



**HEARING OF THE HOUSE NATURAL RESOURCES COMMITTEE
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The offshore energy sector is a proven leader in solving energy challenges and delivering diverse sources of energy to the global economy. Through the National Ocean Industries Association, the entire supply chain of companies works together collaboratively to improve our performance in all aspects of operations including, among other things, emission reductions and workforce development. At LLOG Exploration Company, we remain committed to operating in the Gulf of Mexico, which already produces some of the least carbon-intensive oil and natural gas production in the world, while leading innovation and investment in technologies and practices to continue to reduce an already small environmental footprint. With our management team averaging 34 years of experience in the industry, we have access to an unparalleled knowledge base that allows companies like ours to continue to help deliver affordable, reliable energy for the American consumer.

For the past 47 years, LLOG has developed some of the best offshore drilling prospects available to the industry with an uncompromising commitment to safe practices and ethical standards. Headquartered in Covington, LA, we are one of the largest privately-owned exploration and production companies in the United States and currently employ nearly 150 hardworking Americans and utilize the services of many contractors as well. Thanks to advances in technology and decades of operational experience, we are achieving a remarkable 68% success rate in deepwater exploration, as well as a 94% success rate in deepwater development, having drilled over 300 wells to-date, with an additional 30 deepwater prospects in the portfolio. LLOG is a proud company headquartered in Louisiana with our employee base in the Gulf Coast. We live and recreate in our development areas and we take seriously our responsibility to maintain the health of the Gulf of Mexico and our coastline. We also take seriously our obligation and duty to deliver energy resources for its country and community for our national security and economic advancement of our regional and national economy.

LLOG drilled its first deepwater Gulf of Mexico well in 2002. In the last twenty years we have grown our capability into ultradeep waters and deeper reservoirs, while maintaining our focus on safety and environmental responsibility for years. Our first major development was our Who Dat facility which was the first deepwater facility owned by a private company in the Gulf of Mexico. We have proceeded to build additional facilities and to commit to subsea tiebacks. One subsea tieback that LLOG has recently completed was Taggart field which involved a novel approach of tying a subsea discovery directly into a third-party operator's subsea infrastructure, resulting in almost a 50% reduction in carbon usage and months of timeline improvements.

Our largest current project is the Salamanca development, which is a host facility that will support the Leon and Castile Developments. The facility will exist in over 6,000' of water over 300 miles south of New Orleans. When installed next year, it will produce around 50,000 barrels

of oil per day. A unique aspect of Salamanca is that the floating production unit is the first refurbishment of a facility that was in production and is being brought back into commerce as a producing asset. This operation will result in a reduction of approximately 70% of emissions in the development of the asset versus a new build facility. The other aspect is that the major construction for this project has been undertaken in shipyards and construction yards in Texas and Louisiana versus all major construction for new build facilities occurring in Asia.

For the foreseeable future, the offshore sector will play an integral role in shaping an energy system that promotes the provision of affordable and reliable energy while simultaneously continuing to reduce environmental impacts, including emissions. Importantly, for the coming decades, oil and natural gas will remain a vital energy source for Americans and our allies around the globe, even as we simultaneously add low carbon sources into the mix and find ways to lower the environmental impact of our already world-leading hydrocarbon production operations.

Despite LLOG and our peers across the offshore oil and natural gas industry achieving great success in delivering increasingly lower-carbon intensity energy in increasing quantities to Americans and our global partners, our nation's offshore oil and natural gas market is facing a cliff. With the smallest five-year leasing plan in history now in effect, and companies confined to new development in primarily only two of the United States' 26 offshore planning areas, we are at a crossroads for the long-term success of our industry.

For this reason, it is critical that the United States not only take seriously the role offshore resources play in the security and wellbeing of the nation, but that Congress and the Executive Branch take reasonable steps to ensure the nation's offshore resources are accounted for, developed responsibly, and available to consumers. This is key not only for the wellbeing of our own citizens, but the wellbeing and security of people around the world that rely on American oil and natural gas.

Without complete understanding of our untapped offshore energy resources, and without a comprehensive leasing policy and permitting law reforms that would allow American companies to bring these resources to market, the United States risks operating at a competitive disadvantage.

ENERGY REALITIES

Energy lifts society and standards of living. A system of reliable, abundant, and affordable energy is essential for meeting basic societal needs, including healthy living conditions, health care, education, and mobility, economic or otherwise. Oil and natural gas fill the fuel tanks of passenger vehicles and airplanes. They are transformed into the essential building blocks of smartphones, clothing, and medical equipment. They are in so many products we use every day that they underpin the conveniences of modern life.

Natural gas is recognized as a key energy source for providing electricity, heating, cooling, and clean cooking. More than 750 million people around the globe do not have access to electricity, which leaves entire communities at a severe and fundamental disadvantage. According to the

World Health Organization (WHO), “Access to energy is critical when it comes to the functionality of health-care facilities and the quality, accessibility and reliability of health services delivered. Electricity is necessary for the operation of critically needed medical devices such as vaccine refrigeration, surgical emergency, laboratory and diagnostic equipment, as well as for the operation of basic amenities such as lighting, cooling, ventilation and communications.”¹

Globally, 2.6 billion people do not have the means for clean cooking and must use solid fuels such as wood, crop wastes, charcoal, and dung in open fires and inefficient stoves. The WHO attributes 3.8 million premature deaths each year to indoor air pollution caused by the fumes and soot generated by inefficient and dirty cooking.

The impacts of energy insecurity are not only experienced abroad; 44 percent of low-income American household’s experience energy insecurity, spending 10 percent to 20 percent of their income on energy expenses². Energy insecurity has adverse consequences on both physical and mental health. Millions of Americans are faced with the “heat or eat” dilemma, regularly having to choose between paying utility bills and paying for food³.

Energy production in the U.S. Gulf of Mexico demonstrates that it is possible to develop offshore resources while adhering to the highest safety and environmental standards. A multitude of companies involved in offshore energy development are working collaboratively to shrink an already small carbon footprint. From electrifying operations to deploying innovative solutions that reduce the size, weight, and part count of offshore infrastructure – thus increasing safety and decreasing emissions – the U.S. Gulf of Mexico hosts a high-tech revolution.

Currently, global oil consumption is approximately 100 million barrels per day. Various scenarios forecast global oil consumption volumes through 2050 and beyond, and nearly all of them predict substantial oil production will be necessary through 2050. The facts, data, and our experience make clear that we should focus on the U.S. offshore region, and the Gulf of Mexico in particular, for securing those vital resources.

Oil produced from the U.S. Gulf of Mexico has a carbon intensity one-half that of other producing regions.⁴ The technologies used in deepwater production – which represents 92 percent of the oil produced in the U.S. Gulf of Mexico – place this region among the lowest carbon intensity oil-producing regions in the world⁵. Policies that restrict domestic offshore development require imports to make up the shortfall, and that supplemental production comes from higher-emitting operations in other countries. Foreign providers generally employ less environmentally conscientious production methods, which when combined with the added emissions from transporting oil over great distances by tanker, *increases* the amount of carbon released into the atmosphere rather than *decreasing* it.

¹ <https://www.who.int/activities/accelerating-access-to-electricity-in-health-care-facilities>

² <http://large.stanford.edu/courses/2020/ph240/radzyminski2/>

³ S. Jessel, S. Sawyer, and D. Hernández, "Energy, Poverty, and Health in Climate Change: A Comprehensive Review of an Emerging Literature," *Front. Public Health* 7, 357 (2019).

⁴ Motiwala, and Ismail, “Statistical Study of Carbon Intensities in the GOM and PB,” ChemRxiv, April 13, 2020.

⁵ <https://www.woodmac.com/news/the-challenge-of-negative-emissions/>

Emissions reduction is a global challenge. As analysts at Wood Mackenzie explain, “Removing or handicapping a low emitter hurts the collective global average.”⁶ This is a debilitating solution with devastating consequences. The better choice is to institute government policies that promote cleaner and safer domestic production, less reliance on higher-emitting foreign suppliers like Russia and China, and the preservation of hundreds of thousands of American jobs.

On the other hand, restricting U.S. offshore energy development could eventually lead to Americans of every walk of life having to contend with the issues Europe has been experiencing as a result of disrupted supply from Russia, including potential industrial curtailment and families having to make difficult choices between heat and food. Our energy reality makes it clear that U.S. energy policy should support U.S. offshore energy production of all types, including oil and natural gas, as well as wind. Government policies play a substantial role in the ability to develop energy in the U.S., whether onshore or offshore, and whether the energy source is oil and natural gas, wind, solar, hydrogen, or other sources. Obstructive government policies inevitably lead to adverse consequences for our energy security, national security, economic security, and decarbonization efforts.

OFFSHORE ENERGY DEVELOPMENT ENHANCES ENERGY SECURITY

Oil and Natural Gas Will Be Crucial Energy Sources for Decades to Come

Oil and natural gas touch every part of our daily lives. Fundamentally, “Everything that is fabricated, grown, operated or moved is made possible by hydrocarbons.”⁷ The U.S. Department of Energy states:

Oil and natural gas play an essential role in powering America’s vibrant economy and fueling a remarkable quality of life in the United States. Together, oil and natural gas provide more than two-thirds of the energy Americans consume daily, and we will continue to rely on them in the future. In addition to meeting our energy needs, oil and natural gas are integral to our standard of living in ways that are often not apparent. Several key advances in technology enabled a dramatic increase in domestic oil and natural gas production over the past 20 years. This increased production provides energy security and economic benefits to the entire country, and ongoing technology advances will help us to enjoy those benefits into the future.

Oil and natural gas are used in many ways that are familiar to consumers. Petroleum products power transportation, providing fuel for cars, trucks, marine vessels, locomotives, and airplanes. Natural gas generates more than one-third of the electricity needed for dependable heating, air conditioning, lighting, industrial production, refrigeration, and other essential services, and tens of millions of Americans rely on oil and natural gas to heat their homes directly and on clean burning natural gas to cook their food. But petroleum products do so much more than fuel our cars and power our homes and businesses.

⁶ <https://www.woodmac.com/news/opinion/could-restricting-oil-production-in-the-us-gulf-of-mexico-lead-to-carbon-leakage/>

⁷ Mark Mills, Wall Street Journal, January 8, 2019

While perhaps less recognized, oil and natural gas also play critical roles in supplying essential products and materials, increasing agricultural productivity, and supporting the expansion of new energy sources.

Oil, natural gas, and natural gas liquids are building blocks for a range of modern materials used to produce life-changing prosthetics, energy-efficient homes, safer cars that go farther on a gallon of gasoline, and hundreds more consumer products that Americans use every day. Plastics and chemicals derived from oil and natural gas make our food safer, our clothing more comfortable, our homes easier to care for, and our daily lives more convenient.

Natural gas is also a key ingredient for chemical fertilizers, helping increase crop production and yield per acre planted, and powering many important operations on the farm like crop drying.⁸

According to the United Nations, access to affordable, reliable, and sustainable energy is critical to achieving many international development goals, specifically, the eradication of poverty through continued improvements in education, health, and access to water.⁹ Oil and natural gas play a central role in eliminating poverty and raising the standard of living for millions by serving as a key form of abundant and affordable energy.

OFFSHORE ENERGY DEVELOPMENT IMPROVES ENERGY AFFORDABILITY

The cost of energy is fundamentally driven by supply and demand, and recently, global markets have been disrupted by a supply crunch in both the oil and natural gas markets. The energy paradigm has shifted over the past decade, with the United States rising to a position of energy power and emerging as the leading producer of both oil and natural gas in the world.

Vice Chairman of IHS Markit Daniel Yergin explains how things have changed:

According to the old script, United States oil production was too marginal to affect world oil prices. But the gap today between demand and available supply on the world market is narrow. The additional oil Saudi Arabia is putting into the market will help replace Iranian exports as they are increasingly squeezed out of the market by sanctions.... But if America's increase . . . [in oil production] . . . had not occurred, then the world oil market would be even tighter. We would be looking at much higher prices – and voters would be even angrier.¹⁰

Mr. Yergin made this point in 2012 at the outset of the shale revolution, but the significance of U.S. production for global energy markets is as important as ever today. In fact, Mr. Yergin

⁸ *U.S. OIL AND NATURAL GAS: Providing Energy Security and Supporting Our Quality of Life*, U.S. Department of Energy, September 2020, p. 4.

⁹ <https://unstats.un.org/sdgs/report/2016/goal-07/>

¹⁰ Daniel Yergin, "America's New Energy Reality," *The New York Times*, June 9, 2012

reiterated this very point in February this year in the aptly title op-ed in the *Wall Street Journal*, “America Takes Pole Position on Oil and Gas.”

Analysts recognize that the downturn in the oil and natural gas industry from 2014-2020, combined with ill-conceived policies and investment approaches, led to significant underinvestment in oil and natural gas exploration and infrastructure. According to Simon Flower, Chairman, Chief Analyst at Wood Mackenzie and author of a weekly column called The Edge, “Underinvestment in oil supply will lead to a tight oil market later this decade. It’s a narrative that’s gained increasing traction as capital expenditure on upstream oil and gas has shrunk. Spend in 2021 is half the peak of 2014 after slumping to new depths in [2021’s] crisis.”¹¹

Mr. Flowers poses the question, “How much *new* oil supply does the world need?” His answer is, “A lot - we reckon about 20 million b/d from 2022 to 2030.” According to Flowers, “This is the ‘supply gap’, the difference between our estimate of demand in 2030 and the volumes we forecast existing fields already onstream or under development can deliver.”¹² If his numbers are correct, a huge amount of new oil is needed to close the expected gap between the supply and demand and help bring stability and affordability to oil and petroleum product prices.

Rystad Energy echoes the concern about the supply gap and the huge amount of investment needed to close it. According to Rystad, more exploration for oil and gas is needed to supply the volumes needed worldwide by 2050.¹³ In fact, it will take massive investment just to keep pace with growing demand. Rystad suggests capital expenditures of at least \$3 trillion will be required to replenish declining production from currently producing assets around the world to meet expected global demand in 2050.

We are fortunate in the United States that our Gulf of Mexico region is up to the task of delivering the oil and gas the economy needs. Production numbers from the U.S. Gulf of Mexico place it in the company of some of the largest oil producing countries. If the Gulf of Mexico were its own country, it would be one of the top eleven oil producing countries:



¹¹ <https://www.woodmac.com/news/the-edge-is-the-world-sleepwalking-into-an-oil-supply-crunch/>

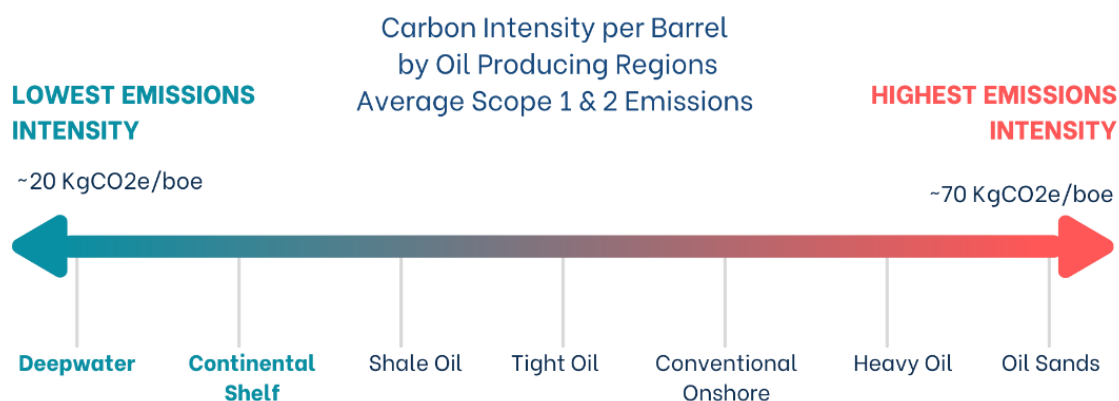
¹² <https://www.woodmac.com/news/the-edge-is-the-world-sleepwalking-into-an-oil-supply-crunch/>

¹³ <https://www.offshore-mag.com/drilling-completion/article/14188804/exploration-overdrive-urgently-required-rystad-energy-report-claims>

Source: U.S. Energy Information Administration.

OFFSHORE LEASING PROVIDES AMONG THE LOWEST CARBON BARRELS IN THE WORLD

The U.S. offshore operates under one of the strongest regulatory and oversight regimes in the world, which means production here in the United States is more environmentally friendly than operations in many producing regions in the world. The carbon intensity of the Gulf of Mexico is 50 percent of that of other producing regions¹⁴. Part of the reason is that U.S. Gulf of Mexico developments deliver high volumes of oil and gas with a far smaller physical footprint. In 2019, 18 offshore facilities (with a combined surface area equal to about nine city blocks) produced 75 percent of offshore production¹⁵.



Source: Wood Mackenzie

Management practices and related regulations for venting and flaring of methane in the offshore have helped to dramatically reduce the practice in the Gulf of Mexico. The U.S. Gulf of Mexico accounted for 15% of U.S. oil production in 2019, yet EIA data shows venting and flaring emissions from offshore oil and gas operations accounted for a mere 2.6% percent of nationwide energy production venting and flaring emissions in 2019.¹⁶ EPA data also shows methane emissions from offshore oil and gas production accounted for less than one percent of total nationwide methane emissions in 2019.¹⁷

In short, the U.S. and the world depend upon reliable supplies of oil and natural gas for a high quality of life and to lift people out of poverty, and U.S. offshore production should be the basin of choice for producing that energy because of demonstrably lower GHG and environmental impacts for an energy source we will continue to need for years to come.

¹⁴ Motiwala, and Ismail, “Statistical Study of Carbon Intensities in the GOM and PB,” ChemRxiv, April 13, 2020.

¹⁵ Director Scott Angelle, BSEE Director, BSEE Presentation to the Deepwater Technical Symposium, November 13, 2020.

¹⁶ https://www.eia.gov/dnav/ng/ng_prod_sum_a_EPG0_VGV_mmcf_a.htm

¹⁷ [Draft 2021 Greenhouse Gas Inventory](#)

In fact, a 2016 report at the end of the Obama Administration—issued under then-Secretary Sally Jewell—stated, “U.S. GHG emissions would be higher if BOEM were to have no lease sales.... Emissions from substitutions are higher due to exploration, development, production, and transportation of oil from international sources being more carbon intensive.”¹⁸

Recent research from multiple sources continues to validate the low carbon benefits of U.S. Gulf of Mexico oil leasing and production¹⁹:

Wood Mackenzie:

According to Wood Mackenzie, reducing oil production from the U.S. Gulf of Mexico would increase the average emissions rate for global oil production:

Using our recently updated Emissions Benchmarking Tool, which profiles emissions for more than 2,800 oil and gas assets around the world, [researchers] Oberstoetter and Usoro were able to compare the carbon intensity of the principal sources of crude used in the US. Numerous factors drive the differences in intensity: emissions in Venezuela, Colombia and Canada are driven by the more energy-intensive processes needed to produce the heavier crude qualities, while in Iraq flaring is the big problem. The overall picture is clear, however: the deep water of the Gulf of Mexico is one of the lowest-carbon sources of oil used in the US, with only Saudi Arabia coming in lower. In the light of that, Oberstoetter and Usoro argue, restrictions on US production in the Gulf could end up having a counterproductive impact on global emissions. “Removing or handicapping a low emitter hurts the collective global average.”²⁰

McKinsey:

In the report titled “How the Gulf of Mexico can further the energy transition,” McKinsey describes four key factors that give the deepwater Gulf of Mexico a “low carbon advantage”:

First, in contrast to other regions where flaring natural gas without a market is more commonplace, most of the natural gas produced in the Gulf of Mexico is sold to local

¹⁸ <https://www.boem.gov/sites/default/files/oil-and-gas-energy-program/Leasing/Five-Year-Program/2017-2022/OCS-Report-BOEM-2016-065---OCS-Oil-and-Natural-Gas---Potential-Lifecycle-GHG-Emissions-and-Social-Cost-of-Carbon.pdf>. Although court decisions have questioned components of the methodology the Obama Administration used in this report, the fundamental proposition remains – a “no leasing” scenario must consider the impacts of fuel-switching, which, as shown by the outside experts discussed below, will lead to higher GHG emissions because of the unusually low GOM carbon intensity.

¹⁹ A recent study by researchers at the University of Arizona and elsewhere suggests that methane emissions from offshore shallow water facilities has been underestimated. However, 92 percent of offshore oil production is from deepwater, which is consistently recognized for low methane and low overall carbon emissions. The recent study analyzed just 8 percent of total shallow water facilities, with many of the facilities outside of federal jurisdiction in state waters, using a relatively new technique. Many NOIA members with facilities in federal shallow waters have focused on methane management, deploying technologies such as leak detection or electrifying activities to the extent feasible. In any event, the offshore industry will continue to review relevant data, including this recent research, as part of the ongoing process of learning and improvement.

²⁰ <https://www.woodmac.com/news/the-challenge-of-negative-emissions/>

markets, which results in minimal routine flaring and, consequently, less GHG emissions. Second, the facilities have efficient, modern designs that minimize methane leakage. Third, wells and production facilities have a high throughput, minimizing the number of energy-intensive processes required to bring on new supply, such as drilling. And fourth, operators have made active decarbonization efforts to stay in line with environmental sustainability goals and in compliance with regulations.²¹

McKinsey estimates production from the U.S. Gulf of Mexico could decrease by about 800,000 barrels per day by 2040 without additional projects beyond those that have already been sanctioned. In that situation, McKinsey expects lost production would be made up by substitutions from other parts of the world without much oil demand destruction. The country would be able to import sufficient oil, but it would come from higher-emitting basins, resulting in an increase in greenhouse gas emissions globally:

This supply reduction would have to be offset by alternative sources to meet global demand, which could hinder net-zero goals significantly. Because many other oil producing regions globally have total unit costs similar to those in the Gulf of Mexico, global oil price increases or substitution with other energy sources wouldn't be expected, and global demand for oil would remain unchanged. Instead, the reduced Gulf supply would be offset by production increases from other sources, such as other deepwater basins, shale, and OPEC. Based on the higher emissions per barrel of this new supply, global emissions would increase by 50 million to 100 million metric tons of CO₂e through 2040.²²

Offshore energy is a true story of accomplishing more with less – creating more energy with less environmental impact. Offshore production platforms are incredible edifices of continuously evolving technology that allow enormous amounts of energy to be produced through a relatively small footprint. Incredibly, 18 deepwater facilities, which equate to about the size of only nine city blocks, produce about the same amount of oil as the entire state of North Dakota.²³

PERMITTING

From a regulatory standpoint, federal government policy should serve to eliminate potential roadblocks to investment in energy projects, including offshore wind. As the Administration reviews and reworks regulations, such as the National Environmental Policy Act (NEPA), it will be important to ensure changes to bedrock environmental policy are done in a way that enhances environmental protection and energy development. Environmental stewardship and energy and economic progress are not mutually exclusive; NOIA members have consistently been leaders in both arenas. Promulgating rules that balance the need for energy development with effective environmental stewardship will provide the certainty massive investments require.

²¹ Brown, Di Fiori, Smith, and Yanosek, “Deepwater Gulf of Mexico’s role during the energy transition,” McKinsey, September 2022, at pages 3-4.

²² Brown, Di Fiori, Smith, and Yanosek, “Deepwater Gulf of Mexico’s role during the energy transition,” McKinsey, September 2022, at page 6.

²³ Director Scott Angelle, BSEE Director, BSEE Presentation to the Deepwater Technical Symposium, November 13, 2020.

Timely, transparent and rational NEPA processes are of significant importance to project developers, investors, employees, and contractors whose jobs and livelihoods are tied to projects subject to NEPA reviews. Preconstruction delays for projects typically add costs and delay the delivery of the benefits that projects can bring. Delays and associated cost increases may result in projects being canceled altogether. In today's globalized economy, where there is a high level of competition for the world's investment, increasing uncertainty and delays in the federal permitting process can serve to drive investments elsewhere. The United States needs these investments to remain competitive and to support long term economic growth, as well as to elevate the quality of life for communities that most acutely need these investments.

Lack of clarity in the NEPA process does not only impact the time it takes a federal agency to act, but also increases litigation risk. Because of its broad applicability across sectors and agencies, NEPA is often at the center of project opponents' litigation strategy in seeking to delay and block both federal and nonfederal activities. In response to the threat of litigation, agencies prepare NEPA analyses in defense of potential litigation, attempting to anticipate every possible objection that could be raised in court, however insignificant and however detached from the intent of NEPA—with mixed ultimate success. The result is that over time NEPA has become less about informing agencies and the public of environmental impacts of significance, and more about agencies attempting to avoid lengthy and costly litigation. Several NEPA-related legal challenges have already been filed over the approvals of the construction and operation plans for the early-mover offshore wind projects. Congress should continue to consider permitting legislation to streamline the process and reduce the investment and litigation uncertainty.

CONCLUSION

Our national energy needs require continued supplies of oil and natural gas. Continued U.S. offshore oil and natural gas development provides vast benefits and a sensible pathway for energy security for the next few decades. At the same time, the U.S. offshore sector is contributing to the development of low and zero carbon energy options, including offshore wind, hydrogen and carbon removal technologies.

Thank you for the opportunity to testify on behalf of the offshore energy industry. LLOG and the members of NOIA stand ready to work with policy makers to advance policies to ensure that Americans can rely upon an affordable and reliable energy system built upon strong pillars of energy, economic, and environmental security.