

Joe Dryer
On Behalf of the EnerGeo Alliance
Written Testimony
Before the
U.S. House of Representatives Natural Resources Committee
Subcommittee on Energy and Mineral Resources
“Assessing Domestic Offshore Energy Reserves & Ensuring U.S. Energy Dominance”
March 20, 2024

Chairman Stauber, Ranking Member Ocasio-Cortez, and Members of the Subcommittee:

For the record, my name is Joe Dryer and I am the President & CEO of Fairfield Geotechnologies. I joined Fairfield Geotechnologies in 1997 as Sales Manager for the Systems Division. I have held several leadership positions of increasing responsibility within Fairfield which included Vice President of the Data Licensing Division and Chief Sales Officer. In 2021 I was promoted to President and Chief Executive Officer. Prior to joining Fairfield I worked on various acquisition crews around the globe. I graduated from Texas Tech University and completed the renowned Advanced Management Program at Harvard Business School. Since 2019, I have served on the EnerGeo Alliance Board of Directors working closely with our members, regulators, and other stakeholders around the world to ensure that energy resources are identified and developed in a sustainable manner.

Privately held Fairfield Geotechnologies is a leading provider of high-resolution multi-client seismic data and services in the United States. Combining market-leading subsurface reflectivity and signal imaging techniques with strategic partnerships, Fairfield Geotechnologies delivers a superior solution for developmental exploitation. More than 30 years ago, Fairfield Geotechnologies established a standard for how we operate—a combination of innovative solutions, discipline, and exceptional leadership.

I present this testimony in my role as President & CEO of Fairfield Geotechnologies and as a Board Member of the EnerGeo Alliance. Founded in 1971, EnerGeo is the global trade alliance for the energy geoscience and exploration industry, the intersection where earth science and energy meet. EnerGeo Alliance and its member companies span more than 50 countries, representing onshore and offshore survey operators and acquisition companies, energy data and processing providers, energy companies, equipment and software manufacturers, industry suppliers, service providers, and consultancies. EnerGeo represents the geoscience companies, innovators, and energy developers that are using earth science to discover, develop, and deliver energy, sustainably, to our world. Together, we are Making Energy Possible.

EnerGeo member companies, which operate in the U.S. both onshore and offshore across the Outer Continental Shelf (OCS) and extensively within the Gulf of Mexico (GOM), play an integral role in the successful exploration and development of offshore hydrocarbon, wind and low-carbon solutions such as carbon capture and storage (CCS) resources through the acquisition and processing of geophysical and geological data.

Through reliable science- and data-based regulatory advocacy, credible resources and expertise, and future-focused leadership, EnerGeo Alliance continuously works to develop and promote informed government policies that advance responsible energy exploration, production, and operations. As the U.S. and global energy demand evolves, we believe that all policymakers and energy companies, providing

mainstay, alternative, and low-carbon solutions, should have access to reliable data and analysis to support their forward-moving efforts.

Geoscience Industry & Activities Overview

I appreciate the opportunity to testify before the Subcommittee on Energy and Mineral Resources on *Assessing Domestic Offshore Energy Reserves & Ensuring U.S. Energy Dominance*. As the tip of the spear for nearly all energy sources and lower-carbon solutions, energy geoscience provides invaluable information about the resources beneath us that energy companies and policymakers can use to identify and prioritize high-density, lower-carbon intensive energy sources, locate where offshore wind facilities are best suited for harnessing the energy from wind, prolong the life of existing natural gas and petroleum assets, make it possible to store carbon beneath the surface, and more.

The reality is, no matter the preferred or prioritized energy source, virtually all sources of energy needed to support the world's energy evolution require "eyes" on something going in, out, or through the ground, and that simply cannot happen without the innovation and insight of the energy geoscience industry. Which is why at EnerGeo Alliance, we proudly say, "we are making energy possible."

Seismic and other geoscience surveys have been safely conducted in the U.S. and around the world for over 60 years. These geoscience surveys are the critical first step to better understanding the resource base of the Outer Continental Shelf (OCS) and providing policy makers and regulators with the information they need to make informed decisions about energy development and carbon capture based on the best available data.

There is an increasing need to educate on the criticality of exploration to ensure global access to energy in the future. By 2050, the world population is estimated to increase to almost 9.8 billion¹. Total energy use is expected to increase 34%, with an expected steady growth in mainstay sources of energy and faster growth anticipated in all other sources². In this scenario, exploration will be critical for the energy evolution. While about 5 billion barrels of oil were discovered in 2023, by 2050 we will need to discover 17.56 billion barrels per year to match the global energy demand³.

The economic and technological advances over the last 200 years have transformed how we produce and consume energy. See Figure 1⁴, showing how the global energy mix has evolved since 1800.

Global oil demand has reached new records; 2.2-2.4mbd increase in 2023 to 102mbd, compared to oil supplies only rising by about 1.4-1.5 mbd. Over 108 mbd by 2030. Remarkable departure from scenario IEA laid out in its Roadmap to Net Zero by 2050 roadmap just two years ago where they had oil demand peaking in 2019 at 100 mbd and declining to 75mbd by 2030.

Access to exploration relies on government authorizations, so policymakers' understanding of energy geoscience and exploration as the key energy enablers is imperative to ensuring energy optionality and security and meeting future energy demand.

¹ Source: 2023 Population Data Sheet - <https://www.prb.org/wp-content/uploads/2023/12/2023-World-Population-Data-Sheet-Booklet.pdf>

² Source: EIA International Energy Outlook – October 2023 <https://www.eia.gov/outlooks/ieo/>

³ Source: RystadEnergy UCube; Rystad Energy U.CubeExploration; Rystad Energy research and analysis

⁴ Source: Elements.visualcapitalist.com; Vaclav Smil, BP Statistical Review of World Energy

The only viable process for the U.S. government to understand the country's resource potential is through geoscience surveys conducted by advanced technology companies like those that comprise EnerGeo's membership. According to BOEM's website, regarding resource evaluation, "Every five years BOEM provides a comprehensive assessment of undiscovered oil and gas resources on the OCS. The results are presented as both Undiscovered Technically Recoverable Resources (UTRR) and Undiscovered Economically Recoverable Resources (UERR). The assessment utilizes a geologic play-based approach that incorporates a complete analysis of geologic and petroleum system elements for the UTRR, and an assessment of engineering and economic considerations for the calculation of the UERR. DOI has released an Assessment of Undiscovered Oil and Gas Resources on the US OCS regularly since 1975." This information is not possible and would not be available to policy makers and U.S. citizens without the geoscience industry.

As an example of the usefulness of geoscience data, in 2017 BOEM released a 1.4-billion-pixel map that will help scientists from academia, environmental agencies, and governmental agencies further understand the prolific Gulf of Mexico region. This once-impossible feat was created by using more than 200 individual maps from geophysical companies, all of which are EnerGeo members. The maps cover 135,000 square miles of the Gulf of Mexico with datasets spanning more than 30 years.

The GOM is one of the least emissions-intensive resource plays in the world, second only to Norway. The basin's success and incredible production record is only possible with the innovation of the energy geoscience industry, specifically, seismic surveys. With every new leap in geoscience innovation, energy sources broaden, and energy discoveries & subsequently production significantly increases. EnerGeo members are investing millions in research and innovation, leveraging technology to solve our most complex energy challenges. With each step change in technology, there has been a commensurate increase in the number of discoverable reserves (See Figure 2).

Surveys do not necessarily lead to hydrocarbon development. In fact, surveys determine both areas that are *and are not* likely to have recoverable oil and gas resources, and are imperative to ensure those basins that are developed are done so targeting the highest energy-dense, and least emissions-intensive barrels, and with the lowest environmental footprint. Energy geoscience does not only critically prove barrels are produced with the smallest footprint, but our industry is also committed to ensure our work is conducted with the least emissions possible. In 2022, EnerGeo published "Guidance for Estimating and Reporting Greenhouse Gas (GHG) Emissions", to provide GHG emissions-based guidance and resources for the marine geoscience survey industry. This ensures the appropriate focus on a "transition" to lower emissions, not away from energy when the world needs it most.

Meeting the growing demand for energy that is more accessible, affordable, reliable, and cleaner will require greater collaboration. At EnerGeo Alliance, we are proud of our unique collaborations between industry, scientists, and governments to support energy access. EnerGeo has implemented the Gulf of Mexico Proactive Regulatory Observational Program (GOM-PROP) to provide a self-sustaining structure for the continued successful implementation of, and compliance with, both present and future Incidental Take Regulations (ITR), governing the operation of geoscience surveys in the Gulf of Mexico (GOM). Our industry has also created the Netuno environmental database program, focused on Brazil and recently expanded to cover the Americas, to compile data that has been collected since 2005 in a standardized manner, make it accessible, and transform it into knowledge for stakeholders – including the industry and regulators. Netuno is a virtual portal containing public environmental data, derived from project implementation required as part of the environmental permitting.

Today's advancements in technology, which can pinpoint the most fruitful areas for hydrocarbon potential, siting of wind turbines offshore and locating areas for carbon storage, have contributed to reducing the overall environmental footprint associated with energy exploration. Advances in the

technology we deploy have also helped to decrease operational and safety risks associated with energy development.

Seismic and geoscience surveying is a well understood and safe industry practice, and informed policy decisions regarding offshore energy development can *only* be made with the evaluation provided by modern seismic survey technology. And it is for this very reason that environmental advocacy groups have actively worked to politicize the seismic survey permitting process, under the pretense of alleged harm to marine mammals.

As the Bureau of Ocean Energy Management (BOEM) and the National Marine Fisheries Service (NMFS) have continually stated time and time again—throughout changing political administrations—*to date, there has been no documented scientific evidence of noise from acoustic sources used in seismic activities adversely affecting marine animal populations or coastal communities*⁵. They note that this technology has been used for decades around the world, including in U.S. waters in the Gulf of Mexico and offshore Alaska, with no known detrimental impact to marine life populations or to commercial fishing.

Indeed, more than six decades of worldwide geoscience surveying and scientific research demonstrate that the risk of direct physical injury to marine mammals is extremely low, and there is no scientific evidence demonstrating biologically significant negative impacts on marine life populations. Because survey activities are temporary and transitory, they are the least intrusive way to explore the earth's geology. In the more than 60 years of seismic surveying in the Gulf of Mexico, there has not been a single reported incidence of sound from seismic operations injuring marine life.

The geoscience industry is committed to conducting its operations in an environmentally responsible manner, and utilizes mitigation measures, such as exclusion zones, soft-starts, and protected species observers to further reduce any possibility of potential impacts to marine life. The industry supports a process of developing and implementing effective mitigation measures that are proportionate to the level of potential risk and specific to the local population of marine animals.

The reality is the geoscience industry has a long track record of safe, responsible operations around the world. Unfortunately, the permitting of this activity critical to identifying the nation's energy supplies is too often stalled or impeded by extreme environmental advocacy organizations exploiting existing regulatory and litigation processes.

BOEM Permitting & NMFS Authorization Delays

In the Outer Continental Shelf Lands Act (OCSLA), Congress expressly mandated the “expeditious and orderly development” of the Outer Continental Shelf (OCS) “subject to environmental safeguards.” 43 U.S.C. § 1332(3). Courts have since confirmed that “the expeditious development of OCS resources” is OCSLA’s primary purpose. *California v. Watt*, 668 F.2d 1290, 1316 (D.C. Cir. 1981). Congress enacted OCSLA to “achieve national economic and energy policy goals, assure national security, reduce dependence on foreign sources, and maintain a favorable balance of payments in world trade.” 43 U.S.C. § 1802(1). Congress expressly intended to “make [OCS] resources available to meet the Nation’s energy needs as rapidly as possible.” *Id.* § 1802(2)(A). Geoscience surveying has been and continues to be essential to achieving OCSLA’s requirements because it is the only feasible technology available to accurately image the subsurface of the OCS before a single energy source is developed.

⁵ BOEM stated in its August 22, 2014 Science Note

Offshore geoscience surveys require authorizations from BOEM, pursuant to OCSLA. *See id.* § 1340. There is no requirement for an applicant for an offshore survey permit under OCSLA to obtain an incidental take authorization under the MMPA. However, unlawful “takes” of marine mammals incidental to lawful activities (such as a permitted offshore seismic survey) may nevertheless be subject to MMPA-based penalties. *See* 16 U.S.C. § 1375. Accordingly, many applicants for offshore survey permits from BOEM also request incidental (*i.e.*, unintentional) take authorization under the MMPA from the National Marine Fisheries Service (NMFS) and/or the U.S. Fish and Wildlife Service (FWS).⁶

In this context, it is important to recognize that the permit issued by BOEM authorizes the *seismic survey* and the MMPA authorization narrowly addresses the *incidental take* associated with the seismic survey. NMFS and FWS do not have jurisdiction over the survey; their authority under the MMPA extends only to the authorization of incidental take. Notwithstanding the limited role of FWS and NMFS, MMPA authorizations are often the primary cause of administrative delay in the offshore geoscience survey permitting process.

Specific to BOEM geoscience permitting, EnerGeo members have experienced certain ambiguities and identified areas that may make the permitting process run more efficiently in the following suggestions:

1. Industry finds the timeliness of the permit process for geoscience activities to be open-ended and uncertain. EnerGeo has recommended that BOEM establish a certain timeline for permit review and approval. The timing requirements for drilling permit review and approval is a good example that BOEM should strive to achieve for geoscience permits.
2. Industry has encouraged BOEM to explore the creation of an electronic permit application process. Efficiencies for permit processing and man-hours may be realized through electronic permit applications. Many countries around the world utilize electronic permit application processes. This allows the applicant to monitor the status of the permit process and timely provide any information requests from BOEM. This has been seen to drastically decrease the permit process timeline.
3. Geoscience operations are consistently utilizing the same vessels throughout the offshore U.S. BOEM should take steps to create a catalogue of vessel information and certificates to reduce permitting costs and burden hours.
4. Industry encouraged BOEM to develop a catalogue of equipment used in offshore geoscience activities, including Ocean Bottom Nodes, Ocean Bottom Cables, Streamers, etc. This would reduce the time needed to collect pictures and physical samples of all parts and equipment deployed in the water column. Permit applications could then reference these materials to reduce time spent.

Specific to NMFS MMPA authorization processes, EnerGeo members have experienced extensive delays and note the following particularly problematic areas:

1. IHAs involving offshore oil and gas-related activities are rarely, if ever, issued within the timing requirements of the MMPA. NMFS even states on its website that the IHA permitting process takes at least six to nine months to complete. The process often takes much longer. The MMPA provides no consequences for such delay, nor does it provide any incentives to NMFS and FWS to avoid delay.

⁶ FWS has jurisdiction over polar bears, walrus, sea otters, dugongs, and manatees. NMFS has jurisdiction over all other marine mammals.

2. Because the MMPA contains no timing requirements applicable to ITRs, the regulatory process for the issuance of ITRs often takes years and, in industry's view, is de-prioritized by the agencies because other agency obligations are subject to timing requirements and consequences.
3. The ESA Section 7 consultation process is cumbersome and time-consuming. The Section 7 process is also subject to statutorily mandated deadlines, but those deadlines are routinely ignored by NMFS and FWS without consequence. The Section 7 consultation process is often a significant cause of the delay in the issuance of an authorization under Section 101(a)(5) of the MMPA, even though the substantive standard governing the Section 7 process is *less stringent* than the MMPA's "negligible impact" standard.
4. Another significant source of delay in the issuance of MMPA incidental take authorizations involves the estimation of the number of "takes" that are expected to occur. Because the MMPA's definition of "take" is extraordinarily broad and ambiguous (more so than the ESA's definition of "take"), FWS and NMFS struggle to determine what activities actually cause "take" and, as a result, they apply extremely conservative assumptions to ensure that their "take" estimation modeling encapsulates all conceivable "take" (and more). This process results in estimates that are inaccurate and vastly exaggerate the number of "takes" that will actually occur.
5. The "take" estimation modeling exercises are considerably more complicated and play an unduly important role in the permitting process because the agencies are required to demonstrate that the incidental take authorization will not only have a "negligible impact" on the potentially affected marine mammal stocks but also affect "small numbers" of marine mammals. The term "small numbers" has no biological significance whatsoever to the marine mammal population and is a legal term of art that has notoriously confused courts and regulators alike.
6. All of these regulatory problems and inefficiencies create fertile ground for legal challenges by advocacy groups that will readily file any and all available lawsuits for the sole purpose of impeding and preventing the energy development of the OCS.

When it was enacted in the early 1970s (and subsequently amended), the congressional intent behind the MMPA was cutting-edge and forward-thinking. However, as described above, decades of regulation and litigation have exposed some significant flaws in the MMPA. The primary flaws in the MMPA stem from (i) poorly written statutory language that creates ambiguity and uncertainty in the application of the MMPA's legal standards, and (ii) procedural duplication and inefficiency. These flaws result in agency delays, overly conservative and inaccurate impact analyses, confusion by agencies and courts, and exploitation by environmental advocacy groups. Fixing some of the obvious flaws in the MMPA could result in tangible regulatory improvements that increase efficiency, decrease uncertainty and risk, and ultimately benefit all stakeholders and citizens and the implementing agencies.

The modeling exercises relied upon by BOEM and conducted by NMFS for incidental take regulations and authorizations often use a multiplicative series of conservatively biased assumptions for all uncertain parameter inputs. These assumptions lead to accumulating bias as the cumulative conservative assumptions add up to increasingly unlikely statistical probabilities that are not representative of real-world conditions. Consequently, the results are improbable worst-case scenarios, *not* accurate representations of likely effects.⁷ Using more realistic risk criteria and modeling assumptions, and taking into account standard monitoring and mitigation practices employed by the geoscience industry, the more likely estimate of potential Level A takes is zero or a comparably small number. This more likely estimate is corroborated by the best available information, which includes no observations of any harm to marine mammal populations (in any region) as a result of seismic exploration activities. Importantly, the DC Circuit Court recently held that, "...implementing regulations call for an empirical judgment about what is "likely." The Service's role as an expert is undermined, not furthered,

⁷ A technical critique of the agencies' flawed, overly conservative approach, as reproduced in BOEM's ITR petition for Gulf of Mexico activities, is provided in Attachment B.

when it distorts that scientific judgment by indulging in worst-case scenarios and pessimistic assumptions to benefit a favored side.”⁸, agreeing that agencies shall adhere to the best available science.

Geoscience for Offshore Wind & Carbon Capture and Storage

The energy & geoscience industry is integral to meeting policies of lower carbon economies, including in the U.S. There are now 30 commercial operational CCS facilities worldwide that have a capture capacity of 40 (Million tons per annum), more than 20 have come online in the last 2 years. Over half of these are in North America. An additional 141 facilities are in development or under construction and will provide an additional 112 Mtpa of capture capacity by 2030, but to go “net zero” by 2050, these figures would need to grow 140X!

As these projects are developed it is critical that they are sited, designed, and managed in a manner that ensures and demonstrates the long-term technical and environmental integrity of the storage or sequestration. A vibrant geoscience industry is integral in meeting these lofty goals and well-defined efficient regulatory processes are required by U.S. and other policy makers.

In March 2021, the Biden administration has set an ambitious goal of deploying 30 gigawatts of offshore wind electricity generation by 2030⁹. Further, in April 2023 the President highlighted new steps the United States was taking to meet its ambitious 1.5°C-aligned goal of reducing emissions 50-52 percent in 2030. Noting it would “require responsible deployment of carbon capture, utilization, and storage (CCUS) and carbon dioxide removal (CDR) technologies...CCUS has a critical role to play in decarbonizing the global economy, particularly the industrial sector, where process emissions are more difficult to address¹⁰.” These goals are simply not possible without the geoscience industry and the current regulatory delays and litigation impediments will disallow implementing the vast offshore wind and CCS needed.

Following this ambitious goal, the Administration mandated the Department of Interior to publish CCS regulations by November 2022, a deadline that was missed and is still outstanding. Policymakers should prioritize now the infrastructure required, including ensuring the efficient permitting of geoscience surveys needed for the identification and monitoring of the storage areas.

EnerGeo continues to call on BOEM and the current administration to propose long-overdue regulations for offshore Carbon Capture and Storage (CCS). Further, EnerGeo recently commented on BOEM’s efforts to provide efficiencies in the regulations for development of offshore wind on the U.S. OCS for geoscience permitting. We strongly encourage BOEM to align regulations which currently exist or may be in development, which are specific to certain energy sources or low-carbon solutions; mainstay (gas and oil), alternative, carbon sequestration, marine minerals, and hydrogen, so that geoscience activities are analyzed and authorized under the same metrics.

Regulations should not be used to differentiate between given energy sources when it comes to permitting geoscience activities. Our members execute surveys and use advanced technology to provide

⁸ Maine Lobstermen’s Association v. National Marine Fisheries Service, 70 F.4th 582 (2023) No. 22-5238

⁹ FACT SHEET: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/>

¹⁰ FACT SHEET: President Biden to Catalyze Global Climate Action through the Major Economies Forum on Energy and Climate <https://www.whitehouse.gov/briefing-room/statements-releases/2023/04/20/fact-sheet-president-biden-to-catalyze-global-climate-action-through-the-major-economies-forum-on-energy-and-climate/>

products to energy developers and producers – those activities employ the same general techniques regardless of whether their clients are developing gas and oil or offshore wind, the regulations should not make a distinction either. There is currently estimated 6,300 square miles available in the Lower Miocene of GOM for offshore carbon capture capacity with capability to contain 100s of billions of tons of CO₂ emissions.

The energy geoscience industry has recommended the following to BOEM on development of offshore CCS regulations:

Permitting Certainty

- Defined timelines on approving or denying requested permits.
- The process should not differ in a significant way from existing geoscience permitting processes for hydrocarbons.
- The geoscience industry has a long history of obtaining permits with the expectation that science-based mitigation measures will match the potential impacts from activities.
- The geoscience industry supports a research and evaluation phase, pre-leasing.

Lease Rounds

- Regularly held, predictable and well-defined lease rounds should be held for CCS, if existing hydrocarbon leases will not be available for CCS. Clarity from the agencies is required on how leasing will be conducted for CCS.
- Recognition by BOEM and Federal Agencies of the critical role of existing geoscience data available for licensing and for bidding on CCS – and avoid disclosure of confidential industry intellectual property.
- Lease lengths should be consistent with hydrocarbon leases.

On-Lease

- Once leases have been awarded, or CCS work programs are being developed, requirements for geoscience data to confirm geological stability and for carbon injection should be included.
- Monitoring requirements throughout the lease term will require geoscience activity to confirm safe injection and stability of depleted reservoirs and/or aquifers.

Post-Lease

- Following the expiration of a lease term, continued monitoring of the injection site will be required.
- Liability should be borne by the Federal Government, ie: Plume Leaks. At no time should liability surrounding the sequestration site be placed on geoscience companies providing data to the leaseholders or the government.

Conclusion

By 2050 the world population will increase to 9.8 billion and total energy use is expected to increase by 34 percent. The projected energy mix to meet this demand; 22% natural gas, 20% coal, 28% petroleum and other liquids, 4% nuclear, and 26% alternatives. With the current global energy supply crisis, a growing population and inflation on the rise, citizens around the world will need greater access to reliable and affordable energy, including petroleum and natural gas, as well as alternative energies.

The energy geoscience industry has always been in the business of minimizing the footprint, by pinpointing where the resource is and importantly where it is not, allowing companies and policymakers to identify and prioritize high-density, low-carbon intensive energy sources, closer to existing infrastructure and the end user, locating where offshore wind facilities are best suited for harnessing the energy from wind, prolonging the life of existing natural gas and petroleum assets, and making it possible to store carbon beneath the surface. Geoscience surveys provide the information governments and policymakers need to make informed decisions in the best interest of their citizens regarding accessing

mainstay energy and alternative sources, as well as developing low-carbon strategies. As nations develop and implement their energy evolution goals to make reliable, affordable energy available to their citizens and meet Net Zero Emissions (NZE) policy ambitions, it is important to understand that those goals cannot and will not be realized without the critical data and technology the geoscience industry provides.

At EnerGeo we are advocating to ensure all policymakers and energy companies have access to reliable data and analysis to support their forward-moving efforts.

With an increasing need for energy from all sources, many predict the energy industry is at the start of an “international upcycle.” Where the industry invests now will be influenced by where they have access to insight (data), infrastructure and supportive regulatory and policy structures.

We urge congress to review the MMPA and pass meaningful reform, that will rectify the existing delays for geoscience survey authorizations and urge the administration to implement regulations to provide for efficient carbon capture and storage projects on the OCS. Streamlining the permitting process along with reducing the ability for outside special interest groups to obstruct energy exploration is a necessary step to ensure our continued development of energy resources and low carbon solutions for future generations in the U.S.

Thank you for the opportunity to testify today.

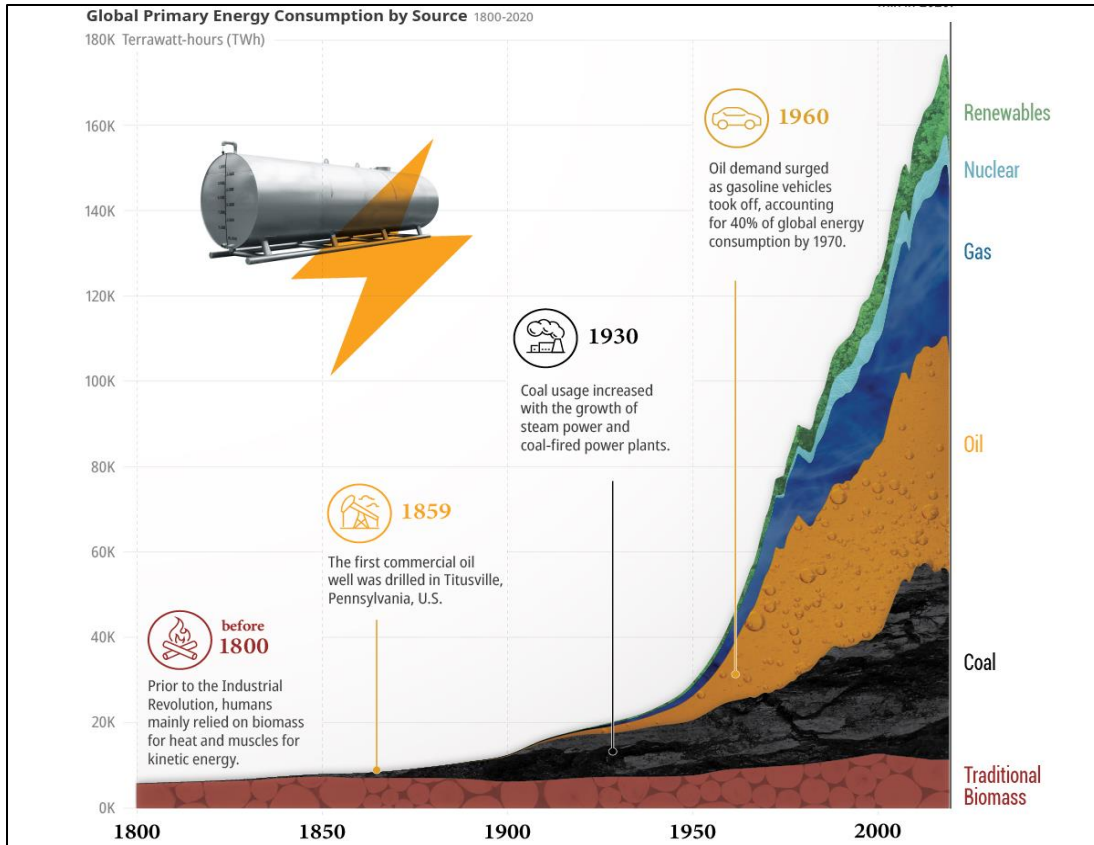


Figure 1

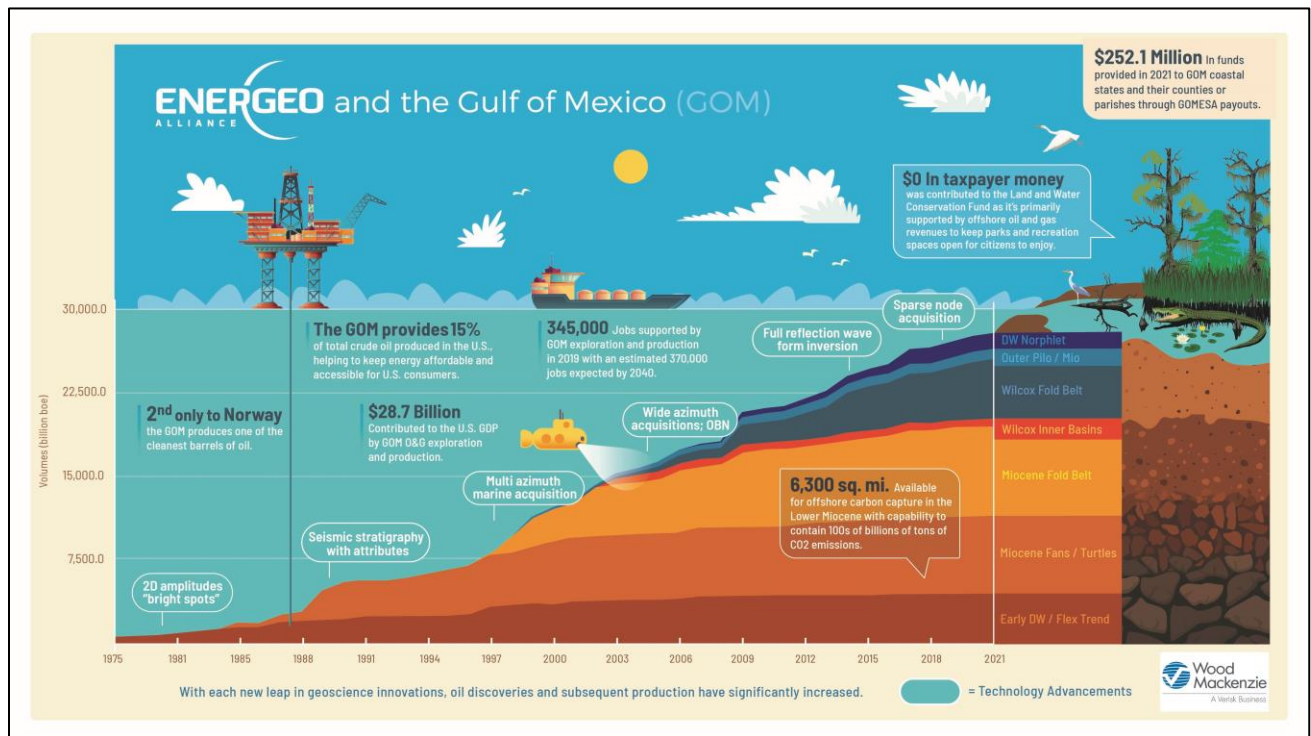


Figure 2