TESTIMONY OF ERIK MILITO
PRESIDENT, NATIONAL OCEAN INDUSTRIES ASSOCIATION
HEARING OF THE HOUSE NATURAL RESOURCES COMMITTEE
SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES
"ASSESSING DOMESTIC OFFSHORE ENERGY RESERVES & ENSURING U.S. ENERGY DOMINANCE"
MARCH 20, 2024

For the past 50-plus years, the National Ocean Industries Association ("NOIA") has represented the interests of all segments of the offshore energy industry. Today this includes offshore oil and gas, offshore wind, offshore minerals, and offshore carbon sequestration companies. Our membership includes energy project leaseholders and developers and the entire supply chain of companies that make up an innovative energy system contributing to the safe and responsible exploration, development, and production of energy for the American people. The assessment of domestic energy reserves is highly consequential for our nation's future energy security and should inform our public policy moving forward. NOIA appreciates the efforts of the committee for convening this hearing and promoting data-driven, impactful energy policy.

The offshore energy sector is a proven leader in solving energy challenges and delivering diverse sources of energy to the global economy. For the foreseeable future, the offshore industry will play an integral role in shaping an energy system that promotes the provision of affordable and reliable energy while continuing to reduce environmental impacts, including emissions. Importantly, for the coming decades, oil and gas supplies will remain a vital energy source for Americans and our allies around the globe, while we simultaneously integrate and add lower carbon sources into the mix. The U.S. Gulf of Mexico is firmly established as a highly prospective region with abundant reserves of domestic oil and gas that will fuel our economy for decades to come.

The Bureau of Ocean Energy Management (BOEM) has recognized a promising future for oil development in the Gulf of Mexico. According to its *2021 Assessment of Technically and Economically Recoverable Oil and Natural Gas Resources of the Gulf of Mexico Outer Continental Shelf*[1], the region contains estimated undiscovered technically recoverable resources in the range of 23.31 billion barrels of oil to 36.27 billion barrels of oil. According to experts at Energy and Industrial Advisory Partners, "A key requirement for continued Gulf of Mexico oil and natural gas production is continued lease sales, which enable operators to explore new acreage for previously undiscovered resources, develop new projects, and underpin existing and planned projects by allowing operators to backfill production into facilities with declining production."[2]

THE U.S. OFFSHORE REGION WILL CONTINUE TO FUEL OUR ECONOMY

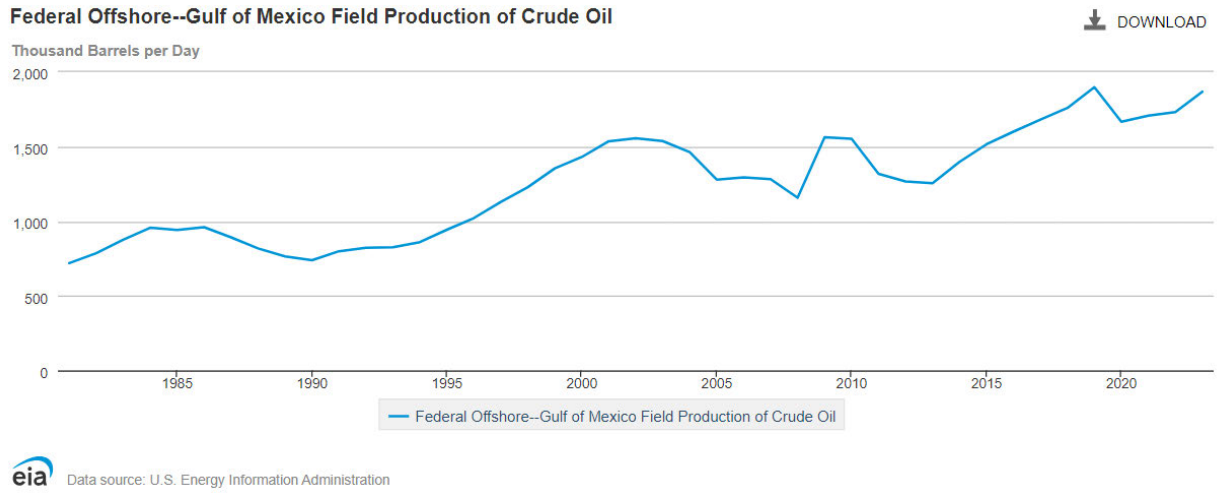
As with many other forms of energy development, oil and gas production is contingent upon having acreage that can be explored and produced. Federal leasing is requisite to securing

[1] https://www.boem.gov/sites/default/files/documents/regions/gulf-mexico-ocs-region/resource-evaluation/2021%20Gulf%20of%20Mexico%20Oil%20and%20Gas%20Resource%20Assessment%20%28BOEM%202021-082%29.pdf
[2] https://www.noia.org/noia-one-pagers-infographics/#flipbook-df_223664/1/, at page 3.

the acreage to develop and produce supplies of oil and gas for the country. Continued lease sales at regular intervals will enable declining production to be replenished and production levels to be increased when there are spikes in demand. Simply put, the more acreage that is available, the greater the potential for well-managed energy production.

According to Rystad Energy, global oil exploration activities must ramp up to meet global demand through 2050. More than $3 trillion in capital expenditure is estimated to be needed to add the undeveloped and undiscovered resources necessary for the global market.[3] Rystad analysts expect deepwater areas to play a prominent role in building essential energy supplies. According to Rystad Senior Upstream Analyst Palzor Shenga, "Upstream players may have to more than double their conventional exploration efforts in order to meet global oil demand through 2050."

The U.S. has been producing oil offshore in the federal Gulf of Mexico waters since the 1940s and production from the Gulf has been steadily increasing over the past 30 years. In fact, this region has been producing more than one million barrels of oil per day since 1997 and hit its highest level of production on record of 2.044 million barrels per day in August of 2019, just before the onset of the pandemic:



Although production dropped during the pandemic in response to the related global economic downturn, the U.S. Gulf of Mexico has recovered and averaged 1.868 million barrels per day in 2023. We know from experience that technology advancements will continue to enable the discovery and development of ever-increasing volumes, resulting in a continuous upward trend over time in the estimated recoverable resources in the Gulf of Mexico. One of the earliest federal resources assessments, if not the earliest, was conducted by the U.S. Geological Service in 1975, which estimated a mean of 6.25 billion barrels of undiscovered crude oil in the Gulf of Mexico.[4] The study reflected the geologic realities as best it could and focused only on water depths of less than 200 meters. Foreshadowing how dramatically innovation and technology can revolutionize an industry, the first deepwater oil field in the world was

[3] https://www.ogj.com/general-interest/article/14188745/rystad-exploration-must-be-accelerated-to-meet-world-oil-demand

[4] https://www.boem.gov/sites/default/files/documents/about-boem/Historic%20Assessments_2021_fixed.pdf

discovered in the Gulf of Mexico the very same year.[5] Federal assessments throughout the 1980s and first half of the 1990s were expanded to include water depths up to 2,500 meters. In 1996, Interior's Minerals Management Service (MMS) did not include any water depth limit in their assessment. Yet, by this point deepwater production was eclipsing shallow water production in the Gulf of Mexico.[6]

Today, cumulative historical production from the Gulf of Mexico is well over 21 billion barrels of oil, and, as noted earlier, the federal government estimates that there are still 23 to 36 billion barrels of oil remaining[7]. The offshore oil and gas industry is an exploratory, prospective business and there is often a gap between what we think is there based upon government estimates and what is actually there based on industry's exploration efforts, especially when considering the deployment of modern science and exploration techniques. Companies must have the opportunity to continue to lease acreage and conduct exploration activities through regular, formalized lease sales to close the gap. Exploration activities from seismic exploration to exploratory drilling add the necessary scientific data that is fundamental for more accurate estimates and the ultimate production of energy. These activities only occur once a company has secured a lease.

Oil is a global commodity, and investment in oil production projects occurs on a global scale. Eliminating or reducing lease sales in the U.S. federal offshore leasing program only serves to shift that investment away from the U.S. Gulf of Mexico to other regions, both offshore and onshore, throughout the world. Companies will naturally invest where there is more certainty, and the U.S. government can increase certainty by continually updating resource estimates and providing acreage for leasing. It is critical that the U.S. does not cede ground in offshore energy production to other regions and that it recognizes that it is in the best interests of Americans to encourage and attract investment to U.S. offshore production opportunities. The numerous adverse consequences of eliminating or scaling back offshore oil and gas leasing negatively impact all Americans, most particularly those struggling to cope with increased energy costs, which continued to be threatened by geopolitical uncertainty. Offshore leasing is requisite to replenishing and building new supplies of oil and gas for Americans. It is only the first step in the process, but, without it, our nation will be left without the energy that is vital for our everyday lives, including transportation, manufacturing, agriculture, groceries, education, and healthcare. Energy affordability is fundamentally and directly tied to the supply and demand of energy sources, and energy supplies are assured through continued leasing and permitting.

ENERGY REALITIES

Energy lifts society. A system of reliable, abundant, and affordable energy is essential for meeting basic societal needs, including healthy living conditions, health care, education, and

[5] https://www.offshore-mag.com/pipelines/article/14075106/cognac-pipeline-stretched-the-boundary-of-deepwater

[6] https://www.boem.gov/sites/default/files/documents/regions/gulf-mexico-ocs-region/US%20OCS%20GOMR%20Oil%20and%20Gas%20Production%20Forecast%202022-2031.pdf#:~:text=The%20plot%20is%20separated%20into,roughly%2090%25%20of%20total%20production.

[7] https://www.boem.gov/sites/default/files/documents/oil-gas-energy/BOEM%202020-028.pdf#:~:text=Cumulative%20Production%20from%20all%20fields,recoverable%20from%20459%20active%20fields.

mobility, economic or otherwise. Oil, gas, and petroleum products 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."[8]

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 tragic impacts of energy insecurity are not only experienced abroad; 44 percent of low-income American households experience energy insecurity, spending 10 percent to 20 percent of their income on energy expenses.[9] 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 food.[10]

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 at least 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.

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. Oil produced from the U.S. Gulf of Mexico has a carbon intensity one-half that of other producing regions.[11] 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 world[12]. Policies that restrict domestic offshore development require imports to make up the shortfall and supplemental production may come from higher-emitting operations in

[8] https://www.who.int/activities/accelerating-access-to-electricy-in-health-care-facilities
[9] http://large.stanford.edu/courses/2020/ph240/radzyminski2/
[10] 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).
[11] Motiwala, and Ismail, "Statistical Study of Carbon Intensities in the GOM and PB," ChemRxiv, April 13, 2020.
[12] https://www.woodmac.com/news/the-challenge-of-negative-emissions/

other countries. Foreign providers may employ less environmentally conscientious production methods, which when combined with the added emissions from transporting oil over great distances by tanker, can increase the amount of carbon released into the atmosphere rather than decreasing it.

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 U.S. 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 CO_2e through 2040.[13]

In May 2023, NOIA released a report on emissions from global oil production by ICF International, the *GHG Emission Intensity of Crude Oil and Condensate Production*.[14] According to the report, U.S. oil production, and in particular, production from the U.S. Gulf of Mexico, has lower greenhouse gas emissions intensity than much of the rest of the world. According to ICF, increasing U.S. production (onshore and offshore) to a level that offsets foreign crude or condensate would result in a 23% reduction in the average international carbon intensity of those displaced oil production volumes. This translates to a removal of 5.7 CO2e kg/bbl from the global average outside of the U.S. and Canada of 24.4 CO2e kg/bbl. ICF estimates that increasing U.S. Gulf of Mexico production to offset foreign crude or condensate would lead to a significant reduction in the average carbon intensity of the substituted oil volumes. Specifically, they estimate a 46% decrease, which translates to a removal of 11.3 CO2e kg/bbl from the global average.

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.[15]

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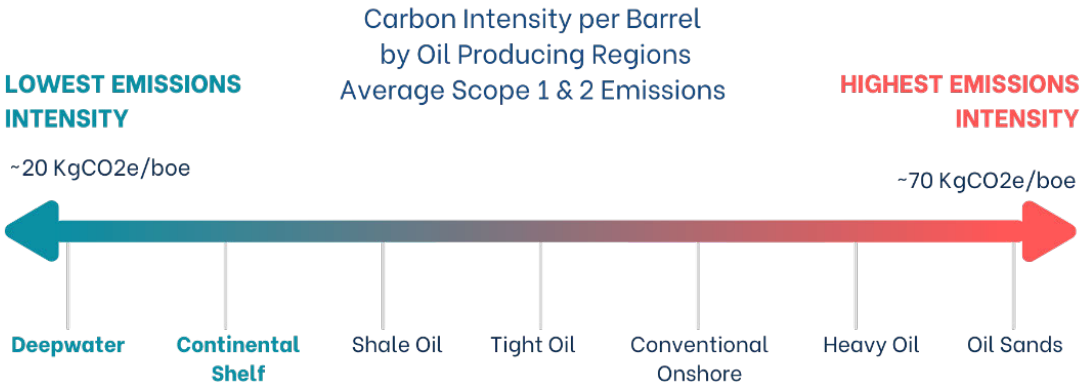
[13] Brown, Di Fiori, Smith, and Yanosek, "Deepwater Gulf of Mexico's role during the energy transition," McKinsey, September 2022, at page 6.

[14] https://www.noia.org/wp-content/uploads/2023/05/NOIA-Study-GHG-Emission-Intensity-of-Crude-Oil-and-Condensate-Production.pdf?utm_source=Mailchimp&utm_medium=email&utm_campaign=ICF+study+emissions+

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

Emissions reduction is a global challenge. As analysts at Wood Mackenzie explain, "Removing or handicapping a low emitter hurts the collective global average."[16] Removing a proven, stable supplier such as the U.S. Gulf of Mexico would be a poor choice with devasting 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.



Efforts to restrict U.S. 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. energy production of all types, including offshore oil and gas and 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 gas, wind, hydrogen, or another resource. Obstructive government policies inevitably lead to adverse consequences for our energy security, national security, economic security, and decarbonization efforts.

OFFSHORE ENERGY DEVELOPMENT ENHANCES QUALITY OF LIFE

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."[17] 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

[16] https://www.woodmac.com/news/opinion/could-restricting-oil-production-in-the-us-gulf-of-mexico-lead-to-carbon-leakage/
[17] Mark Mills, Wall Street Journal, January 8, 2019

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.

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.[18]

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.[19] 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, over the past decade, global markets have been impacted by supply disruptions 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 (now S&P Global) Daniel Yergin explains how things have changed:

[18] *U.S. OIL AND NATURAL GAS: Providing Energy Security and Supporting Our Quality of Life*, U.S. Department of Energy, September 2020, p. 4.
[19] https://unstats.un.org/sdgs/report/2016/goal-07/

> 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.[20]

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 reiterated this very point in February 2022 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, in 2021, "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."[21] 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."[22] 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.

Saudi Aramco CEO Amin H. Nasser identified the crux of the energy crisis in his remarks during the Schlumberger Digital Forum, on September 20, 2022:

> Unfortunately, the response so far betrays a deep misunderstanding of how we got here in the first place, and therefore little hope of ending the crisis anytime soon. So this morning I would like to focus on the real causes as they shine a bright light on a much more credible way forward.
>
> When historians reflect on this crisis, they will see that the warning signs in global energy policies were flashing red for almost a decade. Many of us have been insisting for years that if investments in oil and gas continued to fall, global supply growth would lag behind demand, impacting markets, the global economy, and people's lives.
>
> In fact, oil and gas investments crashed by more than 50% between 2014 and last year, from $700 billion to a little over $300 billion. The increases this year are too little, too late, too short-term.

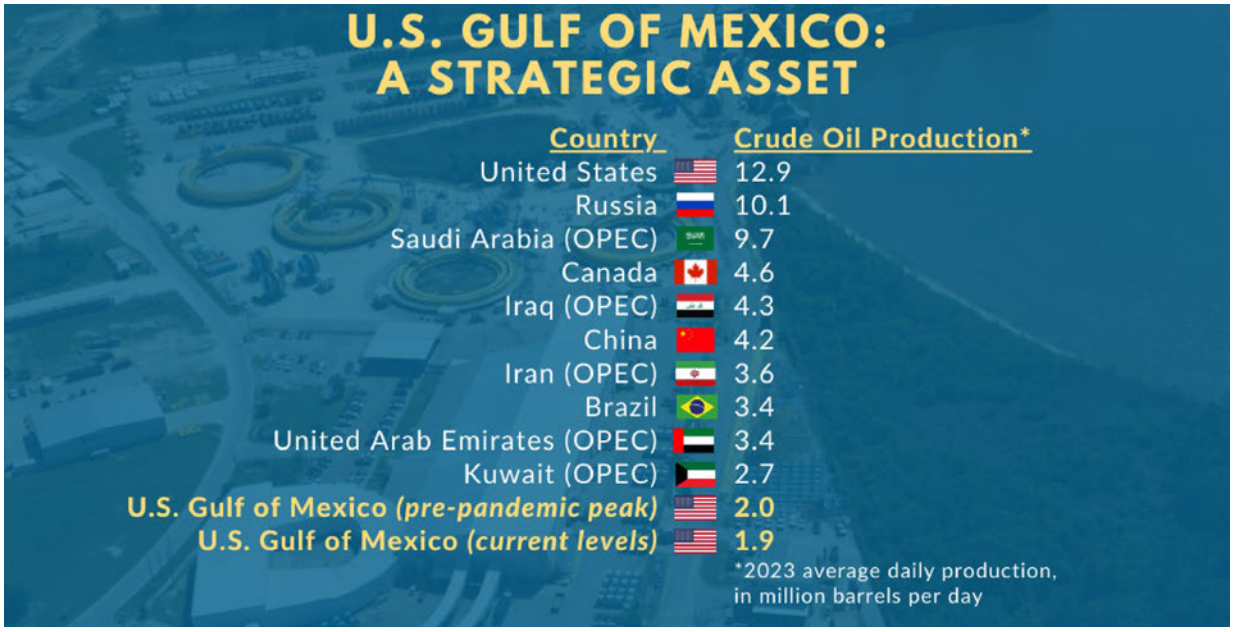
[20] Daniel Yergin, "America's New Energy Reality," *The New York Times*, June 9, 2012
[21] https://www.woodmac.com/news/the-edge/is-the-world-sleepwalking-into-an-oil-supply-crunch/
[22] https://www.woodmac.com/news/the-edge/is-the-world-sleepwalking-into-an-oil-supply-crunch/

Meanwhile, the energy transition plan has been undermined by unrealistic scenarios and flawed assumptions because they have been mistakenly perceived as facts. For example, one scenario led many to assume that major oil use sectors would switch to alternatives almost overnight, and therefore oil demand would never return to pre-Covid levels.

In reality, once the global economy started to emerge from lockdowns, oil demand came surging back, and so did gas.[23]

Mr. Nasser's remarks about the challenges ahead are similarly profound, "Oil inventories are low, and effective global spare capacity is now about one and a half percent of global demand. Equally concerning is that oil fields around the world are declining on average at about 6% each year, and more than 20% in some older fields last year. At these levels, simply keeping production steady needs a lot of capital in its own right, while increasing capacity requires a lot more."[24]

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 among 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 in the world (source EIA):



[23] https://www.aramco.com/en/news-media/speeches/2022/remarks-by-amin-h-nasser-at-schlumberger-digital-forum#
[24] https://www.aramco.com/en/news-media/speeches/2022/remarks-by-amin-h-nasser-at-schlumberger-digital-forum#

OFFSHORE CARBON CAPTURE AND STORAGE

U.S leadership in Carbon Capture and Storage (CCS) will help ensure the availability of abundant, reliable, and affordable domestic energy, while continuously driving down emissions. According to the International Energy Agency:

> *Carbon capture, utilisation and storage (CCUS) technologies offer an important opportunity to achieve deep carbon dioxide (CO_2) emissions reductions in key industrial processes and in the use of fossil fuels in the power sector. CCUS can also enable new clean energy pathways, including low-carbon hydrogen production, while providing a foundation for many carbon dioxide removal (CDR) technologies.*[25]

As it relates specifically to the offshore, the National Petroleum Council concluded that "One of the largest opportunities for saline formation storage in the United States can be found in federal waters, particularly in the Gulf of Mexico." *Meeting the Dual Challenge*, p. 27. The U.S. Gulf of Mexico offshore region provides tremendous advantages for an emerging U.S. CCS sector. The Gulf of Mexico is characterized by vast geologic prospects for CO2 storage, extensive and established energy infrastructure along the Gulf Coast and throughout the outer continental shelf, a proximity to industrial centers for capturing emissions, and an assessable engineering and energy knowledge base and workforce, along with associated RD&D capabilities. The U.S. Gulf of Mexico could very well soon be the global leader in CCS. Early projections show that 50 million tons of CO2 annually could be stored beneath the Gulf of Mexico by 2030, more than all the CCS currently operating globally. The Gulf's storage capacity could double by 2040.

However, the build-out of the U.S. offshore carbon storage industry will depend upon certainty and predictability in U.S. laws and regulations. The Infrastructure Investment and Jobs Act of 2021 (P.L. 117-58) included Sec. 40307, explicitly authorizing the Department of the Interior to grant leases, easements, or rights-of-way on the outer continental shelf for the purposes of long-term storage of CO2. It also mandated the Secretary to issue regulations to that effect within one year of enactment, or by November 2022. Our industry stands ready to invest in federal offshore carbon sequestration projects but it cannot be done without a regulatory framework. The regulations are more than a year past the Congressional-mandated deadline and have not even been proposed yet. This unnecessary, protracted timeline for the finalization of the rules and for the initiation of leasing and project development substantially impedes U.S. Gulf Coast investment and efforts to decarbonize through offshore CCS.

CONCLUSION

Our national energy needs require continued supplies of oil and natural gas and part of this national imperative is understanding the resources with which our nation is blessed, particularly in the U.S. offshore region. Continued U.S. offshore oil and gas development provides vast benefits and a sensible pathway for energy security for the next few decades. NOIA and its members stand ready to work with policymakers to advance policies to ensure that Americans can rely upon an affordable and reliable energy system built upon strong pillars of energy, economic, national, and environmental security.

[25] https://www.iea.org/reports/the-role-of-co2-storage