavy duty transport, and for energy storage. Additional research and demonstration funding is needed to develop new lower-cost pathways to produce hydrogen from both fossil and renewable sources; to enable the long-term storage of hydrogen at scale; to ensure we leverage existing natural gas infrastructure to deliver hydrogen safely and efficiently; and to safely use hydrogen





in our homes, businesses, industry, and power grid. These vital tasks will require both funding and thought leadership to achieve aggressive decarbonization goals.



The continued transition to a lower-carbon U.S. energy sector is also aided by the natural gas industry's continued focus on energy efficient technologies, both for the pipeline system and direct use applications. Continued federal R&D investment along with private capital deployment remain necessary to accelerate energy efficiency measures that can contribute even more to our shared emissions reductions goals. In the last decade, the U.S. added 6.28 million natural gas customers, yet greenhouse gas emissions dropped more than 13.1 percent over that time.



With unprecedented challenges come the opportunity for American leadership, technology, and innovation to provide the backbone of not only our economic recovery efforts, but of our fight against climate change. To that end, the undersigned companies respectfully request the inclusion of the following funding requests and Report Language to the Fiscal Year 2024 Energy and Water Development Appropriations Bill:



Account: Fossil Energy & Carbon Management, Resource Technologies & Sustainability, Natural Gas Hydrogen R&D



Request: \$50,000,000 for Natural Gas Hydrogen R&D



DeKalb County
GEORGIA

Report Language: Natural gas is an abundant and cost-effective natural resource that continues to have a tremendous environmental, national security, and energy benefits, but further innovation is needed to decarbonize our economy. The Committee supports the Department's efforts within the Resource Technologies and Sustainability office to utilize natural gas and related infrastructure more effectively for decarbonization solutions. The Committee provides \$50,000,000 for critical research to convert abundant, low-cost natural gas, natural gas liquids and other gas streams to low-carbon, sustainable products, including chemicals and fuels, such as hydrogen, ammonia and methanol while reducing or eliminating air emissions. Comprehensive planning approaches for transitioning segments of the economy (e.g., the power sector) using hydrogen and other low-carbon fuels (e.g., ammonia) should be part of the program, including analysis of the infrastructure required to store and transport these fuels. This may include feasibility assessments on using existing infrastructure such as pipelines and underground storage facilities for low-carbon fuels.



Account: Fossil Energy & Carbon Management, Hydrogen with Carbon Management

Request: \$110,000,000

Report Language: The Committee encourages the Department to continue expanding its research and demonstration capabilities toward production, storage, transport, and utilization of hydrogen. This work shall focus on net-negative carbon hydrogen production from gasification and co-gasification of mixed wastes, biomass, plastics and traditional feedstocks, solid oxide electrolysis cell technology development, carbon capture, advanced turbines, natural gas-based hydrogen production, hydrogen pipeline





infrastructure, and subsurface hydrogen storage. Research on emerging technologies with low-cost CO₂ capture, such as dry reforming and sorbent enhanced reforming, should be addressed.



The Committee is encouraged by the collaborative efforts with industry under the Geothermal Energy Oil and Gas Demonstrated Engineering (GEODE) Program, and provides \$20,000,000 for the Department to launch a similar industry-led effort in FECM regarding underground hydrogen storage.



Account: Fossil Energy & Carbon Management, Resource Technologies & Sustainability, Methane Emissions

Request: \$80,000,000 for Emissions Mitigation and Quantification

Report Language: The Committee provides \$80,000,000 for Methane Mitigation Technologies. The Department is encouraged to support activities to develop and demonstrate implementable, maintainable, and low-cost integrated methane monitoring platforms and standardized measurement protocols to better understand where and how much methane is being emitted. The Department is encouraged 1) to collaborate with external stakeholders in making use of commercially available technology solutions to monitor methane emissions and isolate sources of emissions at the individual facility level or finer scales, and 2) to explore, advance, and scale-up new and innovative methane emission detection and quantification solutions that further support reduction of methane emissions, including coordination with public-private partnerships. The committee is encouraged by what the Department is doing through Advanced Scientific Computing Research (ASCR) to better understand machine learning and uncertainty quantification for complex systems, and directs the Department to provide \$10,000,000 to set up a similar program in FECM to further evaluate advanced data collection, storage, and uncertainty analysis around methane emissions data.



Account: Energy Efficiency & Renewable Energy, Bioenergy Technology Office

Request: \$20,000,000 increase for RNG & Hydrogen R&D; \$50,000,000 for Renewable LPG

Report Language: Renewable Natural Gas (RNG) and hydrogen can be low-to- negative carbon fuels which can be sourced from a variety of renewable feedstocks, but deployment has been limited to RNG production from manure, organic wastes and biogas from landfills, and for hydrogen from fossil fuels or electrolyzers. To dramatically expand RNG and renewable hydrogen production to assist in meeting climate goals, gasification of wood wastes and other carbonaceous materials will need to be realized. To assist in technology solutions, particularly around syngas clean-up and lower carbon intensities for RNG and hydrogen produced, the Committee recommends \$20,000,000 to perform R&D of technologies to advance the deployment of conversion and purification processes to advance the supply of RNG and clean hydrogen, including the development of gasification and clean up technologies that can successfully and economically convert wood, agricultural and municipal solid waste to RNG or hydrogen.





Research should include technologies to enable the production of methanated hydrogen, which can be produced with biogenic CO₂ and hydrogen derived from renewable or other zero-carbon electricity to create a carbon-neutral methane that can be blended in existing gas infrastructure.

NORTH SHORE GAS*



Northwest Gas



Liquid propane gas (LPG) is being used by millions of Americans for heating and cooking purposes especially in rural areas, as well as in the commercial and (to some extent) the industrial sectors. In volume, the consumption of LPG is comparable to that of aviation fuels, and more than half is consumed in the residential sector. Today, LPG supply is covered as a by-product from petroleum refining, i.e. fossil based. With the shift away from fossil transportation fuels, LPG supply is expected to decrease substantially, unless a bio-derived LPG alternative can be found. To address this need, the Committee recommends not less than \$50,000,000 for research related to the development, pre-piloting, piloting and demonstration scale-up of renewable LPG or alternative fuels production, in parallel to the Department's focus on the scale-up of sustainable aviation fuels technologies.



In addition, the Committee recommends supporting the development of technologies for renewable chemicals production.



Account: Energy Efficiency & Renewable Energy, Building Technologies Office
Request: \$30,000,000 for Delivered Fuels R&D in Buildings

Report Language: The Committee recognizes that significant R&D gaps remain to transition to lower-carbon and zero-carbon fuels in buildings. The Committee encourages the Department to continue to explore research and development that can advance systems and appliances, driven by delivered fuels including renewable fuels and hydrogen, to meet consumer demand for high efficiency and environmentally friendly products in residential and commercial building applications, including heat pumps with power generation and water heating, increased utilization of renewable fuels and hydrogen, appliance venting, hybrid fuel-fired and electrically-driven systems, distributed carbon capture, mitigation of behind-the-meter methane emissions, and on-site (micro) combined heat and power to include cooling and integration with renewables. The Committee provides not less than \$30,000,000 to support these efforts.



PEOPLES GAS*



Thermally-driven heat pumps (THPs) offer the next generation of space conditioning and/or water heating for low-load buildings and have the potential to reduce greenhouse gas (GHG) emissions by 40 percent or greater in a typical home. Further work is needed to test and evaluate these technologies in the field, including application for waste heat recovery. The Committee has provided funding and direction for several years for this gas heat pump consortium, however, the Department has not taken any action. The Committee provides \$5,000,000 for the Thermally-Driven Heat Pump Consortium, led by a non-profit, to integrate and deploy new THP technologies in a joint industry partnership, and directs the Department to proceed without further delay.





Rinnai



Account: Energy Efficiency & Renewable Energy, Vehicle Technologies, Fuels and Lubricant Technologies

Request: \$20,000,000 for Natural Gas Vehicle Research

Report Language: The Committee is concerned with the lack of federal investment in natural gas vehicles and vehicles powered by renewable natural gas. Natural gas vehicles are the only option to reduce heavy-duty vehicle greenhouse gas emissions and NOx emissions this decade, particularly at the scale that is needed today. When using renewable natural gas, heavy-duty vehicles are the cleanest available technology and drive drastic carbon and criteria pollutant emission reductions. The transportation sector is the leading cause of NOx emissions (particularly in urban areas, areas surrounding ports, and other priority communities) that are causing detrimental respiratory health effects today across the country. Medium- and heavy-duty natural gas vehicles and natural gas-powered rail and marine equipment can be at the forefront of delivering dramatic improvements in the transportation sector. Within available funding, the Committee includes \$20,000,000 to address technical barriers to the increased use of natural gas vehicles, with a focus on those utilizing non-fossil based, renewable natural gas. Technical barriers include demonstrations of advanced natural gas vehicles and fueling infrastructure, medium and heavy duty on-road natural gas engine research and development, energy efficiency improvements, emission reduction technologies, natural gas storage, fueling infrastructure optimization, and renewable natural gas production research and development.

Account: Fossil Energy & Carbon Management, Supercritical, Transformational Electric Power Initiative

2024 Request: \$10,000,000

Report Language: The Committee provides \$10,000,000 for supercritical CO2 research and development activities. The Committee supports efforts, consistent with the original scope of work, to complete the necessary design and construction of the 10-MW pilot and to conduct the necessary testing for the facility to include high-temperature, recuperated cycle testing. The Committee supports competitively awarded research and development activities, coordinated with the Offices of Nuclear Energy and Energy Efficiency and Renewable Energy, to advance the maturity of supercritical CO2 cycles, leveraging the substantial prior investment in the STEP facility to the extent possible by using the STEP facility for component endurance testing, cascaded cycles, hermetic waste heat recovery cycles, and alternate/extended component testing.

Thank you for your consideration of these important research and development initiatives. Your continued support for these R&D investments will result in new jobs across the country, enhanced energy independence, and ensure that our resources – such as our resilient infrastructure – are used more safely, efficiently, and in a more environmentally sustainable manner as we continue to address the critical challenge of reducing greenhouse gas emissions in the atmosphere.

Sincerely,



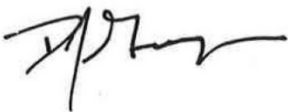
Paula A. Gant, PhD
President and CEO
GTI Energy



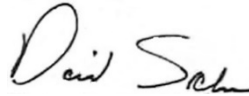
American Gas Association
Karen A. Harbert
President & CEO



Dave Schryver
President & CEO
American Public
Gas Association



Daniel Gage
President
NGV America



Schryver
President & CEO
APGA Research
Foundation



Taylor Dacus
President
American Pipeline
Contractors Association



Joel van Rensburg
President Alternative Fuels
ANGI Energy



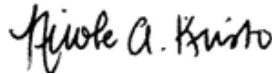
Mark Nibaur
General Manager
Austin Utilities



Linn Evans
President & CEO
Black Hills Energy



Lisa Jacobson
President
The Business Council for
Sustainable Energy



Nicole A. Kivisto
President & CEO
Cascade Natural Gas
Corporation; Great Plains
Natural Gas Company;
Intermountain Gas
Company; Montana-
Dakota Utilities Company



Armando Ramirez
Sales & Marketing
Manager
Catalina Cylinders



James F. Moriarty
Executive Vice President,
General Counsel,
Corporate Secretary and
Chief Policy and Risk
Officer
Chesapeake Utilities
Corporation



Barry Carr
Coordinator
Clean Communities of
CNY-A US Department of
Energy Clean Cities
Coalition



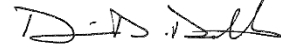
Andrew J. Littlefair
President and CEO
Clean Energy Fuels



Brian Langille
Interim Director
Clearwater Gas System



Johannes Escudero
CEO
The Coalition for
Renewable Natural Gas



Dennis Dobbs
Vice President, Gas
Engineering & Supply
Consumers Energy



Curt Reitz
President
Contract Transport Services,
LLC



Tom Kairys
VP – Sales & Marketing
CP Industries



Puneet Jhavar
General Manager –
Global Spark Ignited
Business
Cummins, Inc.



Robert Gordon
Director, Fleet Management
DeKalb County (GA)
Government



Rob Darden
Executive Vice President
Distributors Contractors
Association



Brett William Brown
Manager Gas Operations
Dominion Energy



Joi Harris
President & COO
DTE Gas



Alexander J Weintraub
SVP & President, Natural
Gas Business
Duke Energy



Ashley Duckman
Executive Director
Energy Solutions Center



William J. Akley
President, Gas Business
Eversource Energy



William Winters
Owner & Managing
Partner
Freedom CNG



Kyle J Flint
Director of Operations
Green Energy Solutions



Ashley Remillard
SVP Legal and Government
Affairs
Hexagon Agility



Wes Kelley
President & CEO
Huntsville Utilities



Susan Griffiths
Director of Regulatory
Affairs
Hyliion



Ronald P. Cuenod, Jr
President & CEO
Indumar Products



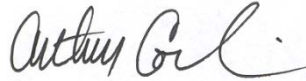
John Williams
Senior Vice President,
Engineering and
Construction
Knoxville Utilities Board



Todd Hardigree
Director
Lawrenceville Natural
Gas;
Vice Chairman
Board of Directors for
The Municipal Gas
Authority of Georgia



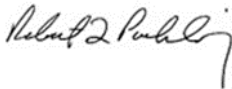
Alonzo Weaver
Senior VP and COO
Memphis Light, Gas, and
Water



Arthur Corbin
President & Chief
Executive Officer
Municipal Gas Authority
of Georgia



Rudy Wynter
President, National Grid
New York



Robert L. Poehling
Executive Director/CEO
National Public Gas Agency



Patrick Migliaccio
SVP and Chief Operating
Officer
New Jersey Natural Gas



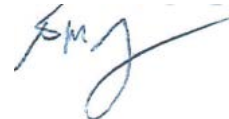
Lloyd Yates
President and CEO
NiSource Inc.



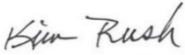
Heath Reed
General Manager
Northwest Alabama Gas
District

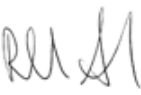



Dan Kirschner
Executive Director
Northwest Gas Association

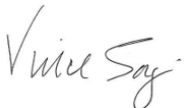



Steve Ghormley
Vice President,
Operations and Business
Development
Novus Wood Group



Kim Rush
Senior Vice President,
Operations, and Chief
Marketing Officer
NW Natural



Ron Snedic
President
Operations Technology
Development



Seth A. Shapiro
President & Chief Executive
Officer
Philadelphia Gas Works



Vince Sorgi
President and CEO
PPL (on behalf of
LG&E and Rhode Island
Energy)



Neil Navin
Chief Clean Fuels Officer
Southern California Gas


Rita L. Hansen
CEO
Onboard Dynamics, Inc.

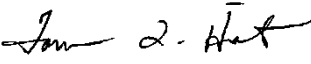

Yvonne McIntyre
VP, Federal Affairs
Pacific Gas and Electric
Company

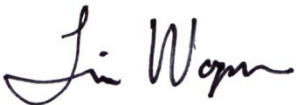

David M. Fink
President
Plastics Pipe Institute



Josh Jacobs
Vice President
Clean Energy Strategy
and Planning
Puget Sound Energy

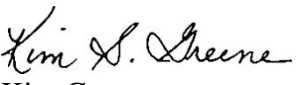

J. Gregory Henderson
President & CEO
Southeast Gas


Jason Ketchum
Vice President of
Commercial Activities,
Regulatory, Government
Affairs and Community
Relations
ONE Gas


Torrence L. Hinton
President
Peoples Gas & North
Shore Gas

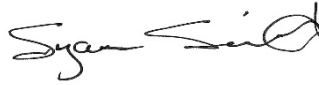

Tim Wagner
President and CEO
Power and
Communications
Contractors Association


Perry McGuire
Vice President and
General Counsel
Rinnai


Kim S. Greene
Chairman, President
& CEO
Southern Company Gas



Joseph C. Varela
Director
Southwest Gas Corporation



Suzanne Sitherwood
President and CEO
Spire Inc.



Stephen Mayfield
AGM - Gas Operations
City of Tallahassee



Susan M. Shifflett
President
Texas Natural Clean Fuels
Alliance



Tom Sewell
President
Tulsa Gas Technologies



Hans G. Bell
President
UGI Utilities



Lynn Lyon
Director of Sustainable
Transportation
U.S. Gain, A Division of
U.S. Venture Inc.



Ron Snedic
President
Utilization Technology
Development



Donald M. Jenkins
President
Washington Gas



David Johnson
CEO
Westport Fuel Systems



Billy Holt
E-Commerce & Business
Development
Wood Fuel