Erik G. Milito
President

NATIONAL OCEAN INDUSTRIES ASSOCIATION

1120 G Street, NW
Suite 900
Washington, DC 20005
Tel 202-347-6900
Fax 202-347-8650
www.noia.org

Attachment A to Testimony of Erik Milito, House Natural Resources Committee, February 8, 2023 (attachments to this document available on request)

October 5, 2022

Director Amanda Lefton
c/o Ms. Kelly Hammerle
Chief, National OCS Oil and Gas Leasing Program
Development and Coordination Branch
Office of Strategic Resources
Bureau of Ocean Energy Management (VAM-LD)
45600 Sterling, Virginia 20166-9216

Subject: BOEM-2022-0031- Comments on Notice of Availability of the 2023-2028 National Outer Continental Shelf Leasing Proposed Program and Draft Programmatic Environmental Impact Statement

The Interests of the National Ocean Industries Association

The National Ocean Industries Association (NOIA) submits these comments in support of a robust outer continental shelf (OCS) leasing program for 2023-2028, including ten lease sales in the Gulf of Mexico and one lease sale in Cook Inlet, Alaska. For the past 50 years, NOIA has represented the interests of all segments of the offshore energy industry, including offshore oil and gas, offshore wind, offshore minerals, and offshore carbon sequestration. Our membership includes energy project leaseholders and developers and the entire supply chain of companies that make up an innovative ecosystem contributing to the safe and responsible exploration, development, and production of U.S. oil and natural gas supplies. NOIA and its members have a direct interest in the finalization of the leasing program and associated draft programmatic environmental impact statement.

The Offshore Gulf of Mexico is a Strategic National Energy Asset and an Energy Innovation Hub

The Gulf of Mexico is globally recognized as a premier energy hub, bringing together the companies that produce foundational energy sources such as oil and gas, while leading innovation and investment in energy sources and technologies that will drive decarbonization efforts well into the future. In essence, the oil and gas industry is often in the vanguard of the development and deployment of zero carbon, low carbon, and carbon removal technologies. The offshore energy sector has unparalleled expertise and experience deploying and scaling

technologies at levels necessary to achieve decarbonization objectives. Companies throughout the offshore oil and gas supply chain continue to lead the way in innovating low emission solutions that include carbon capture and storage, hydrogen, geothermal, and offshore wind.

For the foreseeable future, the offshore oil and gas 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 the environmental and emissions footprint of development and distribution. Importantly, for the coming decades, oil and gas supplies will remain a vital energy source for Americans and our allies around the globe[1].

Recognizing Our 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 mobility, economic or otherwise.

Oil and 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."[2]

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[3].

[1] https://www.eia.gov/outlooks/aeo/
[2] https://www.who.int/activities/accelerating-access-to-electricy-in-health-care-facilities
[3] http://large.stanford.edu/courses/2020/ph240/radzyminski2/

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[4].

All forms of energy, including oil and gas, wind, solar, nuclear, geothermal, and emerging forms of energy such as hydrogen, can play a role in raising the standard of living and lifting communities out of poverty. The offshore energy sector is particularly well poised to deliver reliable, abundant, and affordable energy of many types for society. Traditionally recognized as a key producer of oil and gas, the offshore sector has emerged as a leader in offshore wind, is spearheading the deployment of carbon capture and storage technologies, and is playing a vital role in developing innovative hydrogen technologies.

Operations in the U.S. Gulf of Mexico demonstrate 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 question is, "Where should that oil come from?"

The answer is, from the cleanest and safest sources.

Oil produced from the U.S. Gulf of Mexico has a carbon intensity one-half that of other producing regions.[5] 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[6]. 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.

Emissions reduction is a global challenge. As analysts at Wood Mackenzie explain, "Removing or handicapping a low emitter hurts the collective global average."[7] This is a debilitating solution with devasting consequences.

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[4] 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).

[5] Motiwala, and Ismail, "Statistical Study of Carbon Intensities in the GOM and PB," ChemRxiv, April 13, 2020.

[6] https://www.woodmac.com/news/the-challenge-of-negative-emissions/

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

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 offshore leasing could eventually lead to Americans of every walk of life having to contend with the issues Europe is 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 offshore oil and gas leasing.

Summary of Comments

To meet the national energy needs of our country it is essential that a robust offshore leasing program for 2023-2028 is maintained along with the ten proposed lease sales in the Gulf of Mexico and the one lease sale in Cook Inlet, Alaska, with no further reductions in leasing opportunities or acreage.

The Outer Continental Shelf Lands Act is clear in its mandate that the Department of the Interior maintain a leasing program that includes multiple lease sales. The final program should include all of eleven lease sales included in the Proposed Program, including the ten Gulf of Mexico Lease Sales and one Cook Inlet lease sale. The suggestion that Interior could include zero lease sales in the program is in direct contravention to statute. We discuss below the statutory mandates.

More work needs to be done for offshore wind development as well.

Interior should also finalize a robust leasing program to ensure offshore wind lease sales continue unabated, consistent with the provisions of the recently enacted Inflation Reduction Act, which requires offshore oil and gas lease sales of at least 60 million acres within a year of issuing an offshore wind lease. NOIA supports the Administration's goal of 30 gigawatts of offshore wind power by 2030. NOIA further supports the continued efforts of the Administration to implement a robust schedule of offshore wind sales through the U.S. OCS and to finalize decisions to greenlight specific projects through the approval of construction and operations plans. Continued progress in offshore wind energy development is contingent upon finalizing an offshore oil and gas leasing program that includes at least two Gulf of Mexico lease sales each year.

Offshore oil and gas leasing delivers extensive benefits for America and Americans. Restricting or eliminating U.S. offshore oil and gas leasing will jeopardize, reduce, and eventually eliminate the vital, benefits that flow from offshore oil and gas leasing.

Benefits of U.S Offshore Oil and Gas Leasing

Offshore Oil and Gas Leasing:

- *Enhances energy security*

- *Improves energy affordability*
- *Stimulates investment in American energy production*
- *Supports high-paying jobs*
- *Provides among the lowest carbon barrels in the world, with a commitment to safety and environmental performance*
- *Is characterized by innovation and advanced technologies*
- *Creates and supports flourishing marine ecosystems*
- *Adheres to a strong system of safety and environmental protection*
- *Generates tremendous value for taxpayers, funding the Land & Water Conservation Fund, the Outdoor Recreation Legacy Partnership Program, and coastal resiliency and restoration*
- *Includes companies in the offshore oil and gas supply chain that play a key role in investing in, scaling, and deploying low carbon solutions.*
- *Increases our national security*

The Intent and Mandates of the Outer Continental Shelf Lands Act

Energy companies have tapped oil and gas resources offshore the United States since the turn of the 20th century, with the first federal offshore oil and gas lease sale taking place in 1954. The primary federal law that governs oil and gas development in federal waters (which begin at least three miles offshore, depending on the state) is the Outer Continental Shelf Lands Act (OCSLA). This law does not simply *allow* for offshore oil and gas development. The law states that its main purpose is "expeditious and orderly development [of resources], subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other national needs."[8] The statute uses mandatory terms such as "shall" and "will" in directing continuing leasing for exploration, development, and production of oil and gas.

OCSLA creates a framework by which federal waters and the resources thereunder are regularly leased via Section 18 of the law and stipulates the requirement for the Secretary of Interior to prepare and maintain a five-year leasing plan which includes a schedule of lease sales. The leasing program explicitly must balance and consider "economic, social, and environmental values."[9]

Arguments in favor of curtailing offshore leasing twist and contort the wording in the statute in an exercise of interpretive gymnastics that fails to make a convincing case. The specific and repeated use of the word "shall" by Congress makes clear there is a mandate for the inclusion of multiple lease sales in the final proposed program.

Most importantly, Section 18 opens by stating "The Secretary, pursuant to the procedures set forth in subsections (c) and (d) of this section, *shall* prepare and periodically revise, and

[8] 43 U.S.C. Sec. 1332(3)
[9] 43 U.S.C. Sec. 1344 a(1)

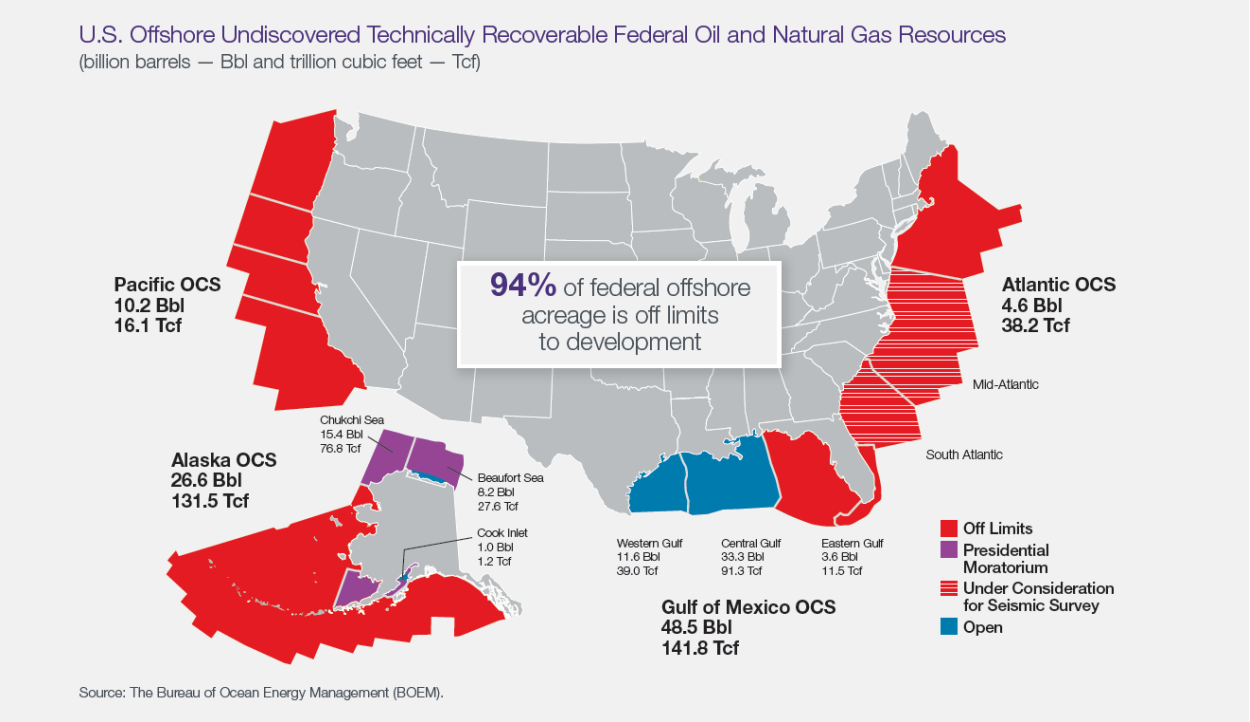
maintain an oil and gas leasing program to implement the policies of this Act." Section 18 further states that the "leasing program *shall* consist of a schedule of proposed lease *sales*."

The choice of words goes beyond instructing the Secretary to simply prepare a leasing program. It directs that a leasing program it must be maintained. Interior must uphold a leasing program that implements the policies of the Act, and this includes expeditious and orderly development.

It is evident that the U.S. government has failed in its obligations under the OCSLA to promote the expeditious development of the oil and natural gas resources of the OCS and to balance the economic benefits and the environmental risks. There are 1,712.26 million acres on the OCS[10][11]. Less than eleven million acres are currently under lease[12], which amounts to about 0.64 percent of the OCS. Some 99.6 percent[13] of offshore oil and gas production happens in areas termed either the Central or Western Gulf of Mexico, which comprises about 95 million acres, about 5.55 percent of the OCS (of which approximately 2.7 million acres are on producing leases).

Areas of the Central and Western Gulf of Mexico have been leased and producing for decades. Though this segment of the Gulf of Mexico represents a small percentage of total OCS acreage, these prolific and productive leases contribute greatly to the national interest. Regardless, making less than 6 percent of the OCS available for leasing fails to meet the standards set by the OCSLA. The red areas in the map below, which cover more than 94 percent of offshore acreage, show the acreage that has been kept off limits to oil and gas development as a result of federal policy decisions.

[10] https://www.boem.gov/sites/default/files/oil-and-gas-energy-program/Mapping-and-Data/PAstats_01-01-2018.pdf
[11] https://www.boem.gov/sites/default/files/documents/oil-gas-energy/leasing/Presidential-Withdrawal-Map-and-GOMESA-Moratorium.pdf
[12] https://www.boem.gov/sites/default/files/documents/regions/pacific-ocs-region/oil-gas/Lease%20stats%209-1-22.pdf
[13] https://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbblpd_m.htm



Access is one issue. Timing of the lease sales is another.

OCSLA states "The Secretary *shall* select the timing and location of leasing, to the maximum extent practicable, so as to obtain a proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact." The Congressional intent is clear that Interior must fulfill its obligations in a balanced way so that environmental and coastal considerations are incorporated into the decision-making process. Once again, Congress used the term "shall" and made it mandatory for Interior to specifically select areas for oil and gas leasing "to the maximum extent practicable," notwithstanding any consideration of environmental factors.

In stating, "Leasing *shall* be conducted to assure receipt of fair market value for the lands leased and the rights conveyed by the Federal Government" Congress' intent that leases must be scheduled and carried out could not be made any clearer. Fair market value can only be received if lease sales occur.

This explicit language leaves no room for ambiguity. The plain wording of the statute conveys a straightforward mandate that stipulates creation of a program that comprises multiple lease sales.

In summary, leasing of America's offshore has been embedded in statue for decades, and energy has been produced off our coasts for more than 100 years. Continued leasing is

mandatory. A lack of lease sales, and a lack of robust lease sales, is contrary to specific language as well as the spirit and intent of the OCSLA.

The Inflation Reduction Act

On August 16, 2022, the Inflation Reduction Act (IRA) was signed into law, setting in motion a host of programs that promote research, development, deployment, and investment in a wide portfolio of energy sources, many of which will help drive decarbonization efforts. NOIA actively supported the IRA provisions that encourage offshore wind, offshore oil and gas, and offshore carbon capture and sequestration projects.

NOIA strongly supports public policy actions to promote investment in offshore wind resource development in federal waters. Offshore wind projects are vital to the economic growth of this country and will play a critical role in achieving America's climate goals for the 21st century and beyond. According to a recent report co-sponsored by NOIA, offshore wind constitutes a $120 billion[14] market for the country, and the Gulf of Mexico will play an important part.

Offshore wind is truly a generational economic and energy opportunity, and one the Biden administration is seizing. Providing new offshore wind opportunities, establishing permitting milestones, and boosting critical investments into the supply chain, ports, and workers will provide a foundation for exceptional offshore wind growth. Interior has announced a schedule of lease sales for the foreseeable future that could help put the nation on the pathway toward the Administration's stated objective to deliver 30 GW of offshore wind capacity by 2030. Establishing a regular and predictable offshore wind lease auction schedule and ensuring that the Bureau of Ocean Energy Management (BOEM) has the resources it needs to progress the Administration's ambitious goals will pave the way for a vibrant U.S. offshore wind industry.

The IRA, however, specifically conditions the Administration's ability to issue future wind leases on the agency holding oil and gas lease sales. The IRA includes a requirement for Interior to hold oil and gas lease sales for 60,000,000 acres in the year prior to issuing an offshore wind lease. In accordance with this new requirement, it is imperative that Interior finalize an oil and gas leasing program with at least two offshore Gulf of Mexico areawide lease sales to continue with regular and predictable offshore wind lease sales. Doing so will ensure that 60,000,000 acres of oil and gas leases are offered with sufficient frequency so offshore wind leases can continue to be issued without disruption.

Finalizing a Robust Leasing Program is Required to Secure the Extensive Benefits that Flow to Americans and the Nation from Offshore Oil and Natural Gas Leasing

OFFSHORE LEASING ENHANCES ENERGY SECURITY

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

[14] *See* American Clean Power Association, et al., *Federal Revenue and Economic Impacts from BOEM Offshore Wind Leasing* (December 2021), https://cleanpower.org/resources/federal-revenue-and-economic-impacts-from-boem-offshore-wind-leasing/.

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."[15] 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.
>
> 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.[16]

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.[17] Oil and

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[15] Mark Mills, Wall Street Journal, January 8, 2019

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

[17] https://unstats.un.org/sdgs/report/2016/goal-07/

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.

High energy density makes oil an invaluable resource to global society. According to the Brookings Institute:

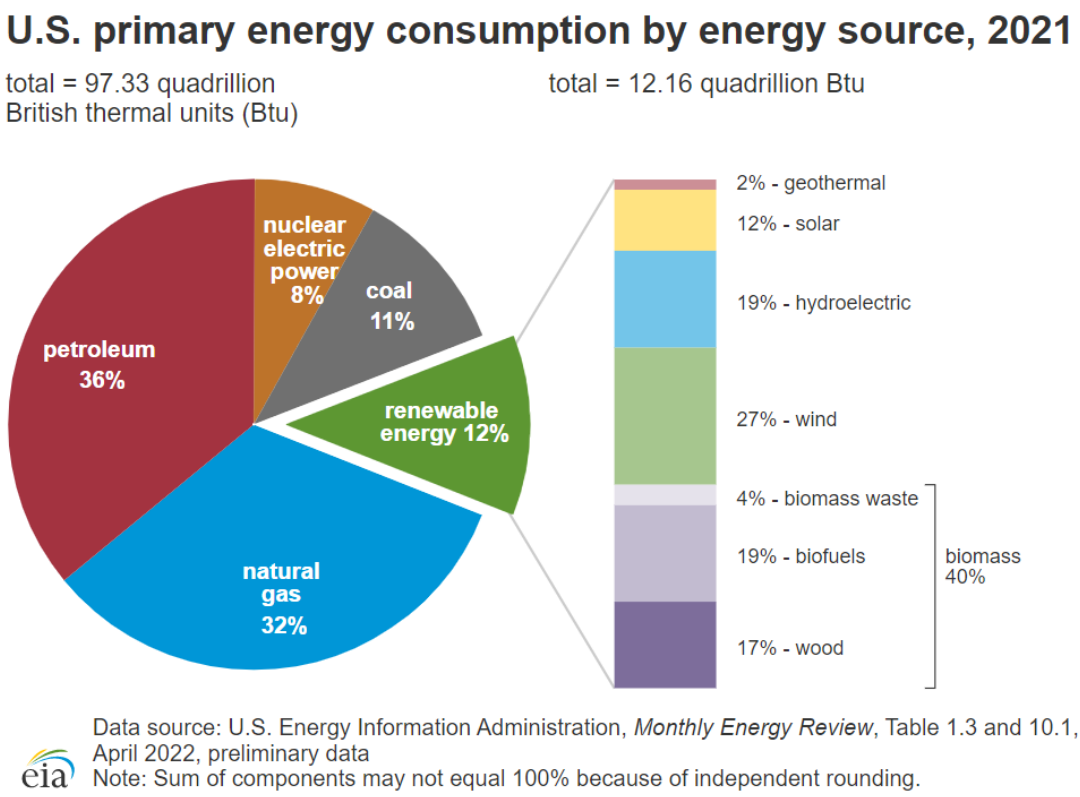
> Oil resources are not as extensively distributed worldwide as coal, but oil has crucial advantages. Fuels produced from oil are nearly ideal for transportation. They are energy-dense, averaging twice the energy content of coal, by weight. But more importantly, they are liquid rather than solid, allowing the development of the internal combustion engine that drives transportation today….
>
> The energy density of fossil fuels is particularly important in the transportation sector. A vehicle needs to carry its fuel around as it travels, so the weight and volume of that fuel are key. Electric vehicles are a much-touted solution for replacing oil, but they are not perfect for all uses. Pound for pound, gasoline or diesel fuel contain about 40 times as much energy as a state-of-the-art battery. On the other hand, electric motors are much more efficient than internal combustion engines and electric vehicles are simpler mechanically, with many fewer moving parts. These advantages make up for some of the battery's weight penalty, but an electric vehicle will still be heavier than a similar vehicle running on fossil fuel. For vehicles that carry light loads and can refuel often, like passenger cars, this penalty isn't a big deal. But for aviation, maritime shipping, or long-haul trucking, where the vehicle must carry heavy loads for long distances without refueling, the difference in energy density between fossil fuels and batteries is a huge challenge, and electric vehicles just don't meet the need….
>
> Industrial processes that need very high heat — such as the production of steel, cement, and glass — pose another challenge. Steel blast furnaces operate at about 1,100° C, and cement kilns operate at about 1,400° C. These very high temperatures are hard to achieve without burning a fuel and are thus difficult to power with electricity.[18]

The nascent offshore wind sector will be part of the energy transformation. Through research, development, and demonstration projects, technology advances will enable wind and other renewable energy sources to eventually provide pathways for overcoming some of these challenges. While that inevitable progress is being made in the coming decades, oil and natural gas will continue to account for a majority of our energy portfolio

Oil and Natural Gas Account for a Large Share of U.S. and Global Energy

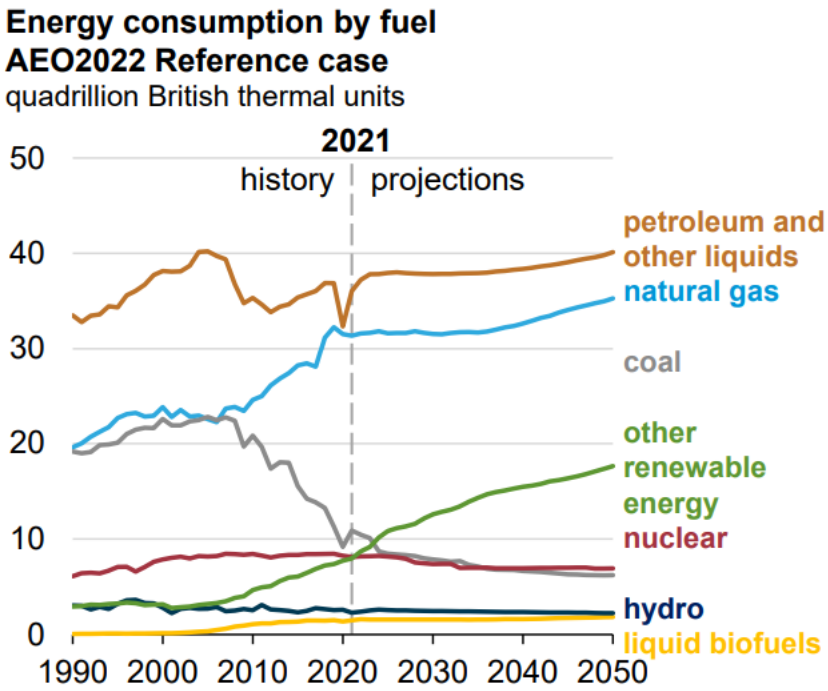
According to the U.S. Energy Information Administration (EIA), oil and natural gas accounted for 68 percent of total U.S. energy consumption in 2021:

[18] https://www.brookings.edu/essay/why-are-fossil-fuels-so-hard-to-quit/



In its *Annual Energy Outlook 2022*, the EIA predicts, "U.S. energy consumption will increase over the next 30 years as population and economic growth outpace gains in energy efficiency."[19] Though the organization projects that renewable energy will be the fastest-growing source of energy through 2050 and will make up more of the energy mix, it contends that petroleum and liquid fuels will remain the most-consumed source of energy. In fact, liquid fuels are expected to represent the largest fuel source in the global energy system.

[19] https://www.eia.gov/pressroom/releases/press496.php

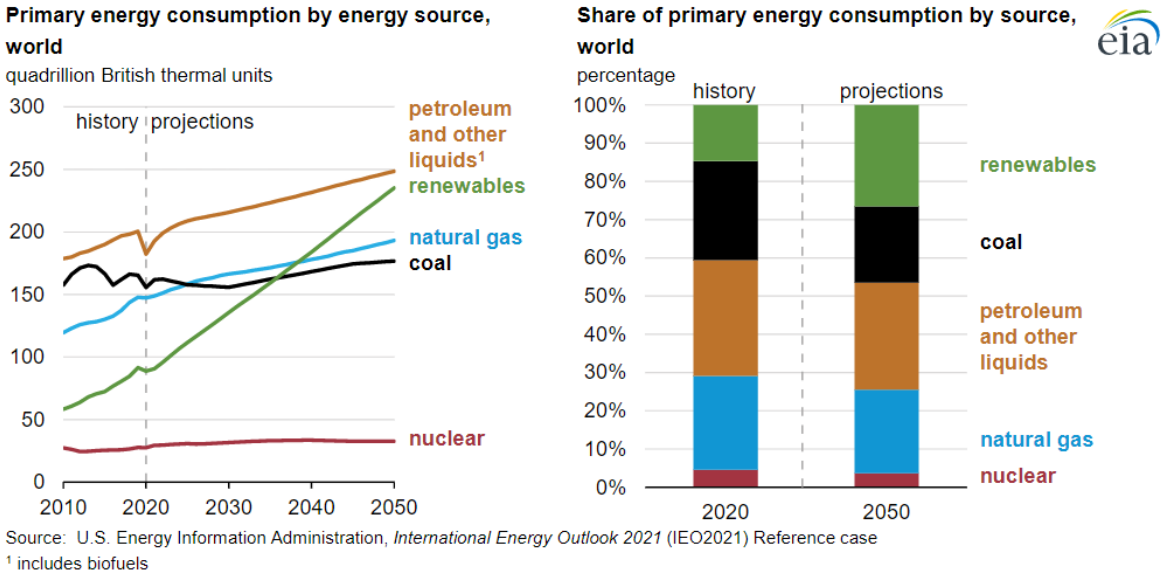


Source:
https://www.eia.gov/outlooks/aeo/pdf/AEO2022_ChartLibrary_OverviewandDrivers.pdf

In its most recent *International Energy Outlook,* released October 6, 2021, EIA projects renewable energy consumption will more than double between 2020 and 2050 (reference case). During the same period, natural gas consumption is expected to grow by 31 percent, but the percentage of natural gas used by the global energy system will decline slightly.

As for oil, the forecast for liquid fuel consumption is continuing growth at a near constant pace through 2050: "As travel increases as the effects of the COVID-19 pandemic lessen, the majority of passenger and freight vehicles continue to be fueled by liquid fuel-consuming internal combustion engines. Industrial use of petroleum and other liquids, particularly for chemical feedstocks, also increases through the projection period."[20]

[20] https://www.eia.gov/outlooks/ieo/consumption/sub-topic-01.php



Source: U.S. Energy Information Administration, *International Energy Outlook 2021* (IEO2021) Reference case

[1] includes biofuels

Renewables are gaining ground as the world pursues an energy transition away from oil and natural gas, but hydrocarbons continue to play a central role in the U.S. and global energy systems and will continue to do so for several decades.

Our national energy needs clearly support a commitment to continued federal offshore leasing and the scheduling of at least the eleven sales included in the Proposed Program. Federal offshore oil and gas leasing is a key component of a national energy strategy that will ensure Americans can continue to have access to fundamental domestic energy that is produced safely, sustainably, and responsibly.

Offshore Oil and Gas: The Myth of Idle Leases

The myth of idle leases has become a red herring in the public debate over federal oil and gas leasing. Assertions about the "stockpiling" of leases represents a fundamental misunderstanding of how the oil and gas industry operates under the offshore leasing program.

Oil and gas companies often must bid on leases around which there is significant uncertainty. In other words, companies must cast a wide net when acquiring lease blocks, then winnow through prospective blocks by means of additional exploration and study – a process that can take years – before they can identify a commercially viable discovery.

Legally competing at auction for rights to explore and develop offshore federal lands and paying a bonus to acquire a federal offshore oil and gas mineral lease can be a risky proposition. There is no guarantee that oil and gas resources are present in the subsurface. Even with incredible advances in technology, there is an element of energy production that is still speculative. Due to this risk, some leases are studied for quite some time to determine if energy reserves exist or if they exist in sufficient quantities to be produced economically and

in compliance with regulatory standards. In other cases, sites being considered for exploratory wells are going through a thorough and lengthy regulatory approval process.

Given that a production well in the Gulf of Mexico can cost hundreds of millions of dollars to develop, decision-makers must be judicious in deciding to develop a lease. This means some leases expire and are returned to the federal government for *future* consideration when technology improves enough to make resources accessible.

As the non-partisan federal Congressional Research Service concluded during the Obama Administration:

> Many leases expire before exploration or production occurs…Generally, a number of concerns arise in the oil and gas leasing process that delay or prevent oil and gas development from taking place, or might account for the large number of leases held in non-producing status. There could be a lack of drilling rigs or other equipment availability, and financing and/or skilled labor shortages. Legal challenges might delay or prevent development. There are typically also many leases in the development cycle (e.g., conducting environmental reviews, permitting, or exploring) but not producing commercial quantities.[21]

Oil and natural gas companies have every incentive to produce as much oil and gas as possible as rapidly as they can. The decision about which blocks to develop is predicated on a number of considerations.

- Finding oil and gas is a prospective business, and not all leases contain commercially viable amounts of hydrocarbons. In fact, most leased areas do not contain oil and gas in commercial quantities. Companies need to invest in multiple lease blocks and methodically assess them to identify and develop the blocks where commercially viable finds are most likely.
- A lease is only a rental agreement. When a company buys a lease, it's tying up significant (and finite) capital in the search for oil and natural gas. There is a significant financial incentive for a company to recover its initial investment by developing oil and gas resources in a timely manner, in other words, to initiate production.
- In addition to bidding potentially millions of dollars for each lease block, companies pay rent to the federal government on non-producing leases. Annual rental rates can cost hundreds of thousands of dollars per lease block.
- Companies are required under government leasing regulations to develop a lease expeditiously or return it to the federal government. Rental terms are established in the Final Notice of Sale and typically range from 5 to 10 years, depending on water depth. In general, leases that are not producing by the end of their term are relinquished to the government, which can then re-lease them. The resources invested by the company to acquire and keep the lease are lost if a lease is returned to the government.

[21] https://crsreports.congress.gov/product/pdf/R/R40645

It takes time and significant investments to explore and develop an offshore lease block. Capital costs for offshore exploration and development are significant, with total costs for projects regularly going into the billions of dollars.

- Offshore seismic exploration can cost upwards of $200,000 per day.
- Offshore exploratory wells can cost anywhere from $25 million to more than $100 million for some deepwater prospects. It is not unusual for a company to spend more than $100 million on an exploratory well only to come up empty with a "dry hole."
- If a company does end up identifying commercial quantities of oil or natural gas, the subsequent design and installation of deepwater production facilities regularly exceeds $1 billion.

Developing a lease block does not occur overnight. The timeline from lease sale to first oil can take up to ten years. A typical project progression includes:

- One year for preliminary geological investigation and selection of areas of interest for seismic data acquisition.
- One year to two years to acquire and process seismic data and identify drillable prospects.
- A year or more to contract and schedule a drilling rig to carry out a drilling program.
- Six to 10 months to drill and complete an exploratory well.
- Six months to a year for follow-up evaluation of drilling results, which can include drilling a sidetrack well.
- Another two to three years for additional delineation drilling, and formulating a reservoir development plan if the exploratory well proves successful. During this time, the company also is working on pre-permit studies, permitting, and design and procurement for production facilities, including surface and subsurface equipment and systems,
- One year or more is needed for facilities installation, followed by development drilling, which can take one to two additional years. During this period, the company is involved in design, permitting, engineering, procurement and installation of a pipeline or offshore system to bring production to market.

The Continuously Improving Efficiency of Federal Offshore Oil & Gas Leasing System

Gulf of Mexico oil and gas companies are producing a massive amount of energy with a small – and shrinking – physical footprint.

Gulf of Mexico Oil and Gas Lease Information[22]

Date	Number of Active Leases	Acreage of Active Leases	Number of Producing Leases	Acreage of Producing Leases	Number of Non-producing Leases	Acreage of Non-producing Leases	Average Daily Production
December 2021	2,018	10,773,137	540	2,766,936	1,478	8,006,201	1.73 mbpd
December 2016	3,257	17,331,283	873	4,301,193	2,381	13,030,090	1.73 mbpd
December 2011	5,873	31,576,909	1,244	6,065,566	4,629	25,511,343	1.25 mbpd

Leasing data demonstrates that the industry is innovating and advancing technologies to do more with less. Over the 10-year period from 2011, the industry increased oil production in the Gulf of Mexico by 38 percent while the number of producing leases decreased by 57 percent. This is an impressive achievement, but it is a trend that is not tenable in the long term.

Continued offshore lease sales are absolutely imperative because it is only through a robust leasing program with biannual opportunities to secure leases that companies are able to find and develop the most prospective targets. Placing an arbitrary cap on when or how companies can safely explore and develop American energy resources introduces an obstacle that will be daunting to overcome. The preference for all stakeholders should be to enable consistent lease sales that allow steady and predictable development.

Future Leasing is Necessary for Continued U.S. Oil and Natural Gas Production

As with many other forms of energy development, oil and gas production is contingent upon having acreage that can be explored and produced. Leasing is requisite to securing 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.[23]

According to Rystad Energy, global oil exploration activities must ramp up to meet global demand through 2050. More than $3 trillion in capital expenditure will be needed to add the undeveloped and undiscovered resources necessary for the global market. 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."[24]

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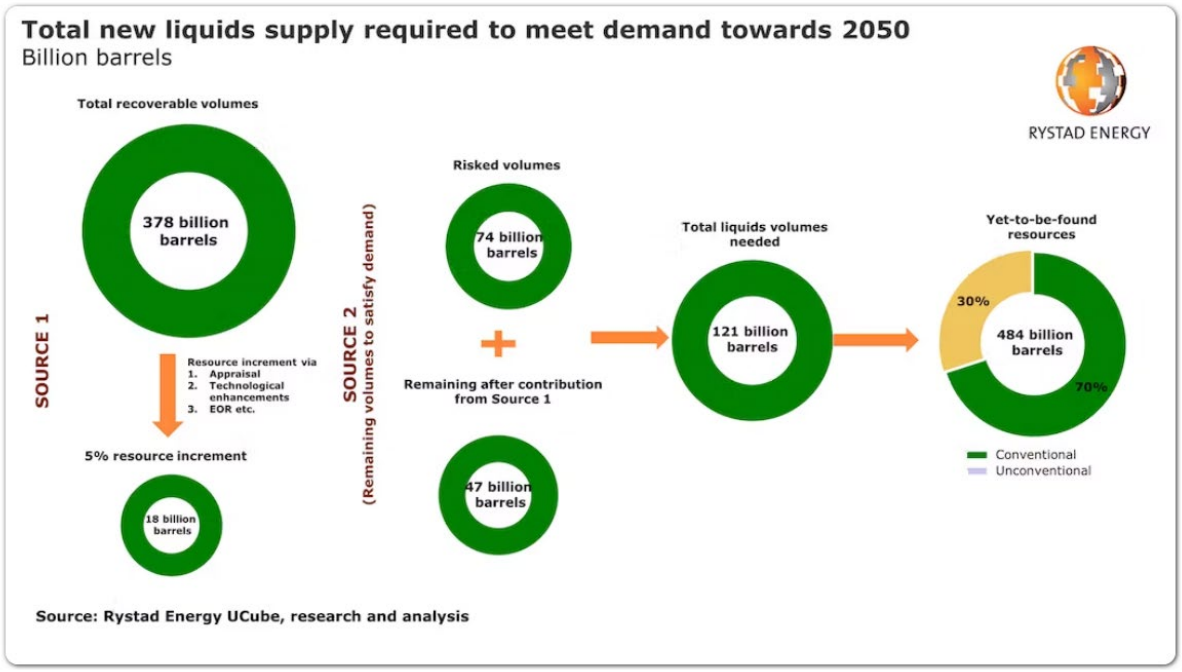
[22] Source: BOEM, EIA (As of March 2022, there are 1,997 active leases, with 479 producing leases, 1,518 non-producing leases in the Gulf of Mexico.)

[23] It is not true, however, that more leasing necessarily leads to more environmental impacts. As noted herein, many leases will not go into production, and for those that do, industry has continued to minimize the footprint necessary for production as it continues to do more with less.

[24] https://www.offshore-mag.com/drilling-completion/article/14188804/exploration-overdrive-urgently-required-rystad-energy-report-claims

The following chart provides a breakdown of the current and future oil needs through 2050:



Source: Rystad Energy UCube, research and analysis, as reported in *Offshore Magazine*, "Exploration overdrive urgently required, report claims," December 10, 2020.[25]

The implications of what happens when oil production cannot meet oil demand surfaced as the world emerged from pandemic lockdowns. The year 2021 saw a strong economic recovery – domestically and globally – as some degree of normalcy resumed. Oil consumption grew by a very strong 6.1 percent in 2021, but it takes time, capital, and entire teams of experts to ramp up production safely and responsibly, and producers could not immediately meet the demand.

Oil production grew by a "tepid" 1.5% with prices jumping sharply as demand outpaced supply[26]. Brent crude oil, a global benchmark, started the year at $50 per barrel and increased to a high of $86 per barrel in late October before declining in the final weeks of the year[27]. The trend continued in 2022, with $98 per barrel forecasted in the fourth quarter of 2022 and $97 per barrel forecasted in the first quarter of 2023[28]. A recurring trend of similarly painful price shocks can be reasonably expected if global oil markets are not able to invest in new projects to keep energy flowing.

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[25] https://www.offshore-mag.com/drilling-completion/article/14188804/exploration-overdrive-urgently-required-rystad-energy-report-claims

[26] https://www.forbes.com/sites/thebakersinstitute/2022/08/23/oil-is-the-outlier-in-the-worlds-post-covid-energy-recovery/?sh=4b3f9605e840

[27] https://www.eia.gov/todayinenergy/detail.php?id=50738

[28] https://www.eia.gov/outlooks/steo/report/prices.php#:~:text=The%20Brent%20crude%20oil%20spot,and%20%2497%2Fb%20in%202023.

The U.S. Gulf of Mexico has been a steady and reliable source of oil production over the past several decades and achieved a leadership position globally for deepwater development, maintaining production at more than one million barrels of oil per day since 1997. The United States must sustain production from this region if the country is to meet domestic demand.

Analysts at Energy & Industry Advisory Partners (EIAP) published a study titled *The Economic Impacts of a 5-Year Leasing Program Delay for the Gulf of Mexico Oil and Natural Gas Industry* that looks at the drop in production from the Gulf of Mexico if lease sales are disrupted[29]. An uninterrupted leasing program in the Gulf of Mexico would produce an average of 2.6 million barrels equivalent of oil and natural gas per day from 2022-2040. Eliminating lease sales would result in about 500,000 barrels equivalent per day less over that period, amounting to approximately 3.3 billion barrels equivalent of lost production.

The following table shows the anticipated loss in oil and natural gas production with no lease sales in the program:

	2016	2017	2018	2019	2020	2021	2022
Oil (Delayed 5-year Leasing Program Case)	1,598,583	1,680,500	1,757,167	1,892,167	1,644,083	1,696,200	1,770,904
Oil (Base Case)	1,598,583	1,680,500	1,757,167	1,892,167	1,644,083	1,696,200	1,770,904
Natural Gas (Delayed 5-year Leasing Program Case)	548,251	484,225	445,142	463,627	360,395	349,089	364,464
Natural Gas (Base Case)	548,251	484,225	445,142	463,627	360,395	349,089	364,464
Total BOE (Delayed 5-year Leasing Program Case)	2,146,834	2,164,725	2,202,309	2,355,794	2,004,478	2,045,289	2,135,368
Total BOE (Base Case)	2,146,834	2,164,725	2,202,309	2,355,794	2,004,478	2,045,289	2,135,368

	2023	2024	2025	2026	2027	2028
Oil (Delayed 5-year Leasing Program Case)	1,862,644	2,045,883	2,104,153	2,125,785	2,131,351	2,104,996
Oil (Base Case)	1,862,644	2,045,883	2,109,445	2,157,480	2,194,981	2,256,299
Natural Gas (Delayed 5-year Leasing Program Case)	379,846	411,896	422,762	427,058	428,169	422,875
Natural Gas (Base Case)	379,846	411,896	423,869	435,216	443,651	454,074
Total BOE (Delayed 5-year Leasing Program Case)	2,242,490	2,457,779	2,526,915	2,552,844	2,559,520	2,527,871
Total BOE (Base Case)	2,242,490	2,457,779	2,533,314	2,592,696	2,638,632	2,710,373

[29] https://www.noia.org/noia-one-pagers-infographics/#flipbook-df_223664/1/

	2029	2030	2031	2032	2033	2034
Oil (Delayed 5-year Leasing Program Case)	2,044,281	1,940,296	1,873,776	1,791,263	1,743,126	1,673,276
Oil (Base Case)	2,271,322	2,342,453	2,402,462	2,443,896	2,407,104	2,344,299
Natural Gas (Delayed 5-year Leasing Program Case)	410,677	389,788	376,425	359,849	350,178	336,146
Natural Gas (Base Case)	456,644	489,210	535,392	546,145	543,756	538,374
Total BOE (Delayed 5-year Leasing Program Case)	2,454,958	2,330,084	2,250,200	2,151,111	2,093,304	2,009,422
Total BOE (Base Case)	2,727,966	2,831,663	2,937,854	2,990,041	2,950,860	2,882,674

	2035	2036	2037	2038	2039	2040
Oil (Delayed 5-year Leasing Program Case)	1,620,909	1,522,137	1,447,031	1,346,578	1,332,971	1,320,109
Oil (Base Case)	2,276,146	2,187,721	2,062,724	1,930,878	1,849,058	1,779,534
Natural Gas (Delayed 5-year Leasing Program Case)	325,626	305,784	290,695	270,515	267,782	265,198
Natural Gas (Base Case)	532,478	524,431	511,863	497,875	489,172	481,191
Total BOE (Delayed 5-year Leasing Program Case)	1,946,535	1,827,921	1,737,726	1,617,094	1,600,752	1,585,307
Total BOE (Base Case)	2,808,623	2,712,152	2,574,587	2,428,753	2,338,230	2,260,725

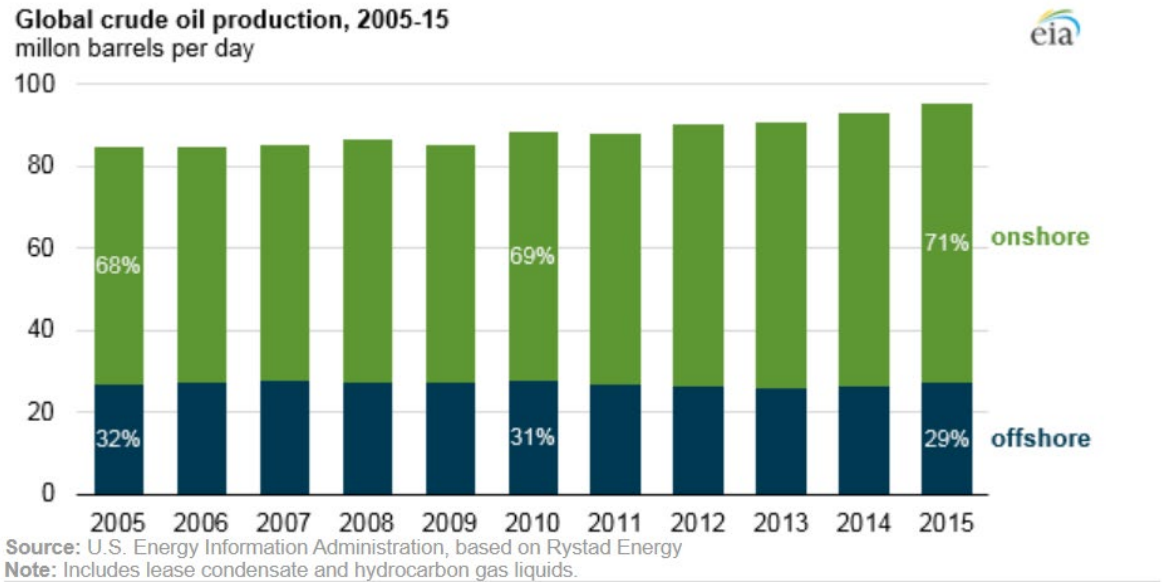
Source: Energy and Industrial Advisory Partners

Offshore leasing has a clear and profound impact on U.S. oil and natural gas supplies. Under the base case, with continued unabated Gulf of Mexico leasing, offshore oil production from the Gulf is projected to increase to a high mark of 2,443,896 barrels per day in 2032 and is expected to be near current levels, 1,779,534 barrels per day projected, in 2040. If there are no lease sales in the program, offshore production from the Gulf is expected to be 1,791,263 barrels per day in 2032, a drop of more than 600,000 barrel per day from the base case. A delayed leasing program results in 1,320,109 barrels per day of production in 2040, a drop of more than 400,000 barrel per day from the base case.

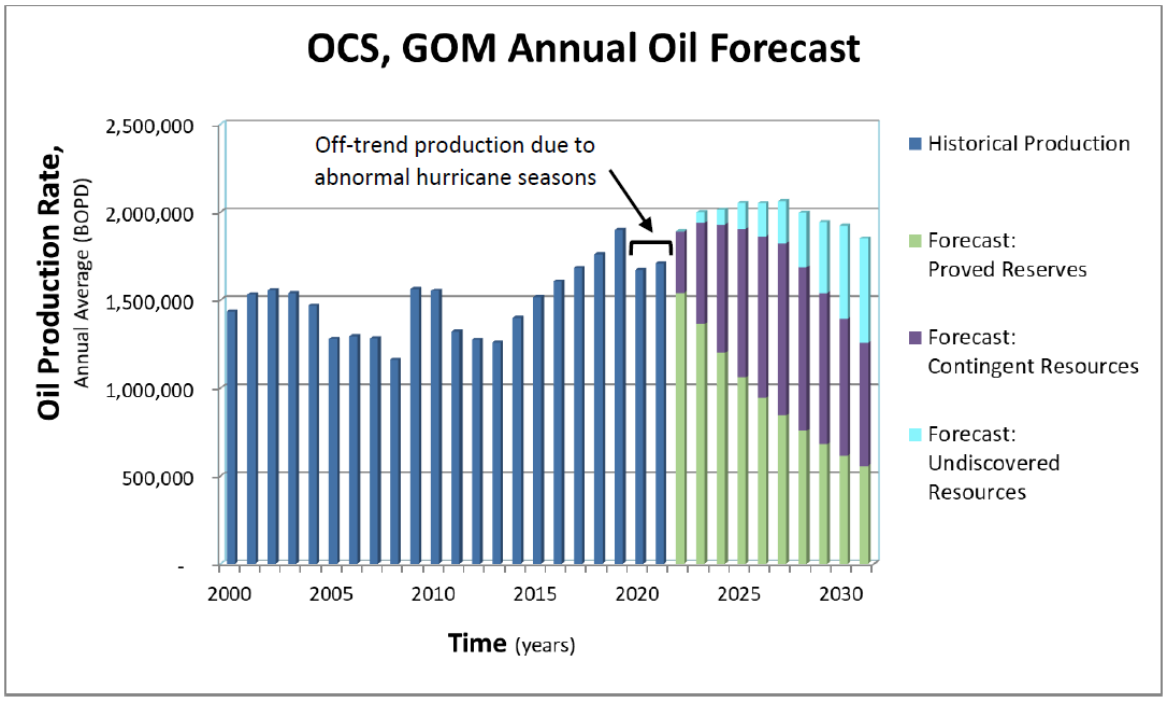
According to the EIAP study, "A key requirement for continued Gulf of Mexico oil and natural gas production is continued lease sales, which enable operators to explore new acreage for previously undiscovered resources, develop new projects, and underpin existing and planned projects by allowing operators to backfill production into facilities with declining production."[30]

The offshore region more generally is recognized as a preferred global region for offshore oil and natural gas investment. Historically, offshore production has accounted for about thirty percent of total oil production globally:

[30] https://www.noia.org/noia-one-pagers-infographics/#flipbook-df_223664/1/, at page 3.

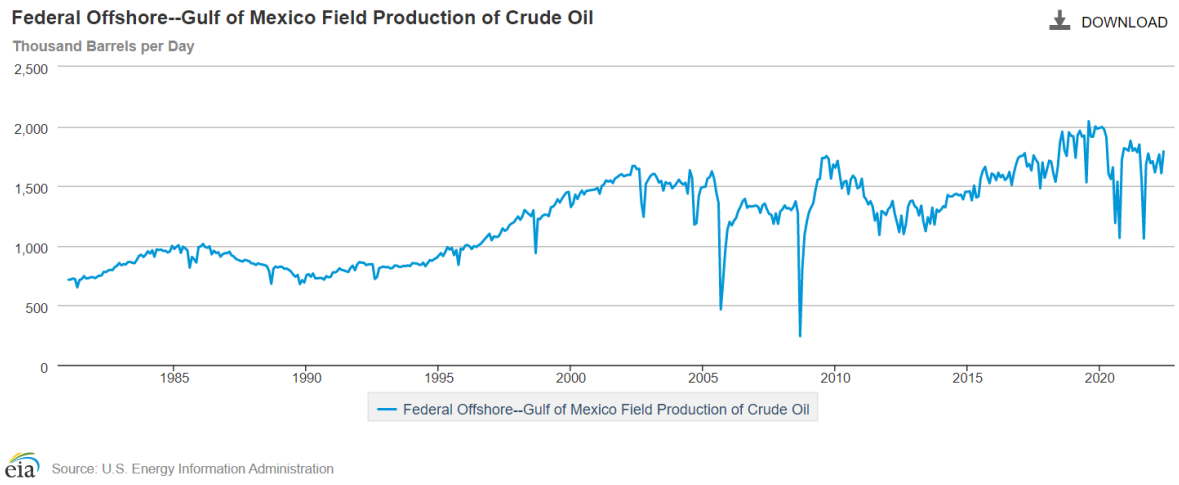


The BOEM's own estimates for the Gulf of Mexico demonstrate continued high levels of oil production for the region and also assume that federal leasing for offshore tracts continues for the forecast period:



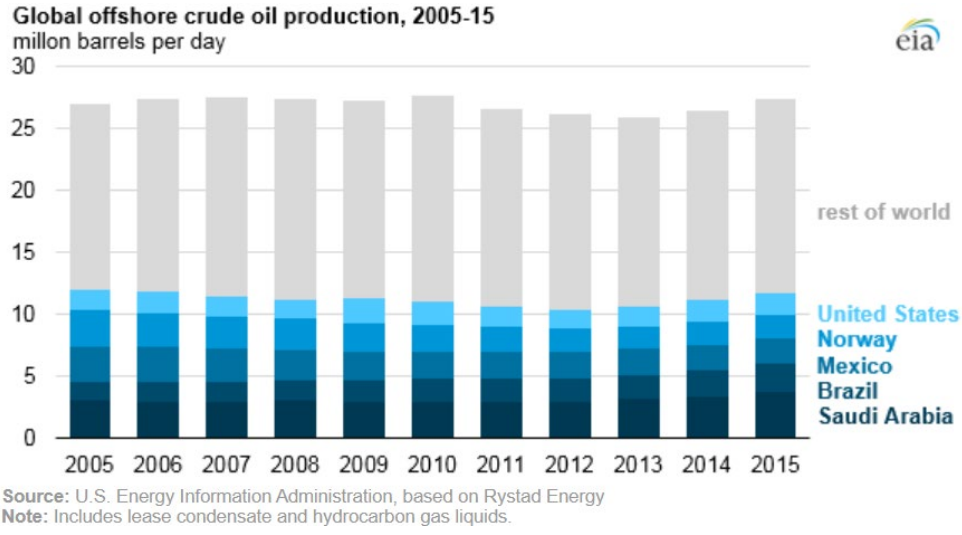
Source: *U.S. Outer Continental Shelf Gulf of Mexico Region: Oil and Gas Production Forecast 2022-2031*, OCS Report BOEM 2022-022, page 23.

The U.S. has been producing oil 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 was at 1.762 million barrels per day in July 2022.

Oil is a global commodity, and investment in oil production projects occurs on a global scale. The U.S. Gulf of Mexico shines as a premier region for oil production, with substantial benefits flowing to American consumers. Eliminating or reducing lease sales in the leasing program will shift that investment away from the U.S. Gulf of Mexico to other regions, both offshore and onshore, throughout the world. As the chart below shows, the U.S. stands out as a global leader in offshore oil production:



The U.S. Gulf of Mexico ranked second in the world based on the volume of new discoveries of oil from 2015-2019 (shown in billions of barrels) as reported by Rystad Energy in November 2019[31].

1. GUYANA	6.06
2. UNITED STATES	5.03
3. RUSSIA	3.67
4. MEXICO	2.32
5. UK	2.03
6. NORWAY	1.89
7. ANGOLA	1.06
8. BRAZIL	0.54

Following increased investment and additional discoveries offshore Guyana, the most recent Rystad Energy estimate places Guyana discoveries since 2015 at more than 11 billion barrels.[32]

This number tells an important story. The oil and natural gas industry continues to invest in offshore projects around the world because the hydrocarbons produced offshore have clear and positive economic, environmental, and climate attributes compared to other regions.

Offshore oil and gas development is recognized for providing among the lowest carbon barrels of oil in the world, and the U.S. Gulf of Mexico stands out as a global leader. In the interest of reducing the carbon intensity of oil and gas development globally and boosting energy security, the U.S. oil and gas leasing policy should proactively attract investment to the United States.

BOEM recognizes a promising future for oil development in the Gulf of Mexico. According to the *2021 Assessment of Technically and Economically Recoverable Oil and Natural Gas Resources of the Gulf of Mexico Outer Continental Shelf*[33], 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. We know from experience that technology advancements will continue to enable the discovery and development of ever-increasing volumes, resulting in a

[31] https://guyanapetroleumdigest.ca/2019/11/26/guyana-still-leads-world-offshore-oil-discoveries-since-2015-2019-with-6-8-billion-barrels/

[32] https://www.forbes.com/sites/davidblackmon/2022/07/28/new-oil-power-guyana-on-pace-to-surpass-us-offshore-by-2035/?sh=59eb17cc6c06

[33] 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

continuous upward trend over time in the estimated undiscovered technical recoverable resources in the Gulf of Mexico.

These estimates mean nothing, however, if companies do not have the opportunity to continue to lease acreage for development through regular, formalized lease sales. 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 for public policy to encourage and attract investment to U.S. offshore production opportunities.

OFFSHORE LEASING 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.[34]

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 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."[35]

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."

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

[35] https://www.woodmac.com/news/the-edge/is-the-world-sleepwalking-into-an-oil-supply-crunch/

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."[36] 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.[37] 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.

Saudi Aramco CEO Amin H. Nasser identified the crux of the issue with 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.
>
> 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.[38]

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

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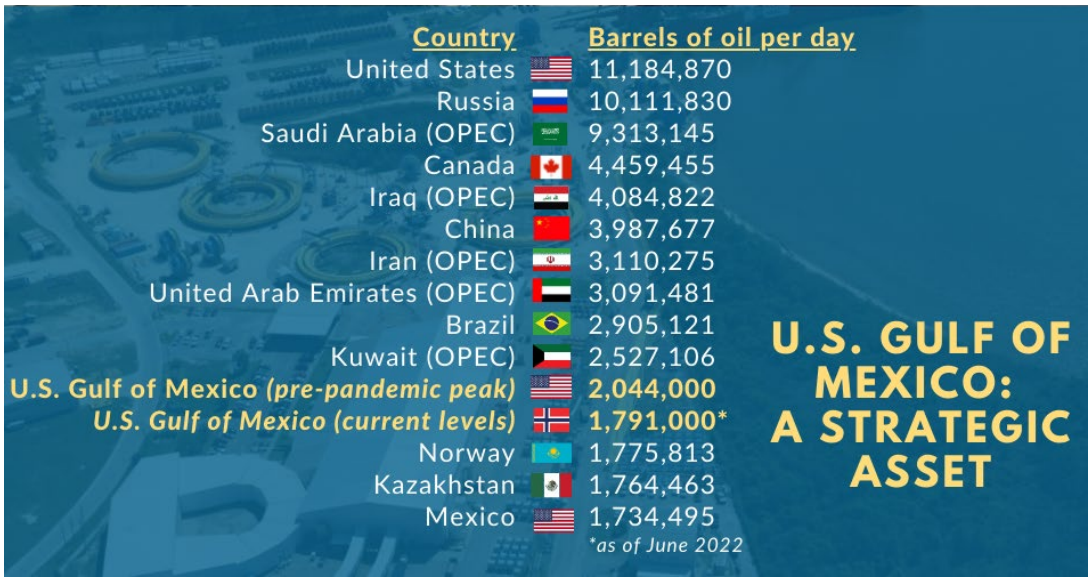
[36] https://www.woodmac.com/news/the-edge/is-the-world-sleepwalking-into-an-oil-supply-crunch/
[37] https://www.offshore-mag.com/drilling-completion/article/14188804/exploration-overdrive-urgently-required-rystad-energy-report-claims
[38] https://www.aramco.com/en/news-media/speeches/2022/remarks-by-amin-h-nasser-at-schlumberger-digital-forum#

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."[39]

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:



Source: U.S. Energy Information Administration.

The U.S. offshore oil producing basin can help address the current and projected gap between global supply and demand. Bringing to market oil from this region will help exert downward pressure on the price of oil and petroleum products such as gasoline, which has become a more costly necessity for American consumers as well as businesses.

Offshore projects around the world contribute massive amounts of natural gas to global production volumes, and prolific areas like the U.S. Gulf of Mexico can help address issues surrounding the tightening in global natural gas supplies, which has led to record high prices in various regions. Although natural gas production from the U.S. offshore has hovered around two billion cubic feet (bcf) per day, Gulf of Mexico production in the late 1990s exceeded 5 bcf per day, and there is significant potential for growth. Today, the United States is a leading exporter of LNG at a time when demand for U.S. LNG is growing from our allies around the world[40]. If the United States were to invest in more offshore development, natural

[39] https://www.aramco.com/en/news-media/speeches/2022/remarks-by-amin-h-nasser-at-schlumberger-digital-forum#
[40] https://www.reuters.com/markets/commodities/firms-make-deals-boost-lng-exports-60-us-canada-mexico-2022-08-23/

gas production from the U.S. Gulf of Mexico could feed into the domestic or LNG market, helping to bring down the cost and provide secure energy to our allies.

Expanding natural gas production and usage provides environmental benefits as well. For example, replacing coal with natural gas in power generation significantly reduces emissions. According to Fatih Birol, Executive Director of the International Energy Agency (IEA), "Natural gas is one of the mainstays of global energy. Where it replaces more polluting fuels, it improves air quality and limits emissions of carbon dioxide."[41] Burning natural gas for power generation produces about half as much carbon dioxide as coal to produce the same amount of energy.

The U.S. Energy Information Administration (EIA) explains the differences:

> CO_2 emissions associated with generating electricity from coal and natural gas differ because of differences in the fuels themselves—coal has more carbon content per unit of energy. In addition, coal-fired plants and natural gas-fired plants differ in how efficiently they convert their respective fuels to electricity. The amount of CO_2 produced when a fuel is burned depends on a fuel's carbon content. Coal produces more CO_2 per unit of energy than natural gas does when burned. Coal consumption for electricity generation produces 209 pounds of CO_2 per million British thermal units (MMBtu), compared with 117 pounds of CO_2/MMBtu for natural gas.[42]

According to the EIA, the shift from coal to natural gas in U.S. power generation has had profound positive emissions benefits for the U.S., catapulting the U.S. to leadership in GHG emissions reductions around the world. "Over the past 15 years, the U.S. electricity generation mix has shifted away from coal and toward natural gas and renewables, resulting in lower CO_2 emissions from electricity generation. In 2019, the U.S. electric power sector produced 1,724 million metric tons (MMmt) of CO_2, 32% less than the 2,544 MMmt produced in 2005."[43]

The following EIA graphic shows the impactful decline in emissions attributable to the rise in natural gas production and use in the United States:

[41] https://www.iea.org/reports/the-role-of-gas-in-todays-energy-transitions

[42] "Electric power sector CO_2 emissions drop as generation mix shifts from coal to natural gas," *This Week in Energy*, U.S. Energy Information Administration, June 9, 2021.

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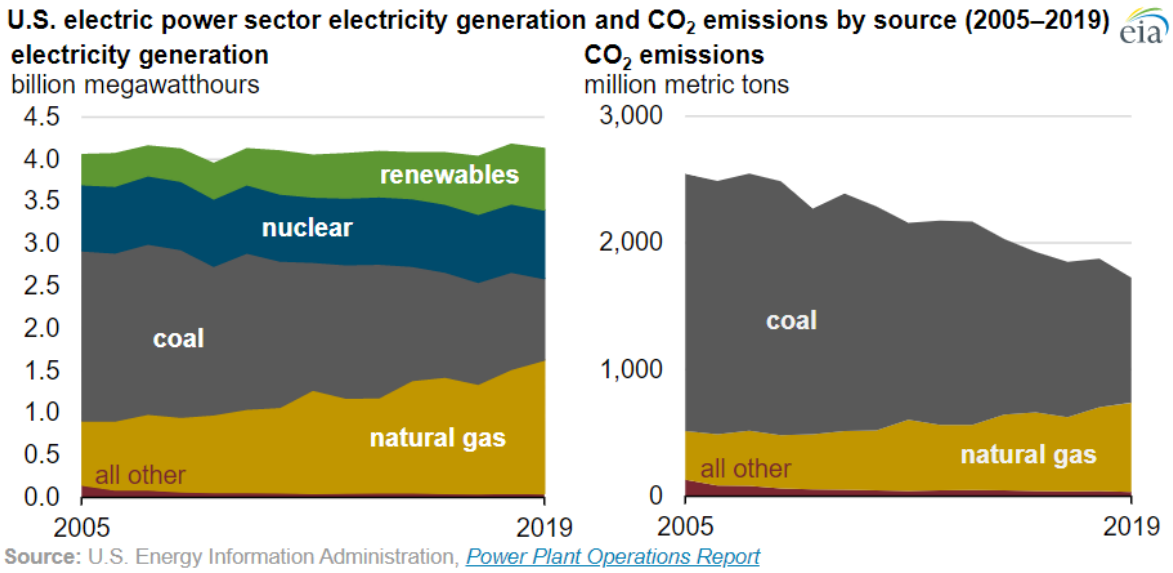
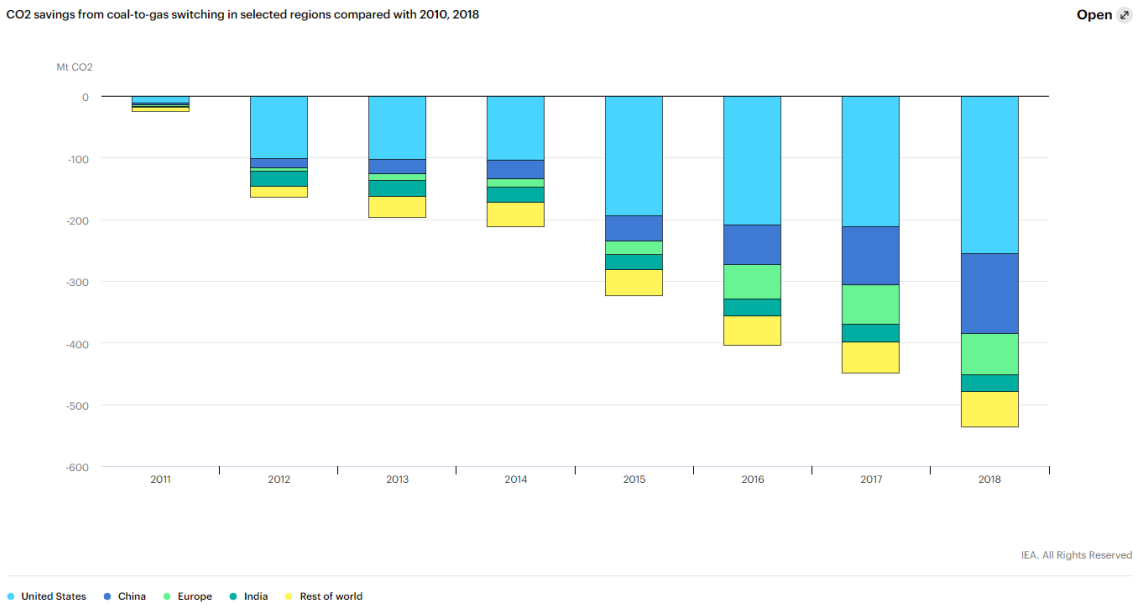


The global economy has experienced similar emissions reductions as a result of switching from coal to natural gas. The drop in emissions from 2010 to 2018 is evident in data reported by IEA[44]:



Switching from coal to natural gas has serious health benefits as well. According to Harvard's Jackson Salovaara:

> [N]atural gas is superior to coal in a number of respects other than CO2 emissions. Natural gas burns much more cleanly than coal, only emitting NOx and methane in significant quantities when combusted. By comparison, coal combustion emits NOx

[44] https://www.iea.org/reports/the-role-of-gas-in-todays-energy-transitions (Reprinted from IEA)

> and methane at higher rates than natural gas and also emits SO2 [sulfur dioxide], mercury, particulate matter, CO, and toxic metals. These air pollutants have dangerous impacts on human health—SO2, particulate matter, and CO are damaging to the respiratory system and mercury consumption can cause birth defects and lower IQ.[45]

Unfortunately, the current energy crisis and the energy challenges associated with Russia's invasion of Ukraine have pushed countries to revert to coal power generation, and in some regions, the move has been substantial. In June 2022, *The Washington Post* reported that several European countries were in the process of making the switch, "Austria, Germany, Italy and the Netherlands announced plans this week to prepare to resurrect old coal plants as gas supplies dwindled. The moves came just days after Moscow reduced natural gas flows to several European countries, including Italy and Slovakia, alarming leaders who are worried about energy reserves ahead of winter."[46]

Reuters has confirmed there is now a rush for coal supplies from European buyers to secure the energy needed ahead of the coming winter,

> Prices for thermal coal, used to generate electricity, have leapt to record levels as a result of the war, which has led to many European countries losing access to vital supplies of natural gas and coal from their top provider Russia. Buyers in Europe and beyond are now vying to pay top dollar for coal from often remote mines in places such as Tanzania, Botswana and even potentially Madagascar. The resurgent coal demand, driven by governments trying to wean themselves off Russian energy while keeping a lid on power prices, clashes with climate plans to shift away from the most polluting fossil fuel.[47]

And Nasdaq has reported that European imports of coal are expected to hit some of the highest levels in years, "European imports of thermal coal could be the highest in at least four years in 2022 and may rise further next year, analysts said on Monday, highlighting the extent of the energy crisis resulting from sanctions on top supplier Russia."[48]

The recent switch back to coal for power generation comes on top of continued construction of new coal-fired power plants around world, particularly in China and India. A report from the Wilson Center highlights the continued role of coal in the Chinese economy:

> In 2021, China began building 33 gigawatts of coal-based power generation, according to the Helsinki-based Center for Research on Energy and Clean Air (CREA). That is the most new coal-fired power capacity China has undertaken since 2016 and, says CREA, three times more than the rest of the world *combined*.... India gets roughly

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[45] Salovaara, "Coal to Natural Gas Fuel Switching and CO2 Emissions Reduction," Harvard College, 2011, at pages 87-88.

[46] https://www.washingtonpost.com/world/2022/06/22/coal-plant-europe-germany-austria-netherlands-russia-gas/

[47] https://www.reuters.com/markets/commodities/coal-rush-energy-crisis-fires-global-hunt-polluting-fuel-2022-09-20/

[48] https://www.nasdaq.com/articles/going-back-in-time:-europes-coal-imports-to-hit-multi-year-highs-in-2022

> 70% of its electricity from coal, and the Modi government recently ordered the reopening of more than 100 closed mines to meet rapidly growing demand made even greater by the country's crushing heat wave.[49]

Although other countries are exerting pressure on China and India to reduce emissions, it is clear that the global economy will continue to rely on supplies of energy that are affordable and reliable even if they are not the best choices for the environment. An "all of the above" approach considers both traditional fuels and renewables to provide the energy necessary for the fundamentals of life. Growth in renewable energy and offshore wind will be strong for years to come, and natural gas will play an important and expanding role, filling the gap as a much cleaner alternative to coal. Gas production from the U.S. Gulf of Mexico has great potential to help keep energy costs affordable and support U.S. allies around the globe. A robust offshore leasing program is essential to keeping that door open.

High energy prices impact all Americans, but they disproportionately impact low income and minority communities in which many must decide between food, healthcare, or energy bills. In a different way, businesses that rely on affordable and reliable supplies of energy suffer as well. Today, manufacturers in Europe are laying off employees and shutting down factories in direct response to high prices of natural gas and electricity.[50] Policies that promote oil and natural gas production promote important principles of economic and environmental justice by helping those in need with greater energy affordability and help fuel the businesses and factories upon which the world economy relies.

OFFSHORE LEASING STIMULATES INVESTMENT IN AMERICAN ENERGY PRODUCTION

Offshore oil and gas development is capital intensive. In 2021, an EIAP study titled *The Gulf of Mexico Oil & Gas Project Lifecyle: Building an American Energy & Economic Anchor* places the total lifetime spend to develop and produce a deepwater Gulf of Mexico at approximately $8.8 billion. The average annual spend is nearly $295 million, with the highest spending levels taking place during project development, when subsea tieback development is taking place, and during decommissioning. The average shallow-water project results in an estimated $1.3 billion total lifetime spending, including $27.5 million in annual operational expenditures.[51]

In another EIAP study, *The Economic Impacts of a 5-Year Leasing Program Delay for the Gulf of Mexico Oil and Natural Gas Industry*,[52] released in 2022, analysts projected Gulf of Mexico offshore oil and gas spending for 2022 would be approximately $30.3 billion. Across the forecast period from 2022-2040, EIAP estimates Gulf of Mexico the offshore oil and natural gas industry will spend $30.6 billion per year. This investment projection assumes there will be no interruption in Gulf of Mexico oil and gas lease sales.

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[49] https://www.wilsoncenter.org/blog-post/chinese-coal-based-power-plants
[50] https://www.nytimes.com/2022/09/19/business/europe-energy-crisis-factories.html
[51] https://www.noia.org/noia-reports/#flipbook-df_218475/1/
[52] https://www.noia.org/noia-one-pagers-infographics/#flipbook-df_223664/1/

Lease sale delays would dramatically reduce the projected investment. According to the 2022 study, an extensive delay in the leasing program (or zero lease sales, which is included as an option in the Proposed Program) could result in a drop in capital expenditure of about $10 billion in the peak year and a nearly $100 billion capital spending loss over the forecast period.

The study provides a high degree of granularity, identifying the specific types of spending that take place throughout the lease life cycle. The table below shows the breakdown in spending for a multitude of areas of offshore oil and gas development for 2021 and 2022:

	2021	2022
G&G	$192	$230
Drilling Tangibles	$863	$1,224
Trees	$506	$554
Manifolds	$261	$288
Other Subsea Hardware	$90	$135
Control Umbilical, Flying Leads	$308	$352
Infield FL	$68	$119
Export PL	$358	$734
Infield Risers	$33	$57
Export Risers	$14	$29
Fixed Platforms & Facilities	$88	$168
Floating Production Units & Facilities	$1,760	$1,870
Installation	$1,038	$1,632
OPEX	$13,474	$13,548
Decommissioning CAPEX	$858	$785
Drilling	$4,882	$6,790
Engineering CAPEX	$679	$846
Engineering OPEX	$886	$891
Natural Gas Processing and Transportation	$124	$127
Total	$26,483	$30,252

Source: Energy & Industrial Advisory Partners, *The Economic Impacts of a 5-Year Leasing Program Delay for the Gulf of Mexico Oil and Natural Gas Industry,* March 29, 2022. page 59.[53]

Thousands of companies support offshore Gulf of Mexico oil and gas development. While the bulk of the work and a significant portion of the spending occur along the Gulf Coast, the supply chain for offshore oil and gas development is long and strong, with vendors in every state getting business from the activity.

In a 2021 study, *The Economic Impacts of the Gulf of Mexico Oil and Natural Gas Industry*, EIAP identified more than 2,400 companies distributed across all 50 states that provide supplies or services to the offshore sector. EIAP offers this example as a snapshot of the range of companies that benefit from offshore oil and gas, noting, "This list greatly underestimates

[53] https://www.noia.org/noia-one-pagers-infographics/#flipbook-df_223664/1/

the number of companies who supply the industry."[54] The spending impacts from Gulf of Mexico oil and natural gas development extend beyond the Gulf Coast, permeating every state in the country.

With U.S. and global demand for oil and gas expected to rise for the next two decades, high levels of spending stemming from offshore oil and gas leasing will continue to sustain businesses across the country.

OFFSHORE LEASING SUPPORTS HIGH-PAYING JOBS

Offshore oil and gas development is widely recognized as an employment engine that provides good-paying jobs. The study, *The Economic Impacts of a 5-Year Leasing Program Delay for the Gulf of Mexico Oil and Natural Gas Industry*,[55] estimates offshore oil and natural gas employment numbers under the base case with no interruption in lease sales at an average of 372,012 jobs per year throughout the forecast period of 2022-2040[56]:

	2016	2017	2018	2019	2020	2021	2022	2023	2024
Texas	166,737	158,715	155,767	147,462	133,381	136,682	158,256	169,253	164,634
Louisiana	98,247	94,932	95,089	94,621	89,432	89,175	98,473	107,040	106,535
Mississippi	21,524	20,740	20,926	20,415	19,110	19,116	21,593	23,268	22,947
Alabama	29,595	28,870	29,053	28,011	25,157	26,508	29,250	30,871	30,276
Other U.S. States	65,041	60,861	59,631	54,989	43,624	52,990	63,954	63,667	59,865
Total	381,144	364,119	360,465	345,498	310,703	324,472	371,525	394,099	384,257

	2025	2026	2027	2028	2029	2030	2031	2032
Texas	168,823	171,201	176,391	179,528	184,119	178,814	168,823	157,130
Louisiana	108,625	110,246	112,832	114,379	116,248	114,839	111,109	106,689
Mississippi	23,447	23,748	24,349	24,675	25,165	24,710	23,765	22,605
Alabama	30,713	30,922	31,489	31,855	32,460	31,972	31,020	29,808
Other U.S. States	60,641	60,881	61,335	62,846	65,014	62,801	58,175	53,819
Total	392,249	396,997	406,396	413,284	423,006	413,136	392,892	370,050

	2033	2034	2035	2036	2037	2038	2039	2040
Texas	150,541	142,724	135,170	120,756	135,144	142,858	148,587	151,886
Louisiana	103,567	100,503	97,262	95,642	96,386	99,700	101,946	103,580
Mississippi	21,901	21,106	20,333	19,889	20,198	20,982	21,564	21,916
Alabama	29,166	28,325	27,531	27,014	27,432	28,141	28,694	29,009
Other U.S. States	51,622	48,733	45,040	43,496	46,369	49,944	51,839	53,838
Total	356,797	341,392	325,336	306,798	325,529	341,625	352,631	360,229

Source: Energy and Industrial Advisory Partners

[54] https://www.noia.org/noia-reports/#flipbook-df_217502/1/, at page 6
[55] https://www.noia.org/noia-one-pagers-infographics/#flipbook-df_223664/1/
[56] https://www.noia.org/noia-one-pagers-infographics/#flipbook-df_223664/1/, at page 51.

Not surprisingly, the large majority of jobs are along the Gulf Coast, but the offshore industry depends on supplies and services from the work of Americans in every state. With its extensive reach and impact, the Gulf of Mexico oil and gas industry supports between 40,000 and 65,000 jobs each year outside the Gulf Coast.

Employment projections if the leasing program is delayed, under a zero lease sale scenario such as the one included in the Proposed Program, paint a bleak picture. The EIAP study estimates employment losses at an average of more than 57,000 American jobs per year with a peak during of about 116,000 lost jobs[57]:

	2016	2017	2018	2019	2020	2021	2022	2023
Texas	0	0	0	0	0	0	-159	-1,684
Louisiana	0	0	0	0	0	0	-21	-545
Mississippi	0	0	0	0	0	0	-9	-150
Alabama	0	0	0	0	0	0	-17	-168
Other U.S. States	0	0	0	0	0	0	-70	-594
Total	0	0	0	0	0	0	-275	-3,140

	2025	2026	2027	2028	2029	2030	2032
Texas	-15,274	-25,344	-38,058	-46,490	-54,668	-52,126	-37,024
Louisiana	-6,337	-10,536	-16,303	-20,000	-24,028	-24,150	-20,080
Mississippi	-1,551	-2,575	-3,929	-4,780	-5,703	-5,572	-4,312
Alabama	-1,617	-2,753	-4,122	-5,101	-6,085	-6,011	-4,791
Other U.S. States	-5,724	-10,739	-16,608	-22,096	-25,458	-24,323	-17,011
Total	-30,503	-51,948	-79,020	-98,466	-115,942	-112,182	-83,218

	2033	2034	2035	2036	2037	2039	2040
Texas	-32,757	-26,109	-24,919	-22,476	-16,375	-13,422	-12,366
Louisiana	-18,923	-16,681	-16,163	-13,978	-13,346	-13,242	-13,149
Mississippi	-3,971	-3,333	-3,258	-2,679	-2,489	-2,339	-2,272
Alabama	-4,516	-3,970	-4,028	-3,481	-3,295	-3,184	-3,178
Other U.S. States	-15,415	-13,278	-11,916	-8,486	-6,165	-4,014	-3,755
Total	-75,582	-63,370	-60,284	-51,100	-41,669	-36,202	-34,720

Source: Energy and Industrial Advisory Partners

The 2021 EIAP report, *The Gulf of Mexico Oil & Gas Project Lifecyle: Building an American Energy & Economic Anchor*, describes the sizable economic and employment footprint of shallow-water and deepwater project life cycles to provide a foundation for developing employment estimates. EIAP establishes the credibility of its numbers, basing them on a vast database that allows analysts to break down offshore energy development into five distinct stages: pre-development, development, operations, infill drilling and tiebacks, and abandonment and decommissioning. Each stage is further segmented to identify individual activities, types of equipment, primary company and supplier types, sub-supplier types, and

[57] https://www.noia.org/noia-one-pagers-infographics/#flipbook-df_223664/1/, at page 63.

types of employment. Finally, the study describes the fields of work, occupations, and wages for workers throughout the life cycle of a lease.

One of the things that differentiates a Gulf of Mexico project from other types of construction efforts is that it has a massive economic impact over their entire project life cycle. EIAP identified more 200 types of jobs involved in U.S. Gulf of Mexico oil and gas production. Together, the women and men who fill these positions work to safely produce lower-emission, environmentally responsible barrels of oil and natural gas.

Offshore oil and gas jobs are varied and high paying, with an average industry wage of $69,650, or 29% higher than the national average. Every U.S. state has jobs and investments tied to the U.S. Gulf of Mexico oil and gas industry.

An average deepwater project produces about $3 billion in total direct wages. Direct employment associated with a modern deepwater project development averages over 1,435 jobs across the project's 30-year lifecycle. Indirect and induced employment is projected to account for an average of over 2,200 additional jobs.

While employment during the first two years of a project's lifecycle is estimated at only an average of 880 jobs, during the most active years of the project employment impacts peak at nearly 14,400 jobs. During normal operations, total supported employment is projected at around 1,900 jobs. While, these numbers are associated with just one project, the Gulf of Mexico is illustrated by dozens of such projects and an investment horizon that could span several decades.

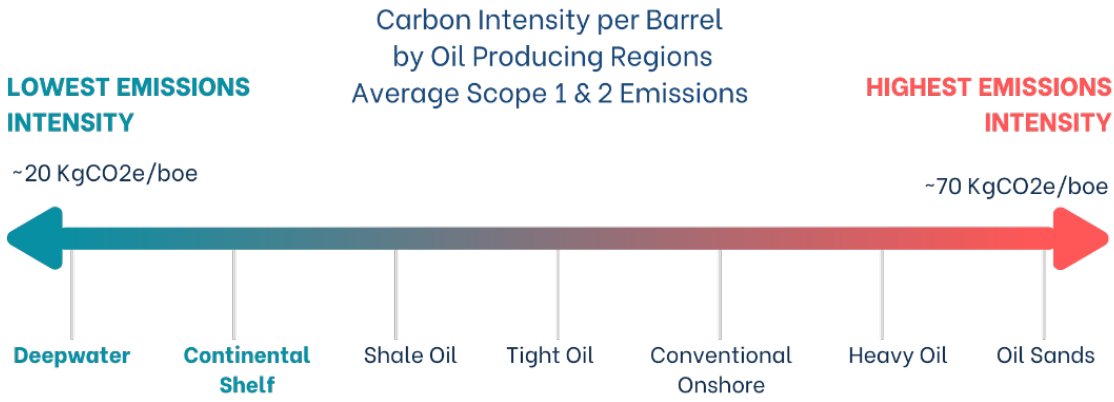
The study also covered the economic impacts of a shallow water project, which results in, on average, $16.2 million in annual direct wages, 230 direct jobs supported annually, 390 indirect and induced jobs supported annually, and the same high average annual wage of $69,650. BSEE reported in 2019 that there were more than 900 producing platforms in the shallow water of the Gulf of Mexico.[58]

Eliminating or restricting offshore oil and gas leasing would destroy vast numbers of jobs and severely disrupt the lives of Americans who depend upon offshore oil and gas development for their livelihoods. The offshore industry provides jobs to Americans of all walks of life in communities throughout the Gulf Coast and the country. Our industry includes companies owned and managed by women, African Americans, Latinos, Native Americans, and veterans. Offshore leasing will continue on a global scale over the coming decades. The offshore oil and gas industry further provides new workers with the knowledge, skills, and abilities that will be essential for not only oil and gas projects, but also for renewable energy development. A robust U.S. offshore leasing program and the finalization of a program that maintains the ten Gulf of Mexico lease sales and the Cook Inlet lease sale is the pathway to maintaining and building high-paying U.S. jobs and will keep alive avenues of upward economic mobility that would not otherwise exist.

[58] https://www.bsee.gov/sites/bsee.gov/files/reports/shallow-water-report-01.pdf

OFFSHORE LEASING PROVIDES AMONG THE LOWEST CARBON BARRELS IN THE WORLD, WITH A COMMITMENT TO SAFETY AND ENVIRONMENTAL PERFORMANCE

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 regions[59]. 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 production[60].



Source: Wood Mackenzie

The region is also a leader for methane release reductions. This is in large part because methane releases are closely regulated offshore. Volumes of gas, of which methane is a primary component, to be flared or vented from offshore facilities are tightly regulated under the provisions of 30 CFR 250 Subpart K. Over the past few decades, operators have moved away from using natural gas driven pneumatic devices to instrument air, eliminating the methane emissions from operation of such devices. Furthermore, gas detection systems are generally deployed on facilities, allowing operators to identify and address methane gas leaks, further reducing methane emissions from offshore facilities.

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.[61] EPA data also shows

[59] Motiwala, and Ismail, "Statistical Study of Carbon Intensities in the GOM and PB," ChemRxiv, April 13, 2020.
[60] Director Scott Angelle, BSEE Director, BSEE Presentation to the Deepwater Technical Symposium, November 13, 2020.
[61] https://www.eia.gov/dnav/ng/ng_prod_sum_a_EPG0_VGV_mmcf_a.htm

methane emissions from offshore oil and gas production accounted for less than one percent of total nationwide methane emissions in 2019.[62]

In short, the U.S. and 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.

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."[63]

Recent research from multiple sources continues to validate the low carbon benefits of U.S. Gulf of Mexico oil leasing and production[64]:

The Breakthrough Institute:

The Proposed Program raises the question about net zero implications. However, in any reasonable scenario, similar to the above discussion, oil and natural gas demand is projected to account for a significant portion of the world's energy portfolio for the coming decades. The Breakthrough Institute, a global research center that identifies and promotes technological solutions to environmental and human development challenges, recently examined the need for continued investment in greenfield oil and gas projects in the United States even in the context of aggressive decarbonization scenarios that aim to meet ambitious climate objectives.

In the report, "Oil and Gas Assets at Risk, *How will clean energy's rise impact oil and gas communities in the United States amidst shrinking fossil fuel demand?",*[65] authored by Rystad Energy, Dr. Zeke Hausfather, Mark Boling, and Peter Liu, the Institute finds "Despite

[62] Draft 2021 Greenhouse Gas Inventory

[63] 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.

[64] 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.

[65] https://thebreakthrough.org/articles/oil-and-gas-assets-at-risk-impacts-of-declining-fossil-production-in-climate-scenarios-in-the-us

potentially significant declines in global oil and gas demand across the climate scenarios by 2050, our findings clearly indicate that investment in new oil and gas fields may still be necessary to meet future demand for oil and gas in all three of the climate change mitigation scenarios."

The authors considered four scenarios, including the Sustainable Development Scenario (SDS) of the International Energy Agency, which is aligned with the Paris Agreement goals of keeping warming well below 2° Celsius. The report includes key conclusions:

- "Growing economies tend to increase their energy demand especially for the transportation of goods from producers to consumers. Petroleum products such as diesel and gasoline are the fuels that keep the cargo ships, aircraft, and trucks that underlie supply chains operating smoothly."
- " [A]pproximately 10 million bbl/d of oil production from new fields is needed between 2030 and 2050 in order to meet global oil demand in SDS, the most ambitious climate scenario…. [A]dditional investment in new gas production will be required in the ambitious SDS scenario as well."
- "New investment in oil and gas fields is likely to occur throughout the world, driven primarily by economic competitiveness and proximity to demand centers of each field. In the Rystad modeling, substantial greenfield investment occurs in all of the major producing regions in the world to 2050, including the United States."
- "[N]ew investment could be required in greenfield oil and gas production, including substantial new greenfield production in the United States, in order to meet future demand. Political initiatives to entirely ban oil and gas production or prevent investment may therefore be unrealistic or uneconomic."
- "The total greenhouse gas impact of oil varies quite substantially across the world based on the source and method of production…."
- "Our field-level economic analysis demonstrates that US oil and gas production is relatively low carbon and, therefore, would be minimally impacted by carbon pricing in absolute terms relative to production in other regions[]. In particular, US oil is the "cleanest" on average in the world, although not the cheapest…."
- "This finding has implications for domestic US oil and gas policy. To reduce the marginal emissions of oil and gas production, while ensuring security of supply for the United States and its allies, policy makers should avoid penalizing or preventing US production exclusively. Rather, policies that promote more aggressive emissions reductions for US oil and gas production could also seek to displace higher-emitting products from other major regions of production, thus minimizing the climate impact of remaining global oil and gas use in a low-emissions future."[66]

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:

[66] https://thebreakthrough.org/articles/oil-and-gas-assets-at-risk-impacts-of-declining-fossil-production-in-climate-scenarios-in-the-us

> 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."[67]

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 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.[68]

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

[67] https://www.woodmac.com/news/the-challenge-of-negative-emissions/

[68] Brown, Di Fiori, Smith, and Yanosek, "Deepwater Gulf of Mexico's role during the energy transition," McKinsey, September 2022, at pages 3-4.

new supply, global emissions would increase by 50 million to 100 million metric tons of CO_2e through 2040.[69]

McKinsey also points out other significant, adverse consequences if America moves away from deepwater Gulf of Mexico oil production, "A shift in production from the Gulf of Mexico to other basins could also have broader implications for the U.S. economy, including the loss of more than 100,000 jobs and a $30 billion to $40 billion reduction in federal government revenue from reduced royalties and lease-sale proceeds."[70]

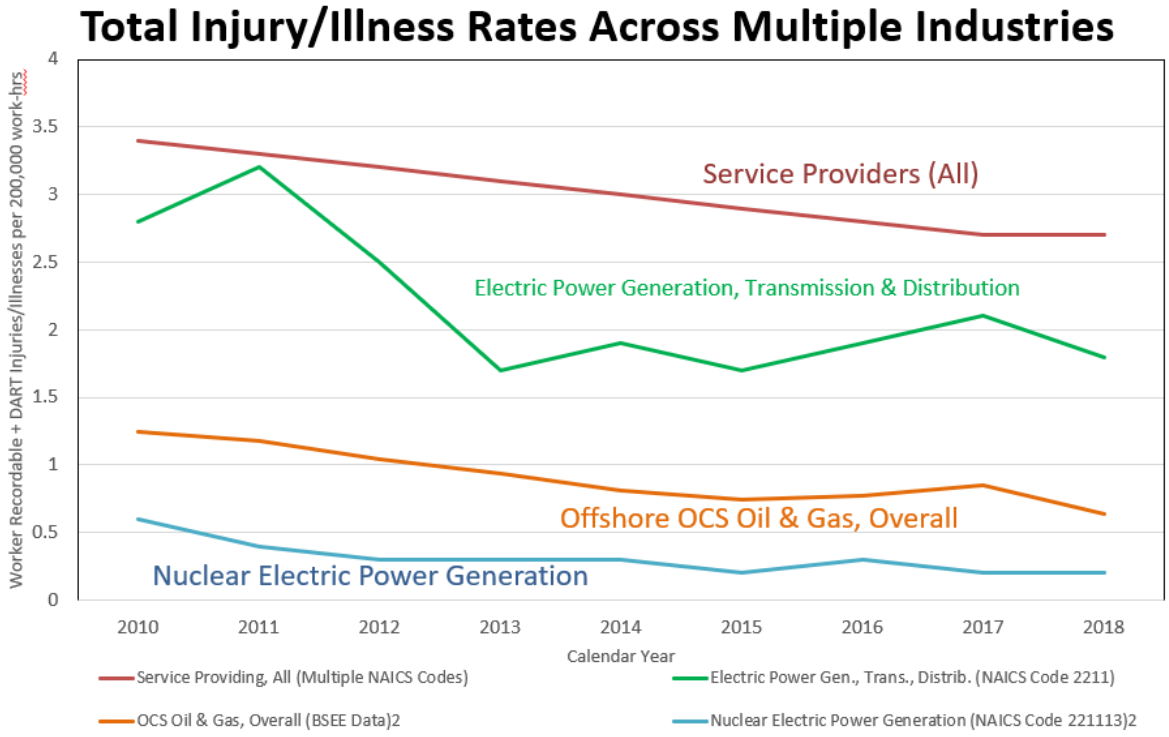
Offshore energy is a true story of accomplishing more with less – creating more energy with less environmental impact. Offshore production platforms are incredible edifices of continuously evolving technology that allow enormous amounts of energy to be produced through a relatively small footprint. Incredibly, 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.[71]

The offshore oil and gas sector operates with an unremitting commitment to safety and environmental protection. BSEE has highlighted key data points in the area of environmental performance:

- Consistently achieved ratio of less than 1.25% flared/vented gas to produced gas; one of the best performing producing provinces in the USA
- Zero incidental marine mammal or sea turtle fatalities from OCS oil and gas exploration and production activities from at least 2017 through November 2020 [the date of the presentation]
- Less oil spilled in 2018 and 2019 form active exploration and production operations on federal offshore leases in at least a quarter century
- 2018 ratio of volume spilled to volume produced: approximately 13 tablespoons in a 660,430 gallon Olympic-sized pool
- 2019 ratio of volume spilled to volume produced: approximately 17 tablespoons in a 660,430 gallon Olympic-sized pool[72]

From a worker safety standpoint, the offshore oil and gas industry has performed with a low recordable injury/illness rate when compared to other industries. The following chart shows the continued low injury/illness trend rate for the sector:

[69] Brown, Di Fiori, Smith, and Yanosek, "Deepwater Gulf of Mexico's role during the energy transition," McKinsey, September 2022, at page 6.
[70] Brown, Di Fiori, Smith, and Yanosek, "Deepwater Gulf of Mexico's role during the energy transition," McKinsey, September 2022, at page 6.
[71] Director Scott Angelle, BSEE Director, BSEE Presentation to the Deepwater Technical Symposium, November 13, 2020.
[72] Director Scott Angelle, BSEE Director, BSEE Presentation to the Deepwater Technical Symposium, November 13, 2020.



Inarguably, any injury is one too many, and the industry continues to work collaboratively in safety programs and with Interior and other key agencies in a continuous effort to identify and mitigate against risks.

Coupling the safety performance of the sector with the Biden Administration's clear focus on environmental protection, environmental justice, and the need to meet concrete climate goals, it is evident that the Gulf of Mexico should remain a region of choice for U.S. oil and gas production.

OFFSHORE LEASING IS CHARACTERIZED BY INNOVATION AND ADVANCED TECHNOLOGIES

America's offshore energy sector employs technologies that not long ago were inconceivable. Today, satellites provide real-time imaging and communications support for offshore oil and gas platforms. On the seafloor, subsea autonomous robots are monitoring production and equipment health, providing real-time data to engineering experts on the offshore platforms as well as in onshore facilities that connect experts from around the world to enable the best operational decisions to be made. Remote operations and automation have eliminated the need for large offshore crews for certain activities, which not only cuts down on trips to and from the assets but improves safety for offshore workers.

Machine learning (ML) and artificial intelligence (AI) are revolutionizing the industry's decision-making abilities. Automated sensing and inspection allow companies to capture enormous amounts of data that provide considerably more insight into operations. With improved knowledge of the activities underway, workers are far less likely to be injured.

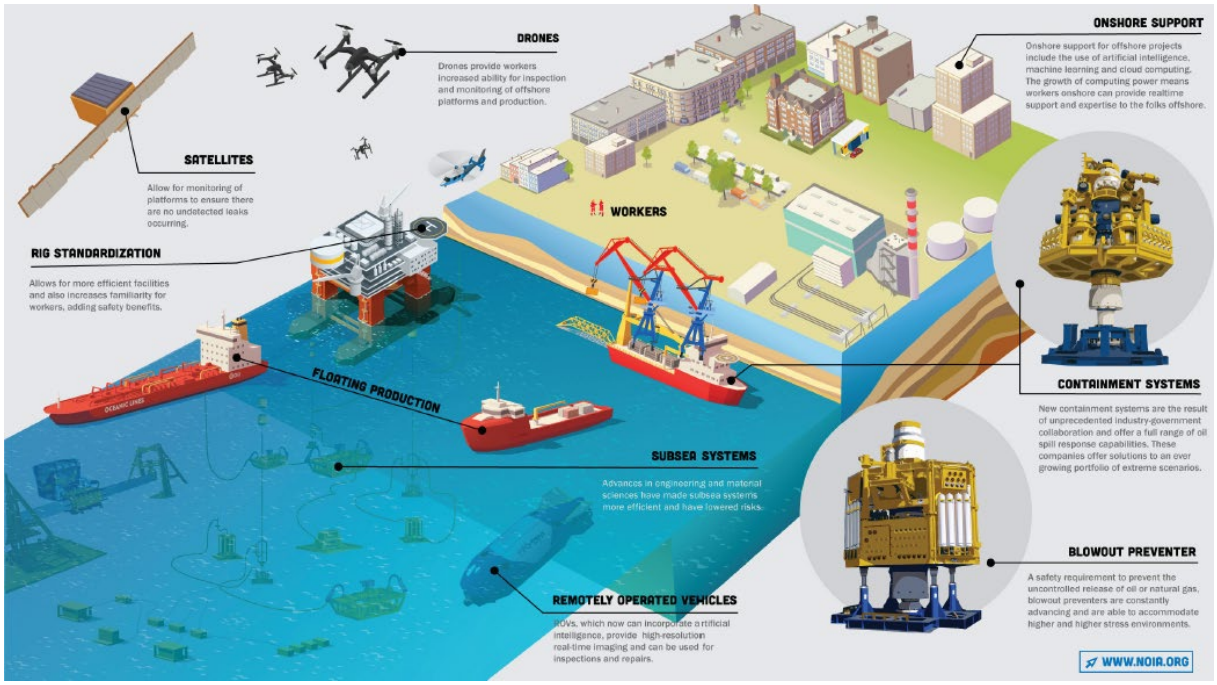
ML enables complex simulations using predictive data to discover hidden patterns. Paired with AI, ML lets companies test for potential negative impacts of operations and gauge the environmental risk of a new project before plans are finalized. And as development progresses, AI incorporates lessons learned to streamline informed decision-making.

Technology advances are shrinking an already small offshore footprint. The U.S. offshore industry is producing increasingly more energy without appreciably expanding the real estate required for operations, which preserves the U.S. Gulf of Mexico's performance as a low-emissions basin.

Continued access to the Gulf of Mexico is essential if the impact of operations on the environment is to be improved. Without regular lease sales that support sustained investment – which is funding remarkable real-world technology research, development, and deployment – money would be directed to more active basins outside the United States. Once these investments leave, it is unlikely that they and the energy innovation they enable would return.

Offshore production is the energy anchor the world needs. Multi-billion-dollar offshore projects produce massive amounts of oil and natural gas, and advances in technology are enabling offshore fields to produce more, cleaner barrels for even longer. Seismic technology and better and smarter subsea tiebacks and other infrastructure open the door to a new era of productivity and efficiency, all while continuing to improve environmental performance.

The graphic below shows some of the technology used in the offshore oil and gas sector to promote safety, environmental protection, emissions reductions, reliability, and efficiency:



OFFSHORE FACILITIES CREATE AND SUPPORT FLOURISHING MARINE ECOSYSTEMS

From the moment an offshore platform is installed, it begins its transformation into a flourishing marine ecosystem. BSEE states, "A typical eight-leg structure provides a home for 12,000 to14,000 fish, according to a study by the Coastal Marine Institute. A typical four-leg structure provides two to three acres of habitat for hundreds of marine species."[73]

Concerns raised by fishermen, divers, and coastal states about potential damage to marine life should offshore structures that had developed into marine ecosystems be removed led to the Rigs to Reefs program, which was formalized by Congress as the National Fishing Enhancement Act in 1984. This act supports the development of artificial reefs and establishes a permitting program for formally converting offshore facilities into artificial reefs.

According to BSEE, the Rigs to Reefs program provides the following benefits[74]:

- For the environment, repurposing obsolete structures saves fuel emissions that otherwise would be expended transporting and disposing of the structure. It also enriches the marine life in the area.
- For oil and gas companies, repurposing obsolete structures saves them the costs of removing, transporting, and disposing of them onshore. BSEE regulations require that, within one year of a lease's expiration, the obsolete structure must be removed.
- For states, the artificial reefs attract marine life that enhance fisheries and contribute to the economy by attracting recreational and commercial fishing and diving.
- For divers and recreational and commercial fishers, artificial reefs create a rich diversity of marine life.
- For marine species, the artificial reefs provide habitat, shelter, food, and other necessary elements for biodiversity and a productive ocean.

Isabelle Gerettsen, of the BBC, reported on artificial reefs in January 2021:

> Offshore rigs are **among the most productive fish habitats in the world**, according to marine biologist Milton Love who has spent 20 years studying fish populations around oil and gas platforms in California. They provide marine wildlife with food, shelter from predators and a safe breeding ground.
>
> For some species, the rigs are even better nurseries than natural reefs, says Love. The towering pylons are the perfect spawning grounds for tiny fish larvae. "A lot of them are just drifting," says Love. "They want to settle." The 500 ft (150m) high underwater structures provide an opportunity for just that.
>
> One of the big beneficiaries is rockfish, stocks of which have been heavily depleted due to overfishing along the US West Coast. These fish are found in abundance

[73] https://www.bsee.gov/what-we-do/environmental-compliance/environmental-programs/rigs-to-reefs
[74] https://www.bsee.gov/what-we-do/environmental-compliance/environmental-programs/rigs-to-reefs

> around oil platforms. For instance, the platforms have helped **revive the critically endangered bocaccio rockfish**. "We've found a very high density of young bocaccio at platforms, around 400,000 at six platforms. We didn't see that at natural reefs," says Love, adding that the number of juvenile bocaccio found at rigs was enough to boost the adult stock of the Pacific Coast population by around 3%.[75]

[Emphasis in original publication.]

According to a study conducted by Love and others and published in the Proceedings of the National Academy of Sciences, "Oil and gas platforms off the coast of California have the highest secondary fish production per unit of area of seafloor of any marine habitat that has been studied, about an order of magnitude higher than fish communities from other marine ecosystems."[76]

As of year-end 2021, more than 570 offshore facilities had been reefed in the Gulf of Mexico. Research continues to demonstrate that offshore artificial reefs develop into among the most flourishing marine ecosystems.

OFFSHORE OPERATORS ADHERE TO A STRONG SYSTEM OF SAFETY AND ENVIRONMENTAL PROTECTION

America's offshore oil and natural gas industry is characterized by the continued advancement of technology and systems integrity, the application of extensive industry technical standards, and a robust regulatory regime. The industry continues to develop and improve on technologies to prevent environmental incidents, examining everything from the materials used in offshore operations, to the development of software and control systems to manage operations, to the development, production, and deployment of modern drillships and production facilities that bring energy to market, to the design and manufacture of blowout prevention systems, subsea safety valves, and other innovative safety equipment.

This ongoing development and improvement of industry standards promotes reliability and safety in offshore operations through the use of proven engineering practices. The American Petroleum Institute (API) publishes industry technical standards under a process accredited by the American National Standards Institute. API standards are regularly reviewed to ensure they remain current and appropriate. Standards are developed in an open and transparent process that includes subject matter experts from academia, government, and industry. API standards are the most widely cited oil industry standards by federal, state, and international regulators.

API has more than 200 exploration and production standards that address offshore operations, covering everything from subsea safety valves to comprehensive guidelines for offshore safety programs, and an estimated 100 such documents have been incorporated into federal

[75] Gerretsen, Isabelle, "As offshore oil and gas platforms come to the end of their working lives, the remarkable ecosystems beneath the waves come into their own," January 26, 2021.
[76] Claisse, Pindell, et. al. "Oil platforms off California are among the most productive marine fish habitats globally." Proceedings of the National Academy of Sciences. October 28, 2014.

regulations. Oil and gas operators on the OCS are subject to myriad regulatory requirements, including more than two dozen statutory authorities and more than 80 Code of Federal Regulation parts implemented pursuant to those statutes. In addition, more than two dozen significant approvals and permits are required for OCS operations.

Through BSEE and its predecessor agencies, the government has significantly changed regulatory requirements applicable to offshore oil and natural gas operations. Companies must implement safety and environmental management systems (SEMS), and audits must be completed by independent third parties. BSEE regulations include extensive requirements for well design and integrity and blowout preventer and control systems. Under the current drilling safety provisions, BSEE requires, among other things: identification of the mechanical barriers and cementing practices that will be used; independent, third-party verification that the blowout prevention equipment is designed for the specific equipment on the rig and for the specific well design; independent, third-party verification that the blowout prevention equipment will operate in the conditions in which it will be used; a certification signed by a registered professional engineer that the casing and cementing design is appropriate for the purpose for which it is intended under the expected conditions; and for wells that use subsea blowout prevention equipment, the inclusion of two independent barriers, including one mechanical barrier, for each annular flow path. There also are extensive requirements for the maintenance, testing, and inspection of blowout prevention equipment. In addition, the Coast Guard, which has regulatory authority for marine vessels utilized in offshore oil and natural gas operations, has also taken extensive regulatory action to advance safety in offshore operations.

Another significant achievement of the U.S. offshore oil and natural gas industry is the creation of well intervention and containment consortia that were founded in 2010 to provide containment technology and response capabilities for the unique challenges of capping a well releasing oil thousands of feet below the water's surface. These groups, which include MWCC and HWCG, maintain rapidly deployable systems designed to stem the uncontrolled flow of hydrocarbons from a subsea well and provide training for member companies on system installation and operation.

BSEE requires companies to demonstrate they have staff resources and access to equipment to deploy systems to cap a well and capture uncontrolled hydrocarbons. Companies prove their compliance with this requirement through a contract with or membership in MWCC or HWCG. BSEE has also instituted new requirements for determining the worst-case blowout discharge and the associated demonstration of capability to effectively respond to such an event. On its part, the industry has enhanced its ability to respond to a potential offshore environmental incident through improved oil spill response planning and the increased availability of spill response tools such as dispersants, in-situ burning capabilities, mechanical recovery, and shoreline protection.

To ensure these requirements are being met, BSEE implements an active and ongoing system of oversight and inspection. Data from 2019 provides a snapshot of the strong oversight in place:

BSEE Inspections: 2019

- 1,665 total number of OCS facilities inspected
- 126 BSEE inspectors -- Based in Alaska, California, Louisiana, and Texas
- 12,489 total number of inspections
- 14 inspection categories, including production operations, well operations, environmental, pipelines and meters
- 694,093 miles flown in support of inspections

Inspectors conducted performance-based risk inspections on:

- 57 OCS facilities, leading to
    - 2 safety alerts
    - 20 recommendations[77]

Interior confirmed the strength of its regulatory oversight system over offshore oil and gas operations in its record of decision for Lease Sale 257. The decision, signed by Principal Deputy Assistant Secretary for Land and Mineral Management Laura Daniel-Davis on August 31, 2021, concluded:

> Pursuant to my authority to exercise the delegable functions and duties of the Assistant Secretary for Lands and Mineral Management, I have concluded that holding GOM region-wide oil and gas Lease Sale 257, as described in Alternative A of the 2018 GOM Supplemental EIS, meets the purpose of and need for the proposed action, balances regional and national policy considerations, and includes appropriate measures to minimize potential environmental and socioeconomic impacts. I have also concluded that GOM Lease Sale 257, as described in this ROD and in the forthcoming Final Notice of Sale, is subject to adequate environmental safeguards and is consistent with the maintenance of competition and the meeting of national energy needs….
>
> To minimize the environmental impacts that could occur from OCS oil- and gas-related activities following a lease sale, BOEM imposes mitigation measures that have proven effective in the past in avoiding or reducing impacts. The mitigation measures that I am adopting in the form of lease stipulations for this lease sale are described below in Section 5. While offshore exploration and development cannot be made risk free, OCS oil- and gas-related activities can be conducted safely and responsibly with strong regulatory oversight and appropriate measures to protect human safety and the environment. Since the *Deepwater Horizon* explosion, oil spill, and response, BOEM and the Bureau of Safety and Environmental Enforcement (BSEE) have raised standards for offshore drilling safety and environmental protection to reduce the risk of oil spills and their severity, and have improved the Federal Government's and industry's ability to respond in the unlikely occurrence of another large oil spill….
>
> The decision to hold Lease Sale 257 recognizes the role that GOM oil and gas resources play in addressing the Nation's demand for domestic energy sources and fosters economic benefits, including employment, labor income, and tax revenues, which are highest in Gulf Coast States and also distributed widely across the United

[77] Director Scott Angelle, BSEE Director, BSEE Presentation to the Deepwater Technical Symposium, November 13, 2020.

States. Revenues from offshore oil and gas lease sales support national conservation programs and coastal resiliency for applicable coastal states and political subdivisions under the Gulf of Mexico Energy Security Act of 2006.[78]

Interior's unequivocal conclusion about the efficacy of the environmental protections provided through its regulatory regime provides direct support for a robust leasing program, as Interior itself has confirmed that the safeguards built into the regulations mitigate against potential impacts on the marine, coastal, and human environments.

Hydrocarbon developments on the U.S. OCS are held to exceptionally high standards for operations by some of the most robust regulations, oversight, and enforcement in the world. These provide assurances for safe, environmentally responsible operations, establishing a case for perpetuating a leasing program for the development and production of resources in the United States, where stringent requirements for operation are enforced and where responsible development continues to drive down the carbon footprint of operations.

OFFSHORE LEASING GENERATES TREMENDOUS VALUE FOR TAXPAYERS, INCLUDING FUNDING FOR THE LAND & WATER CONSERVATION FUND, THE OUTDOOR RECREATION LEGACY PARTNERSHIP PROGRAM, AND COASTAL RESILIENCY AND RESTORATION

The leasing and production of Gulf of Mexico offshore resources generates multiple revenue streams. The first is the bonus bid, paid up front to the U.S. government by operators that acquire a federal oil and gas lease. The bonus bid is paid without any knowledge of what resources might be discovered and is retained by the federal government regardless of whether oil and gas are produced from the lease. The second revenue stream comes from annual rental payments tendered to hold the lease until it produces or expires. This revenue is paid to the federal government while companies work through internal assessments and move through the robust permitting process overseen by the DOI. The final revenue source is the royalty payment made when energy resources are produced in federal waters, at which point companies extracting those resources are required to pay the federal government—this is in recognition of the fact that resources on public lands and waters are a public resource.[79] Royalty rates have increased over time for federal leases in the Gulf of Mexico. In 2008, the royalty rate was increased to 18.75 percent for all water depths. In 2017, to encourage continued interest in the more mature shallow waters, the royalty rate for newly acquired shallow water leases was decreased from 18.75 percent to 12.5 percent. Since that time, however, 84 percent of the leases acquired at OCS lease sales have been in deepwater regions that are subject to the higher 18.75 percent royalty rate.[80]

Critically, the significant payments brought in by offshore oil and gas payments help fund a wide range of state and federal programs, namely around conservation and park maintenance.

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[78] https://www.boem.gov/sites/default/files/documents/oil-gas-energy/GOM-LS-257.pdf

[79] This discussion does not include taxes paid to federal, state, and local governments, which accounts for billions of dollars in additional funding.

[80] https://revenuedata.doi.gov/how-it-works/revenues/#oil-gas-rates

Disbursements from offshore oil and gas in fiscal years 2016 through 2019 were enormous, reaching almost $5 billion in 2019:[81]

Recipient	2016	2017	2018	↓ 2019
U.S. Treasury	$1,865,028,729	$1,748,637,164	$2,789,421,771	$3,826,926,987
Land & Water Conser...	$883,627,823	$891,828,225	$893,887,297	$877,772,576
Historic Preservation ...	$0	$150,000,000	$150,000,000	$150,000,000
Other	$158,644,486	$122,238,329	$116,875,635	$110,056,157
All recipients	$2,907,301,038	$2,912,703,718	$3,950,184,703	$4,964,755,720

These funds go not only to the federal Land and Water Conservation Fund, but also to state governments along the Gulf Coast, as noted in a recent Congressional Research Service report on the topic that includes this related chart:[82]

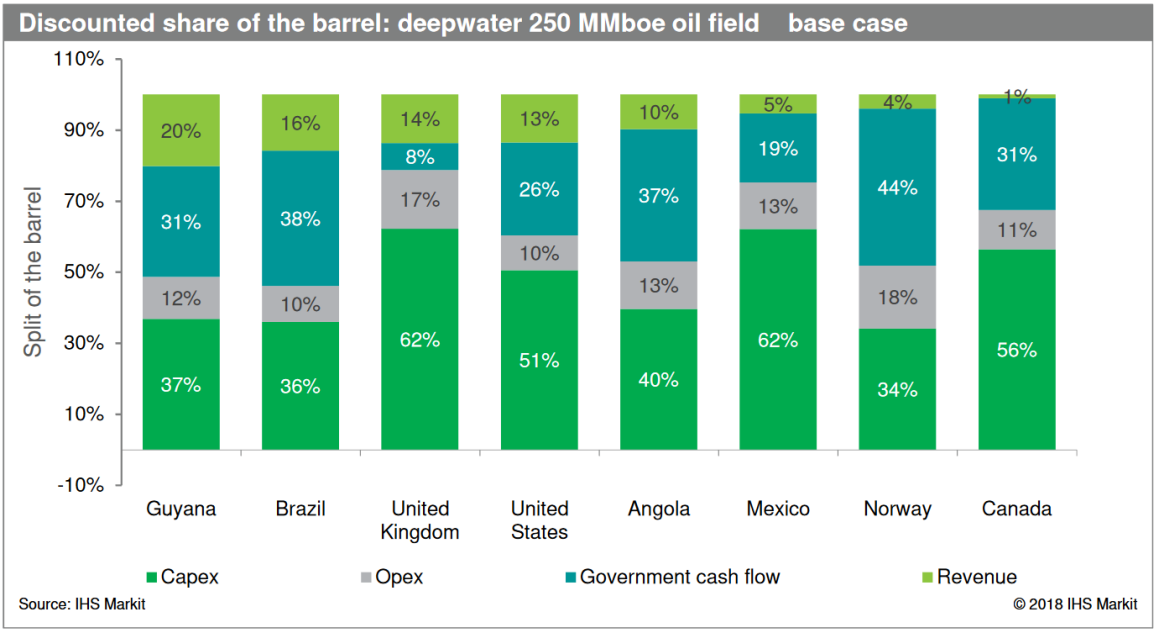
Table 3. GOMESA Distributions to States/CPSs and the LWCF, FY2009-FY2019
($ millions)

Year of Distribution[a]	Alabama[b]	Louisiana[b]	Mississippi[b]	Texas[b]	*Total State Revenue*	LWCF State Program[c]	Total Revenue Shared
FY2009[d]	7.7	7.9	6.9	2.7	***25.2***	8.4	**33.7**
FY2010	0.8	0.9	0.7	0.3	***2.7***	0.9	**3.6**
FY2011	0.3	0.3	0.2	0.1	***0.9***	0.3	**1.2**
FY2012	0.1	0.1	0.1	<0.1	***0.3***	0.1	**0.4**
FY2013	0.1	0.1	0.1	<0.1	***0.3***	0.1	**0.4**
FY2014	1.3	1.4	1.2	0.5	***4.3***	1.4	**5.8**
FY2015	0.7	0.8	0.7	0.3	***2.4***	0.8	**3.3**
FY2016	0.1	0.1	0.1	<0.1	***0.3***	0.1	**0.4**
FY2017	0.3	0.3	0.3	0.1	***1.0***	0.3	**1.3**
FY2018	26.8	82.8	27.8	50.6	***188.0***	62.6	**250.6**
FY2019	30.6	94.7	31.7	57.9	***214.9***	71.6 (est.)	**286.6 (est.)**
Total	**68.6**	**189.5**	**69.6**	**112.6**	***440.4***	**146.7 (est.)**	**587.0 (est.)**

These revenues are important today and will continue to be a critically important piece of the energy and economic story in the United States; however, money from the leasing program will only be generated if continued access is provided and energy production is attractive enough to encourage investment.

At present, domestic energy production from federal waters is costly both in terms of capital expenditure and the required payments to the government in the form of taxes, lease bids, bonus bids, rent, and royalties. In fact, analysis conducted by IHS Markit[83] in 2018 found that revenue from deepwater production going to companies producing energy in the Gulf of Mexico is lower than many peer—and competitor—nations, coming up roughly in a middling position.

[81] https://revenuedata.doi.gov/query-data/?dataType=Revenue
[82] https://crsreports.congress.gov/product/pdf/R/R46195
[83] https://www.boem.gov/sites/default/files/oil-and-gas-energy-program/Energy-Economics/Fair-Market-Value/2018-GOM-International-Comparison.pdf



Historically, the offshore oil and gas industry has been an important revenue generator for federal, state, and local governments. Between 2000 and 2018, more than $120 billion in high bids, royalties and rents were paid to government entities[84]. A portion of these revenues flow into key conservation programs, such as the Land & Water Conservation Fund (LWCF), which is funded entirely by offshore oil and gas production, and beginning in 2021, certain provisions established in the recent Great American Outdoors Acts for national park maintenance.

LWCF provides recreational opportunities, preserves ecosystem benefits for local communities, and enables public access to outdoor areas in urban regions. One program – the Outdoor Recreation Legacy Partnership Program, which is funded through the National Park Service – allocates funds to build new parks and improve existing ones in economically disadvantaged urban areas throughout the country. More than $28 million has been distributed to approximately 50 disadvantaged communities since the creation of the program by Congress six years ago. The Outdoor Recreation Legacy Partnership Program and programs like it have created safe, healthy outdoor recreation spaces in Atlanta, Milwaukee and Newark and other cities across the United States.

The National Park Service award of a $750,000 grant to Philadelphia Parks and Recreation to revitalize Mifflin Square Park is one of many examples of how revenue that comes directly from offshore oil and gas operations provides healthy outdoor spaces for inner city residents. Funded through the Outdoor Recreation Legacy Partnership Program, the rejuvenated Southeast Philadelphia park provides a neighborhood of more than 13,500 people an exceptional new playground and space for community gatherings, recreation, and athletics.

[84] https://revenuedata.doi.gov/explore/?dataType=Revenue&location=NF&mapLevel=State&offshoreRegions=true&period=Fiscal%20Year&year=2019

Jesse Allen Park in Newark, N.J., is another example. It is the second largest city-owned park and is surrounded by several schools and youth facilities, including a popular Boys & Girls Club facility. Commenting at the opening of this park, Newark Councilwoman Gayle Chaneyfield Jenkins said, "As we continue to deal with the burden of crime in our community, open space and recreation have always been a great equalizer and protective factor for our children. This is a great day for Newark and an awesome day for the Central Ward.[85]" Offshore oil and gas production thus promotes positive environmental justice benefits by providing the funding to make parks and recreation more readily available to underprivileged neighborhoods.

On July 29, 2022, Interior announced that it will distribute another $192 million as part of this program. According to Interior Secretary Deb Haaland, "The Outdoor Recreation Legacy Partnership program is essential to expand our communities' connections to urban green spaces, where children can play, families can connect, and a love and appreciation for the outdoors can be nurtured. The funding and programmatic changes we are announcing today will allow for us to support bigger ideas and more communities in their pursuit of creating more parks and places to get outside for every American."[86]

These parks provide a community oasis, offering outdoor spaces for the enjoyment of inner-city residents, especially children.

Further, in April 2022, Interior disbursed more than $250 million for coastal conservation and other programs, commenting, "Today's action represents the second-largest disbursement since Interior first began disbursing GOMESA revenues to states and their [coastal political subdivisions (CPS)] in 2009. Since GOMESA's passage, the Interior Department has disbursed over $1.26 billion to the coastal states and their CPS."[87] These are critical revenues for vital climate resiliency and adaptation programs.

Revenues shared with Gulf Coast states through GOMESA are used by state and local governments for a host of vital programs, including wetlands preservation, coastal restoration, flood prevention and hurricane mitigation.[88] GOMESA is used to fund the response of states like Louisiana to climate change.

The enormous benefits enabled by the economic contributions from oil and gas operations will not be possible if leasing is restricted, scaled back, or in the worst-case scenario, eliminated. Without the revenue generated from continued and robust oil and gas production in the Gulf of Mexico, it will be difficult to ensure funding for the conservation and environmental stewardship programs that are so essential to Americans.

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[85] https://www.tapinto.net/towns/newark/sections/central-ward/articles/newark-receives-federal-grant-to-complete-jessie

[86] https://www.doi.gov/pressreleases/interior-department-announces-192-million-create-public-parks-expand-recreation

[87] https://www.doi.gov/pressreleases/interior-department-disburses-over-252-million-gulf-states-supporting-coastal

[88] https://www.boem.gov/oil-gas-energy/energy-economics/gulf-mexico-energy-security-act-gomesa

COMPANIES IN THE OFFSHORE OIL AND GAS SUPPLY CHAIN PLAY A KEY ROLE IN INVESTING IN, SCALING, AND DEPLOYING LOW CARBON SOLUTIONS

There is no linear process for addressing climate change. Achieving our goals requires the advancement of principles of innovation, conservation, efficiency, resiliency, mitigation, and adaptation as part of a systematic approach.

This fact is well understood by the offshore energy industry and has been demonstrated through a track record of innovation and technological advancement that is solving energy challenges, increasing efficiency, and reducing emissions. Not only can we help solve energy and climate problems, we can scale and deploy real-world solutions. Whether it is the buildout of new offshore wind projects, developing CO_2 storage facilities, finding new ways to produce hydrogen, or optimizing logistics and operations to reduce our carbon footprint, the offshore energy industry is at the forefront of empowering energy solutions and emission reductions.

The diverse members of NOIA are committed to innovation, best practices, and deployment of advanced technologies that are central to addressing the climate challenge. The energy transition cannot occur without the oil and gas industry. The offshore oil and gas sector, in particular, has the unique ability and opportunity to innovate and to scale technological solutions that lead to a lower carbon future. Globally and at home, far too many people still do not have functional access to electricity, and that situation will be compounded as energy demand continues to rise.[89] The energy transition must be achieved in a way that increases the access, affordability, and reliability of energy for everyone.

The offshore sector is continuously finding ways to shrink its already small environmental footprint by introducing technologies and innovations that can benefit other sectors as well. Whether it is a traditionally oil-and-gas focused multi-billion dollar company investing in offshore wind equipment manufacturing and building renewable energy incubators, or the deployment of electric remotely operated vehicles (ROVs) that were developed for the oil and gas industry and now being used to monitor offshore wind facilities, or the incorporation of virtual and augmented reality into worker training to reduce risk, the offshore oil and gas industry is driving efficiency and reducing emissions in ways that will strengthen and accelerate the energy transition.

The offshore oil and gas industry helped build the first U.S. offshore wind farm offshore Block Island, Rhode Island, and is involved in other wind projects up and down the Atlantic Coast. Block Island showed that the synergy between offshore oil and gas and wind expedites renewables development. Removing or restricting investment opportunities for the offshore oil and gas sector would eliminate a key source of engineering expertise, not to mention RD&D funding that can find, scale, and deploy the solutions to many of the technical challenges currently associated with decarbonization efforts.

[89] https://www.realclearenergy.org/articles/2019/09/11/no_need_for_energy_poverty_110474.html

In the report, *The Role of Oil and Gas Companies in the Energy Transition*, Robert Johnston, Reed Blakemore, and Randolph Bell acknowledge the importance of oil and gas companies in both supplying traditional fuels and in leading in decarbonization efforts.

> [O]il and gas remain an important part of the energy mix, especially in developing regions. The International Energy Agency's Sustainable Development Scenario (SDS) and the Shell Sky Scenario—both aggressive decarbonization forecasts— show an ongoing, long-term role for oil and gas, even while demand levels are reduced from where they stand today. In the United States, India, and China—the three largest greenhouse gas emitters—natural gas in particular has the potential to remain an integral component of the low carbon energy transition for decades to come, depending on the policy mechanisms and technologies in place.[90]

The authors highlight the proactive approach being taken by oil and gas companies to contribute the emissions reductions efforts:

> Oil and gas companies are responding by looking at where and how they do business and confronting a rethink of business models in a decarbonizing world. These companies have a range of tools when it comes to engaging with decarbonization efforts in ways which allow their participation in the decarbonizing economy. Where energy demand is growing rapidly, oil and gas companies can endeavor to support coal-to-gas switching and investing in infrastructure that enables electrification to meet end user demand and support lower GHG upstream operations. Companies can also focus on using renewables and new technologies not just as a hedge against demand risk or to decarbonize their production, but to leverage their expertise with supply chains and market development to support low carbon energy deployment in the energy transition on-the whole.[91]

Companies across the offshore oil and gas supply chain are making investments and directly participating in decarbonization efforts such as carbon capture and storage, geothermal, hydrogen, and deployment of technologies in operations that reduce emissions. This industry is a key funder of zero- and low-carbon energy development and deployment. The future success of decarbonization efforts depends upon continued revenue generation from companies in the oil and gas sector.

Dan Romito, Consulting Partner at Pickering Energy Partners, believes the role of oil and gas companies is critical to green innovation: "These companies are active sponsors of the green revolution and are responsible for a substantial proportion of *functional* green technology."[92] Romito's conclusion is based upon research conducted by academics from Harvard, the

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[90] Johnston, Blakemore, and Bell, *The Role of Oil and Gas Companies in the Energy Transition,* The Atlantic Council, January 2020, at page 1.

[91] Johnston, Blakemore, and Bell, *The Role of Oil and Gas Companies in the Energy Transition,* The Atlantic Council, January 2020, at page 1.

[92] Romito, *Accelerating the Energy Transition Requires Bridge Building*, Pickering Energy Partners, September 2022 [emphasis in original].

University of Texas, and DePaul University who found that that "oil, gas, and energy-producing firms…are key innovators in the United States' green patent landscape."[93]

The success of a low-carbon future depends on the success of all energy industry sectors. Bringing to bear its long history of innovation and ingenuity, the offshore energy industry is poised to drive the energy transformation and develop and deploy global decarbonization technologies. According to Romito, "The expertise housing decarbonization implementation lies within the fossil fuel industry. Without their participation, the successful execution of the energy transition is more of a pipe dream."[94]

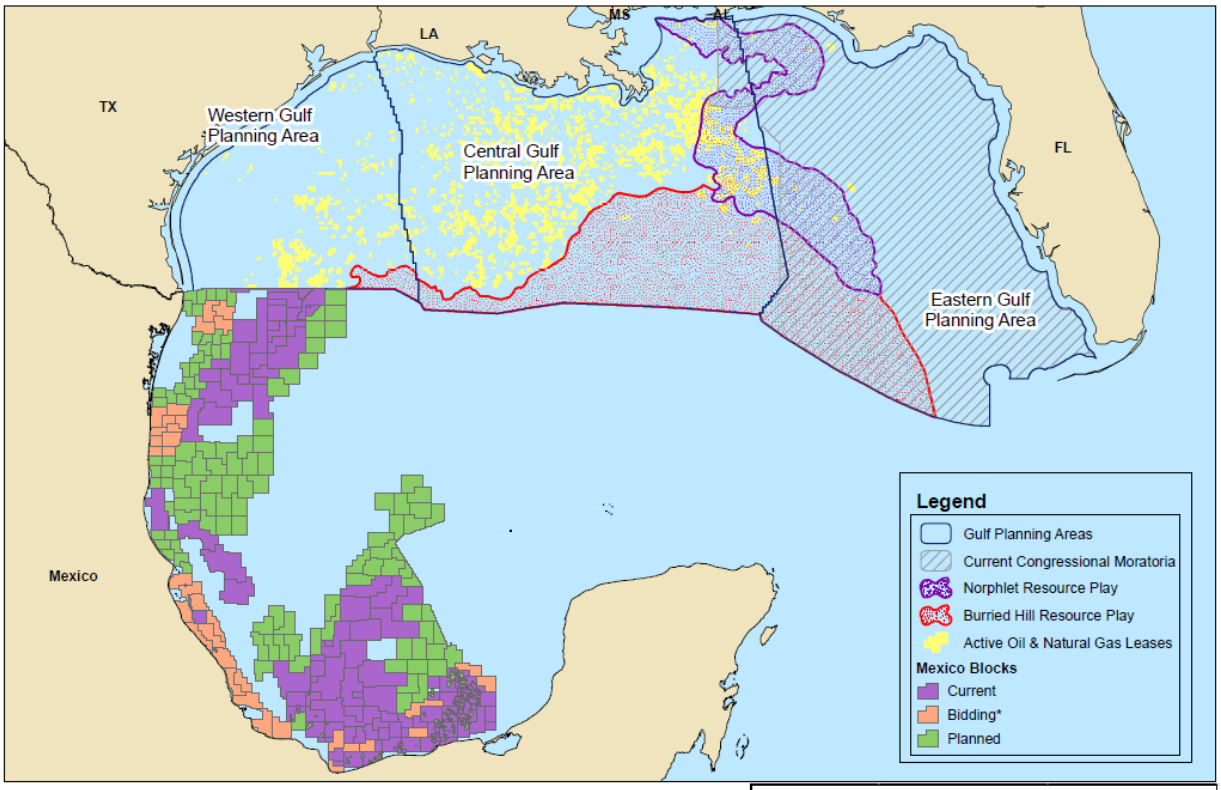
OFFSHORE LEASING INCREASES OUR NATIONAL SECURITY

The U.S. domestic energy policy determines the level of activity in the Gulf of Mexico, but regardless of the amount of exploration and development in U.S. coastal waters, other countries will continue to offer rights to explore, develop, and produce offshore oil and gas. Restricting production in the Gulf of Mexico will not end the production of oil; however, limiting opportunities at home will shift production to countries like Russia, China, and Iran.

As a consequence of limited opportunities in the U.S. Gulf of Mexico, investment already has shifted to the Mexican sector. Mexico is producing oil and gas adjacent to state and federal waters belonging to the United States and is actively bidding out additional acreage. A slowdown or cessation of activities in American waters would constitute a "unilateral disarmament" that would reduce production in one of the safest and most prolific areas of the world and push activity to riskier and less environmentally responsible locations. The map below shows how Mexico has outpaced the U.S. in Gulf of Mexico oil and gas leasing opportunities, surpassing the U.S. in total acres under the lease.

[93] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3718682

[94] Romito, *Accelerating the Energy Transition Requires Bridge Building*, Pickering Energy Partners, September 2022.



Gulf of Mexico Oil and Natural Gas Development and Future Opportunities

Resource Estimates Based on 2016 Assessment Data		
Play	Gas (Tcf) UTTR	Oil (Bbl) UTTR
Norphlet	6.81 - 23.61	1.0 - 4.45
Buried Hill	0.0 - 25.35	0.0 - 9.86

*Bidding opened 9/29/2017 and will close 3/27/2018.

ervice Layer Credits: BOEM 2016 National Assessment of Undiscovered Oil and Gas Resources of the U.S. Outer Continental Shelf. DrillingInfo. MarineCadastre.gov. U.S. Navy. https://www.data.boem.gov/Main/Mapping.aspx

Every barrel of oil that the women and men of the Gulf of Mexico produce is a barrel that our nation and our allies do not have to import from countries like Russia, Iran, or China. Abandoning the Gulf of Mexico reduces American energy security, locks away low-emissions development, and outsources American jobs and investment to pollution havens.

According to Daniel Yergin, Vice Chairman of IHS Markit:

> The extraordinary growth in U.S. oil and gas production is a geopolitical and economic asset for the U.S. that contributes to global energy security. As the domestic oil-and-gas industry continues to rebound from the spring 2020 price collapse caused by the onset of Covid, the U.S. is again the world's top oil producer—almost 20% above the other two largest producers, Saudi Arabia and Russia—and the world's top natural-gas producer. The global oil market, which was drowning in oversupply less than two years ago, has tightened dramatically as the world emerges from Covid shutdowns. That makes the market vulnerable to crisis. Russia's push on Ukraine, a rebounding global economy, major weather events, or a surprise event could send prices soaring.[95]

[95] Yergin, "America Takes Pole Position on Oil and Gas," Wall Street Journal, February 14, 2022.

As a component of national security, domestic energy production should always be a priority. Offshore oil and gas leasing reinforces our energy security and strengthens America. On the other hand, eliminating or reducing opportunities for leasing will lead to energy scarcity, energy insecurity, and a weakening in our national security.

This point was highlighted by Martin Dempsey, the Chairman of the Joint Chiefs of Staff during the Obama Administration, "An energy independent [U.S.] and net exporter of energy as a nation has the potential to change the security environment around the world — notably in Europe and the Middle East."[96] This is eminently apparent today in the wake of Russia's unprovoked invasion of Ukraine and the associated consequences of Russia's using energy as a geopolitical tool.

Our national energy needs require continued supplies of oil and natural gas. Continued offshore oil and gas leasing is the easiest way to ensure that supplies are not disrupted. As such, regularly scheduled leasing sales should be the preferred approach for meeting our national needs.

Conclusion

The U.S. offshore competes with other offshore regions throughout the world and historically has been able to compete effectively under the current leasing and regulatory system. With more than $120 billion flowing to the federal treasury since 2000 to support the LWCF, urban parks, and national parks, and with more than 300,000 jobs supported annually, the U. S. Gulf of Mexico positively contributes to communities while at the same time producing among the lowest carbon barrels in the world.

An unbiased examination of the facts provides little support or justification for making changes to the federal offshore oil and gas leasing program that could jeopardize the tremendous positive benefits provided by offshore production and result in a shift in production to other regions of the world to the detriment of U.S. employment as well as our economic, energy, national and environmental security.

The Washington Post Editorial Board sums up the reason for continuing investment in our offshore oil and gas sector[97]:

> We have long supported opening ***more*** U.S. waters to offshore drilling. As long as the economy requires oil, it must come from somewhere, and better the United States than a country with much weaker environmental oversight. It is arrogant of Americans to benefit from the interconnected global oil market yet insist their shores remain closed.
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> -*Washington Post* Editorial Board, January 18, 2018 (emphasis added).

[96] General Martin Dempsey, Chairman of the Joint Chiefs of Staff, House Subcommittee on Defense Appropriations Hearing, 2014

[97] https://www.washingtonpost.com/opinions/is-ryan-zinke-cynical-or-incompetent/2018/01/24/80055fd0-0146-11e8-8acf-ad2991367d9d_story.html

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 rose dramatically over the past year. 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. Near- and long-term affordability of oil and gas can be promoted through continued offshore oil and gas leasing. We thus urge Interior and BOEM to finalize a robust offshore leasing program for 2023-2028, maintaining the ten proposed lease sales in the Gulf of Mexico and one lease sale in Cook Inlet, Alaska, with no further reductions in leasing opportunities or acreage. Anything short of that will fail to meet the national energy needs of our nation.

Very respectfully,

Erik Milito
President
National Ocean Industries Association

Attachments (available on request):

1. "The Economic Impacts of the Gulf of Mexico Oil and Natural Gas Industry," Energy & Industrial Advisory Partners, May 26, 2020.
2. "The Gulf of Mexico Oil & Gas Project Lifecycle: Building an American Energy & Economic Anchor," Energy & Industrial Advisory Partners, August 12, 2021.
3. "The Economic Impacts of a 5-Year Leasing Program Delay for the Gulf of Mexico Oil and Natural Gas Industry," Energy & Industrial Advisory Partners, March 29, 2022.
4. Brown, Di Fiori, Smith, and Yanosek, "Deepwater Gulf of Mexico's role during the energy transition," McKinsey, September 2022.
5. Motiwala, and Ismail, "Statistical Study of Carbon Intensities in the GOM and PB," *ChemRxiv*, April 13, 2020.
6. Romito, "Accelerating the Energy Transition Requires Bridge Building," Pickering Energy Partners, September 2022.
7. "U.S. OIL AND NATURAL GAS: Providing Energy Security and Supporting Our Quality of Life," U.S. Department of Energy, September 2020.
8. Angelle, BSEE Director, "Results Not Excuses," BSEE Presentation to the Deepwater Technical Symposium, November 13, 2020.