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# Oil, Gas & Energy Law Intelligence

## Lessons Learned from the Energy Activities in the Gulf of Mexico Region as a Guide for Accelerating and Financing Energy Activities in the Atlantic Region during the Energy Transition

by **B.B. Pollett**

(Addendum 07/02/2023)

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# Lessons Learned from the Energy Activities in the Gulf of Mexico Region as a Guide for Accelerating and Financing Energy Activities in the Atlantic Region during the Energy Addition<sup>1</sup>

*Buford Boyd Pollett<sup>2</sup>, The University of Tulsa*

## Introduction

From a “bird’s-eye” perspective in global energy development, we are now transitioning into the Golden Age of New Energy while at the same time entering the Heyday of natural gas with natural gas having an “annual production peak ... around 2060, reaching up to  $4.5 \times 10^{12}$  m<sup>3</sup>, which will play a pivotal role in the future energy sustainable development.”<sup>3</sup> Similarly, the European Union (EU) now classifies some specific uses of natural gas within the EU’s “taxonomy of sustainable sources of energy.”<sup>4</sup> Additionally, from the ground level, the Atlantic offshore wind sector would benefit from a symbiotic creation of multi-purpose fabrication yards, the building of Jones Act compliant vessels, and other logistical and transportation infrastructure as we experienced in the Gulf of Mexico region. As one state Louisiana representative has noted, “If you can build an oil rig, you can build a wind turbine... We have the infrastructure and the manpower.”<sup>5</sup> This approach fits the energy strategy of President Obama, President Trump and recently even the Biden administration’s pursuit of a sustainable all-of-the-above energy policy even on the Atlantic OCS.

Since we are entering the **energy addition** that brings together the Golden Age of New Energy and the Heyday of Natural Gas, this paper examines how the offshore energy industry and the US Atlantic region would benefit from the offshore energy industry, stakeholders and regulators working together in establishing a stable employment base, fabrication yards and other infrastructure needed for a high level of design, construction, installation as well as vessel utilization in compliance with Jones Act requirements.

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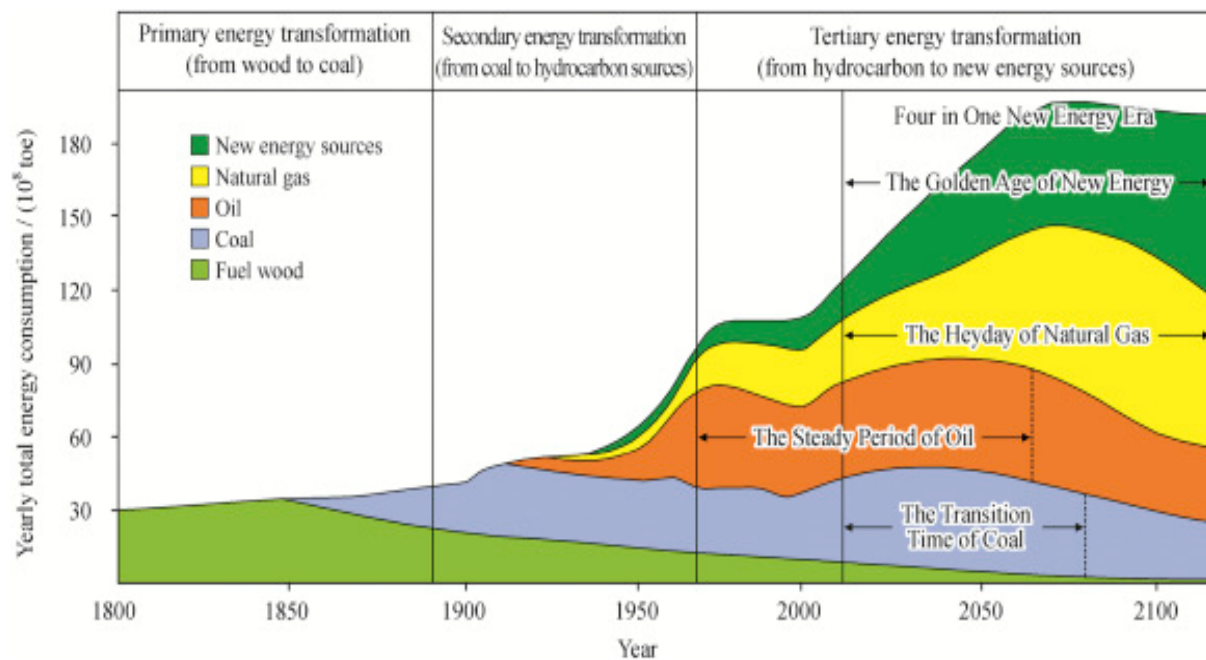
<sup>1</sup> The author would like to thank **Mr. Daniel Rhoads**, Graduate Student in the Collins College of Business School of Energy, University of Tulsa, for editing, feedback, and insights in the previous versions of this paper. Please note the author retains all responsibility for any errors in the paper.

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<sup>3</sup> Zou Cainenga, Zhao Qunb, Zhang Guosheng, Xiong Bob, *Energy revolution: From a fossil energy era to a new energy era*, ScienceDirect, Natural Gas Industry B 3 (2016) 1-11. <https://www.sciencedirect.com/science/article/pii/S2352854016300109>

<sup>4</sup> Catherine Clifford, *Europe will count natural gas and nuclear as green energy in some circumstances*, CNBC, published on July 6 2022 and updated on July 7 2022, <https://www.cnbc.com/2022/07/06/europe-natural-gas-nuclear-are-green-energy-in-some-circumstances-.html>

<sup>5</sup> Alex Brown, *More States Back Offshore Wind, Citing Economic Potential*, Pew July 29, 2022, <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2022/07/29/more-states-back-offshore-wind-citing-economic-potential>



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## US Legal Framework

### *Jurisdiction in the United States*

As a starting point, jurisdiction constitutes a foundational principle in examining the regulatory framework in the United States of America (USA). Jurisdiction basically means the power of a governmental entity (e.g., court, governmental agency, legislative body) to exercise authority in a specific situation. As a kind reminder, government entities have powers while individuals have rights. Thus, we will examine the US regulatory framework for the energy industry. A critical part of this exercise rests on our examination of the jurisdictional authority of governmental entities in creating, enforcing, and interpreting these regulations at the federal, state, and local levels in the USA.

### *US Legal Framework*

The USA is a constitutional republic with the Constitution and corresponding Amendments to the Constitution (the “Constitution”) providing the conceptual legal framework for the USA. The conceptual legal framework found in the Constitution serves as our guide to understand the separation of powers between the respective branches of the federal government as well as the jurisdictional limits of federal governmental power in regulating renewable energy in USA.

### *Jurisdictional Authority over Onshore and Offshore Land*

#### *US Constitutional Authority*

Article 4, Section 3, Clause 2 of the Constitution expressly grants Congress with the power “**to dispose of and make all needful Rules and Regulations respecting the Territory or other**

<sup>6</sup> Source: <https://www.sciencedirect.com/science/article/pii/S2352854016300109>

**Property belonging to the United States;** and nothing in this Constitution shall be so construed as to Prejudice any Claims of the United States, or of any particular State.”<sup>7</sup>

### *Federal Submerged Land*

#### *Outer Continental Shelf Lands Act (OCSLA)*

In 1953, Congress passed the Outer Continental Shelf Lands Act (OCSLA) whose primary purpose is to facilitate the federal government’s leasing of mineral and land energy resources in offshore submerged lands. The OCSLA states in 43 U.S.C. § 1332(3)), “the outer Continental Shelf is a vital national resource reserve held by the Federal Government for the public, which should be made available for expeditious and orderly development, subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other national needs.”<sup>8</sup>

#### *Submerged Lands Act (SLA) of 1953*

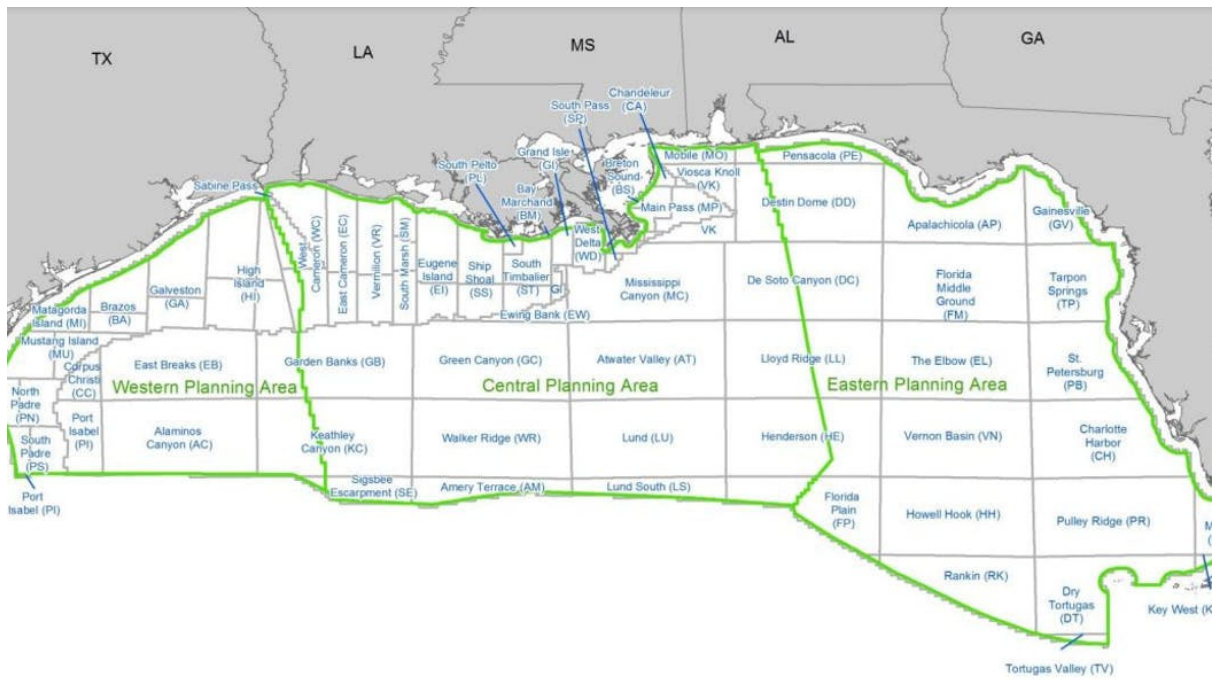
In response to the Supreme Court decision in *United States v. California* (1947), Congress passed the Submerged Lands Act (SLA) of 1953 recognizing the title of individual states to submerged navigable lands within their boundaries (*i.e.*, navigable waterways, such as rivers, as well as marine waters within the state's boundaries). Likewise, the SLA grants states title to the resources of the submerged lands from the coastline. For most states, the distance is 3 nautical miles (5.6 km) into the Atlantic, Pacific, and Arctic Oceans, as well as the Gulf of Mexico. However, this distance is 3 marine leagues (16.2 km) into the Gulf of Mexico for Texas and the west coast of Florida.<sup>9</sup>

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<sup>7</sup> Quoting Article Four, section 3, clause 2 of the Constitution. **Emphasis added.**

<sup>8</sup> Quoting BOEM Governing Statutes <https://www.boem.gov/about-boem/regulations-guidance/boem-governing-statutes>.

<sup>9</sup> See BOEM Governing Statutes <https://www.boem.gov/about-boem/regulations-guidance/boem-governing-statutes>.



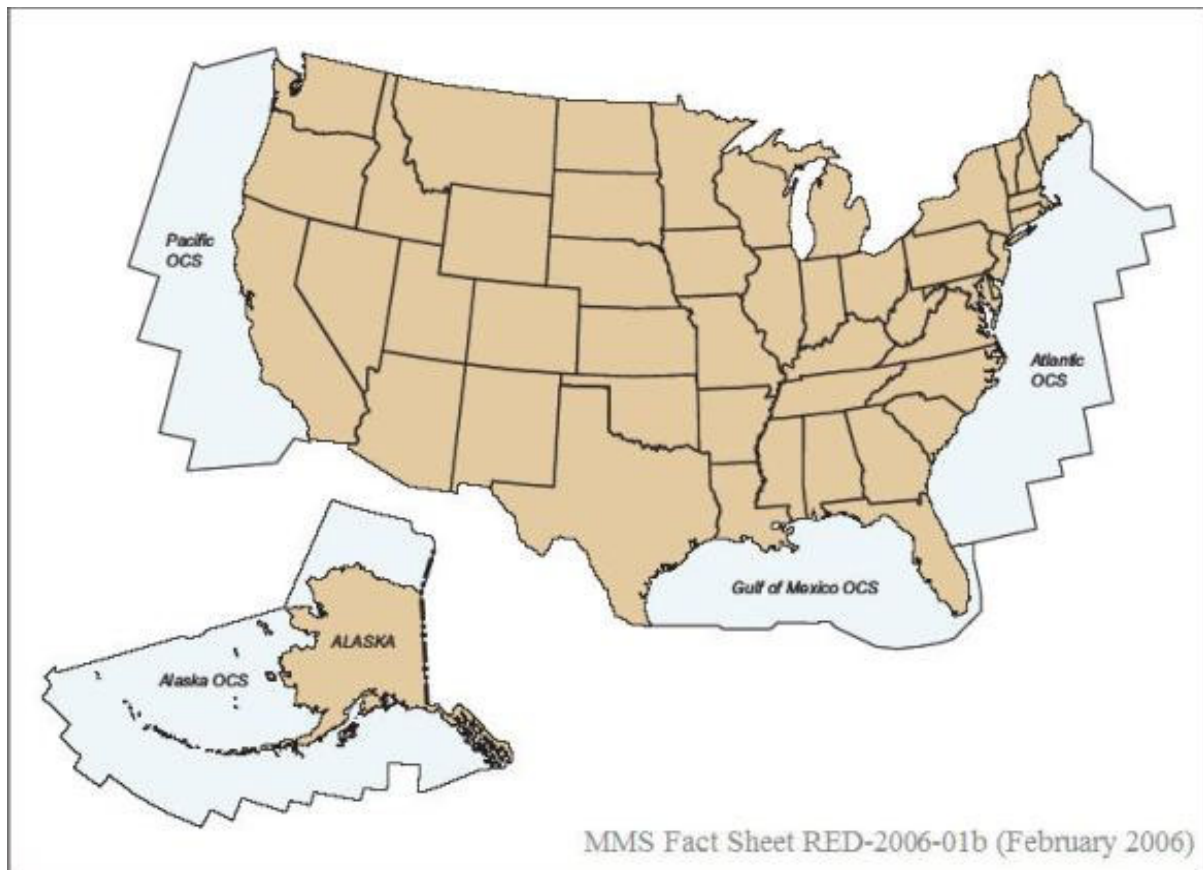
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### *U.S. Exclusive Economic Zone (EEZ)*

President Ronald Reagan signed a Presidential Proclamation (5030) on March 10, 1983, establishing the U.S. Exclusive Economic Zone (EEZ) defining the limits of the federal government's authority under OCSLA on federal submerged lands up to 200 nautical miles (370 km) from the US coastline.<sup>11</sup>

<sup>10</sup> Source <https://www.offshore-mag.com/regional-reports/us-gulf-of-mexico/article/14214204/gulf-of-mexico-lease-sale-257-garners-more-than-191-million-in-high-bids>

<sup>11</sup> See BOEM Governing Statutes <https://www.boem.gov/about-boem/regulations-guidance/boem-governing-statutes>.

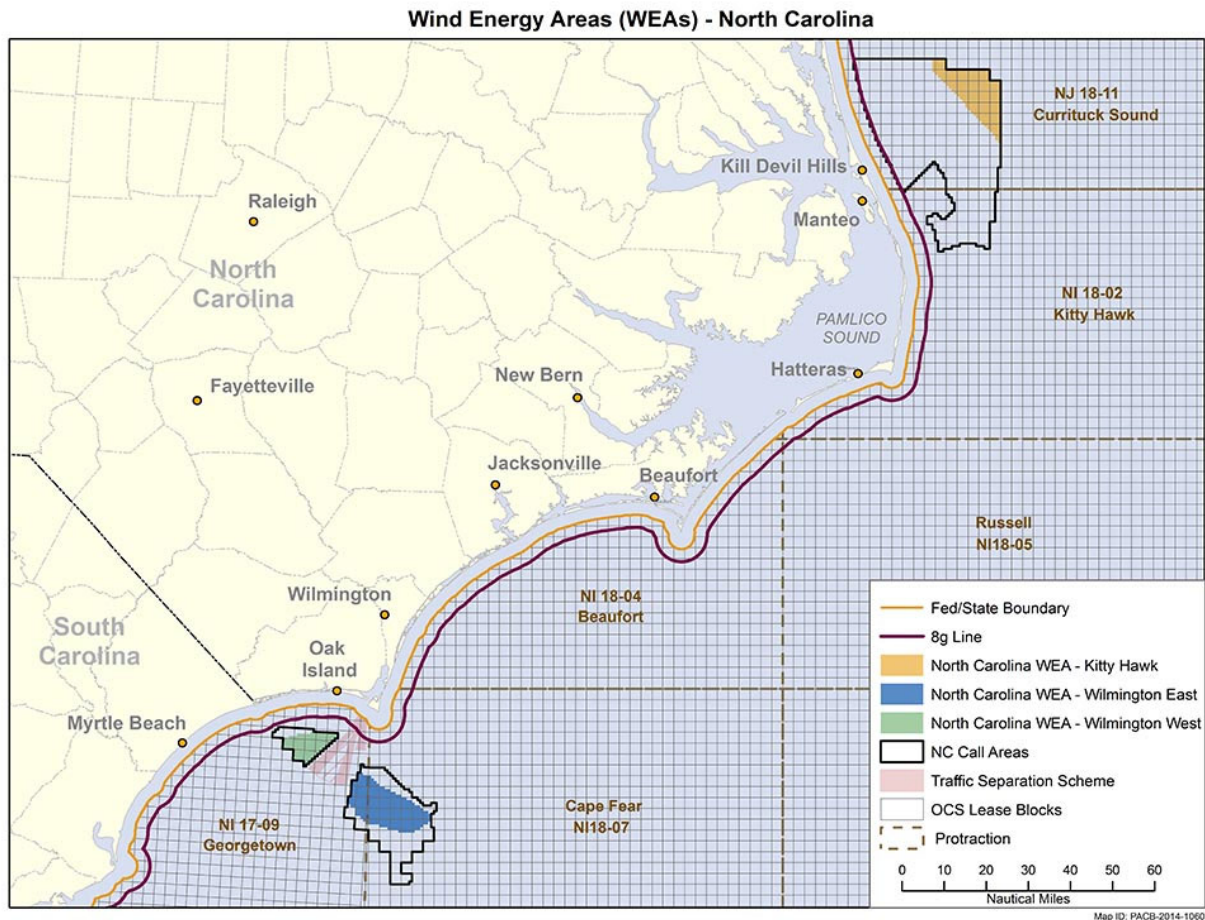


### *Energy Policy Act of 2005 (EPAct)*

Congress passed the Energy Policy Act of 2005 (EPAct) to amend the OCSLA. Provisions of the EPAct granted the BOEM lead management authority for marine renewable energy projects on Federal offshore submerged lands.<sup>12</sup>

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<sup>12</sup> See BOEM Governing Statutes <https://www.boem.gov/about-boem/regulations-guidance/boem-governing-statutes>.



The BOEM has executed numerous memoranda of understanding/agreements with various agencies with jurisdiction over the various activities on the federal submerged lands (including activities to facilitate the development of renewable energy Outer Continental Shelf).<sup>13</sup> Likewise, the “BOEM must comply with numerous environmental statutes, regulations, and executive orders” in executing the BOEM’s mission.<sup>14</sup>

## Jurisdictional Boundaries between Federal Agencies

As with most governments, there exist jurisdictional boundaries between federal governmental agencies. Generally, federal agencies execute memoranda of understanding to formalize these jurisdictional boundaries and clarify agency responsibilities. The Energy Policy Act of 2020 contained provisions requiring federal governmental agencies to expedite and increase approval and development of renewable energy projects on federal land.

The Energy Policy Act of 2005 (EPAct) authorized BOEM to issue leases, easements and rights of way to allow for renewable energy development on the Outer Continental Shelf (OCS). EPAct provided a general framework for BOEM to follow when authorizing these renewable energy activities. For example, EPAct requires that BOEM coordinate with relevant Federal

<sup>13</sup> See Memorandum of Understanding and Memorandum of Agreement (MOU/MOAs) <https://www.boem.gov/MOUs-MOAs>.

<sup>14</sup> Quoting Regulatory Framework and Guidelines <https://www.boem.gov/environment/regulatory-framework-and-guidelines>.

agencies and affected state and local governments, obtain fair return for leases and grants issued, and ensure that renewable energy development takes place in a safe and environmentally responsible manner.<sup>15</sup>

### *U.S. Maritime Law*

**Federal courts have exclusive jurisdiction over U.S. admiralty and maritime law** as an expressed power cited in Article III Section 2 of the U.S. Constitution and the Judiciary Act of 1789. Likewise, federal courts via the power expressed in the Constitution and Congress through Article I Section 8 Clause 3 of the Constitution (i.e., the Commerce Clause) seek to create a uniform body of admiralty law both nationally and internationally to facilitate commerce. “American admiralty law formerly applied only to American tidal waters. It now extends to any waters navigable within the United States for interstate or foreign commerce.”<sup>16</sup>

### *The Jones Act*

Congress passed the Merchant Marine Act of 1920 (P.L. 66- 261) (i.e., the Jones Act), requiring that a vessel transporting cargo between two points in the USA (including onshore and offshore submerged lands of the USA) be built in the USA and crewed by citizens of the USA.<sup>17</sup> The Jones Act “provides a significant degree of protection for U.S. shipyards, domestic carriers, and American merchant sailors. It is a subject of debate because some experts argue that it leads to high domestic ocean shipping costs and constrains the availability of ships for domestic use.”<sup>18</sup> We often hear more concerns about the Jones Act following natural disasters such as Hurricane Katrina that impacted the Gulf of Mexico region and Hurricane Maria that impacted Puerto Rico. In both cases, President Bush and President Trump granted Jones Act waivers to facilitate the recovery efforts following those natural disasters.<sup>19</sup>

Political pressure remains to develop a national maritime strategy **“including strategies to increase the use of short sea shipping and enhance U.S. shipbuilding capability.”**<sup>20</sup> “Defense officials have stated that while **the Jones Act helps preserve a baseline of shipyard capability, the dwindling size of the fleet indicates a need to reassess current policy.**”<sup>21</sup> Please note, the U.S. Maritime Administrator credits the Jones Act for **“ensuring the**

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<sup>15</sup> Overview of BOEM's Regulatory Framework, <https://www.boem.gov/renewable-energy/regulatory-framework-and-guidelines>

<sup>16</sup> admiralty, Legal Information Institute, Cornell Law School <https://www.law.cornell.edu/wex/admiralty#:~:text=The%20courts%20and%20Congress%20seek,2%20of%20the%20U.S.%20Constitution.>

<sup>17</sup> John Frittelli, *Shipping Under the Jones Act: Legislative and Regulatory Background*, Congressional Research Service, November 21, 2019, Summary. <https://crsreports.congress.gov/product/pdf/R/R45725/4>

<sup>18</sup> John Frittelli, *Shipping Under the Jones Act: Legislative and Regulatory Background*, Congressional Research Service, November 21, 2019, Summary. <https://crsreports.congress.gov/product/pdf/R/R45725/4>

<sup>19</sup> Matthew Yglesias, *The Jones Act, the obscure 1920 shipping regulation strangling Puerto Rico, explained Protectionism and exploitation at its worst*, VOX Updated Oct 9, 2017, <https://www.vox.com/policy-and-politics/2017/9/27/16373484/jones-act-puerto-rico>

<sup>20</sup> John Frittelli, *Shipping Under the Jones Act: Legislative and Regulatory Background*, Congressional Research Service, November 21, 2019, Summary. **Emphasis added.** <https://crsreports.congress.gov/product/pdf/R/R45725/4>

<sup>21</sup> John Frittelli, *Shipping Under the Jones Act: Legislative and Regulatory Background*, Congressional Research Service, November 21, 2019, Summary. **Emphasis added.** <https://crsreports.congress.gov/product/pdf/R/R45725/4>

**employment of the majority of U.S. merchant mariners.”<sup>22</sup>** Correspondingly, the Jones Act does place limits on the transport of liquified natural gas (LNG), carbon dioxide and hydrogen to the U.S. east coast and installation vessels for offshore wind power, due to the fact that **generally transportation of goods between two points in the United States must be by U.S. built, owned, and crewed vessels.**

### *Location of Resources*

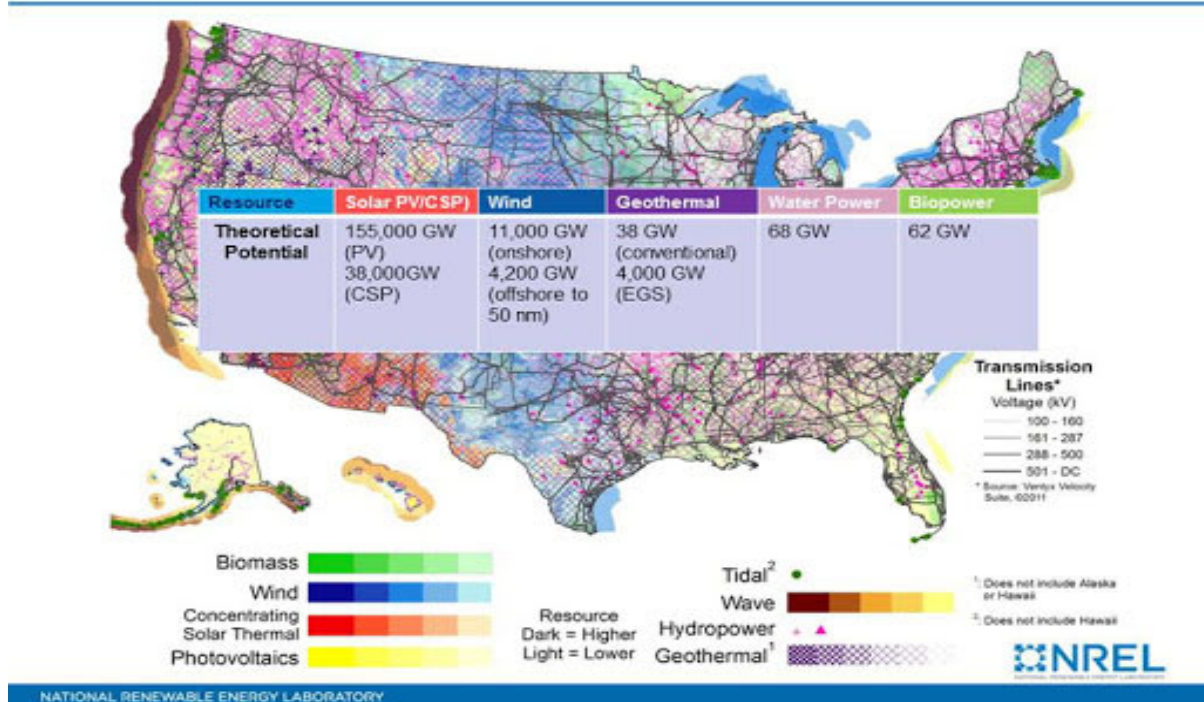
As we look to generate more power from renewable energy, we must first identify the location of the resources needed for generating power from renewable energy. In geology field school at the University of Georgia (UGA) under the direction of Dr. J. Hatten Howard III and UGA Geology department staff member Mr. Chris Fleischer, we had an expression, “get high early.” Basically, this expression means to understand the geology of an area efficiently and effectively, one must not just start walking in the field. A person must first use the tools available to get a “bird’s eye” view of the area of interest so that the geologist can get a first impression of the geological, hydrological, and biological features of the earth to appreciate the geology and natural resources of an area. This first impression provides insight into the general geological story of the area and potentially specific areas that might require more detailed investigation.

Likewise, we must also “get high early” to efficiently and effectively identify the potential geological resource locations for developing the renewable energy resources located on the Atlantic coast of the USA. Thus, I direct your attention to the following U.S. Renewable Resources map provided by the National Renewable Energy Laboratory (NREL). The map highlights the theoretical potential energy generating power from solar, wind, geothermal, water, and biofuel resources. According to NREL, the theoretical potential for photovoltaic (PV) in the United States for solar power is 155,000 GW, and the theoretical potential for concentrated solar thermal systems (CSP) is 38,000 GW. In contrast, the theoretical potential for onshore wind power is 11,000 GW and 4,200 GW for offshore wind power. In addition, the theoretical potential for waterpower is 68 GW.

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<sup>22</sup> John Frittelli, *Shipping Under the Jones Act: Legislative and Regulatory Background*, Congressional Research Service, November 21, 2019, Summary. **Emphasis added.**  
<https://crsreports.congress.gov/product/pdf/R/R45725/4>

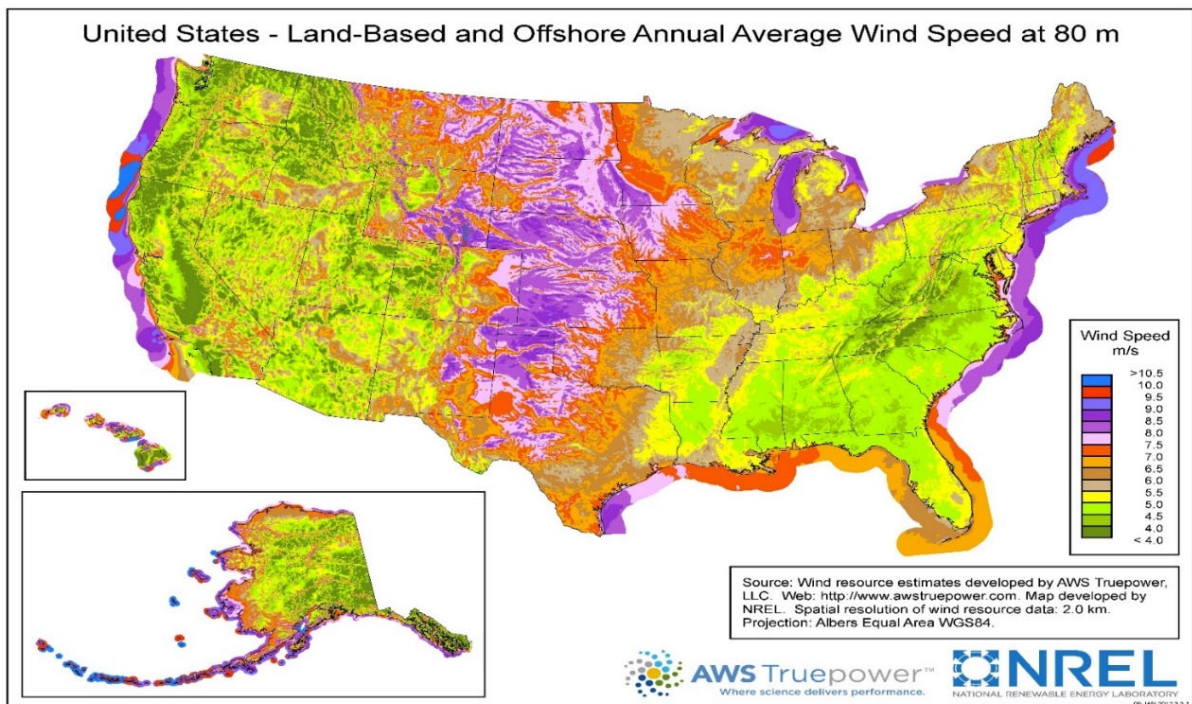
## U.S. Renewable Resources



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Similarly, I now focus our attention on the theoretical potential for offshore wind power on the Atlantic coast of the United States. Please look at the following NREL United States – Land Based and Offshore Annual Average Wind Speed at 80 Meters map. Upon examination of the map, one can note that the most significant theoretical potential locations for wind power generation along the Atlantic coast extend from the Carolinas to New England.

<sup>23</sup> *U.S. Renewable Resources Map Highlights Abundance of Potential*, Team Gemini, April 14, 2015, <http://teamgemini.us/u-s-renewable-resources-map-highlights-abundance-of-potential/>



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Likewise, some of the states along the Atlantic coast have set goals for offshore wind power generation. These goals include targets by the respective states as cited in the following table.<sup>25</sup>

State	Offshore wind goals (megawatts)
Massachusetts	5,600
Rhode Island	Unspecified
Connecticut	2,000
New York	9,000 by 2035
New Jersey	500 by 2035
Maryland	1,200
Virginia	5,200
North Carolina	2,800 by 2030; 8,000 by 2040

<sup>24</sup> Land-based and offshore annual average wind speed at 80 m above ground level across the continental United States. Source: Wind resource estimates were developed by AWS Truepower LLC. Web: <http://www.awstruepower.com>. Map developed by National Renewable Energy Lab. Spatial resolution of wind resource data is 2.0 km. See also Taber D. Allison, Jay E. Diffendorfer, Erin F. Baerwald, Julie A. Beston, David Drake, Amanda M. Hale, Cris D. Hein, Manuela M. Huso, Scott R. Loss, Jeffrey E. Lovich, M. Dale Strickland, Kathryn A. Williams, Virginia L. Winder, *Impacts to Wildlife of Wind Energy Siting and Operation in the United States*, Fall 2019 – Report No. 21 Published by the Ecological Society of America, Box 1 Figure 1. [https://www.esa.org/wp-content/uploads/2019/09/Issues-in-Ecology\\_Fall-2019.pdf](https://www.esa.org/wp-content/uploads/2019/09/Issues-in-Ecology_Fall-2019.pdf)

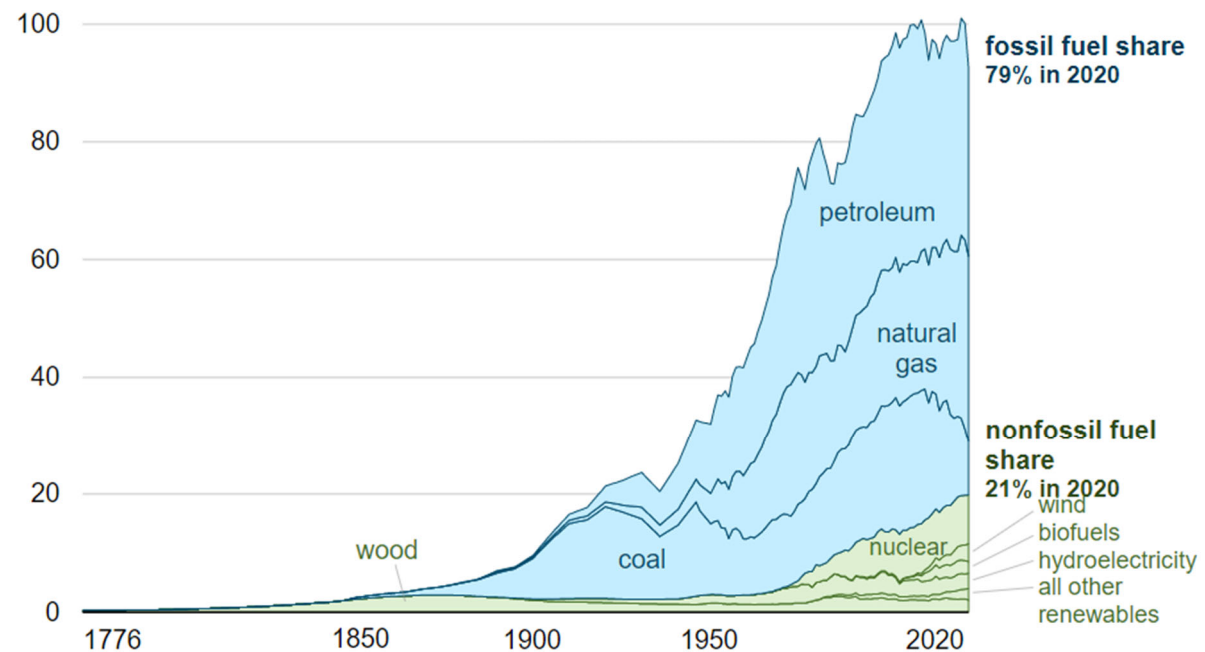
<sup>25</sup> Report: *The Road to 30 Gigawatts: Key Actions To Scale an Offshore Wind Industry in the United States*, March 14, 2022, <https://www.americanprogress.org/article/the-road-to-30-gigawatts-key-actions-to-scale-an-offshore-wind-industry-in-the-united-states/>.

## Energy Consumption in the USA

Historically from 1776 to 2020 as demonstrated by the following EIA chart, the USA has predominantly relied on carbon-based fuels (*i.e.*, **geochemically organic fuels**) including biofuel, wood, coal, petroleum, and natural gas with the latter constituting about 20-35 quadrillion BTUs of the roughly 100 quadrillion BTUs in 2020. Nuclear power came online post-1950 and remains less than 10 quadrillion BTUs of the energy consumption mix by 2020. Similarly, renewable energy including hydroelectric and biofuels have increased more recently to levels of about ten percent of the energy consumption mix by 2020.

### Energy consumption in the United States (1776–2020)

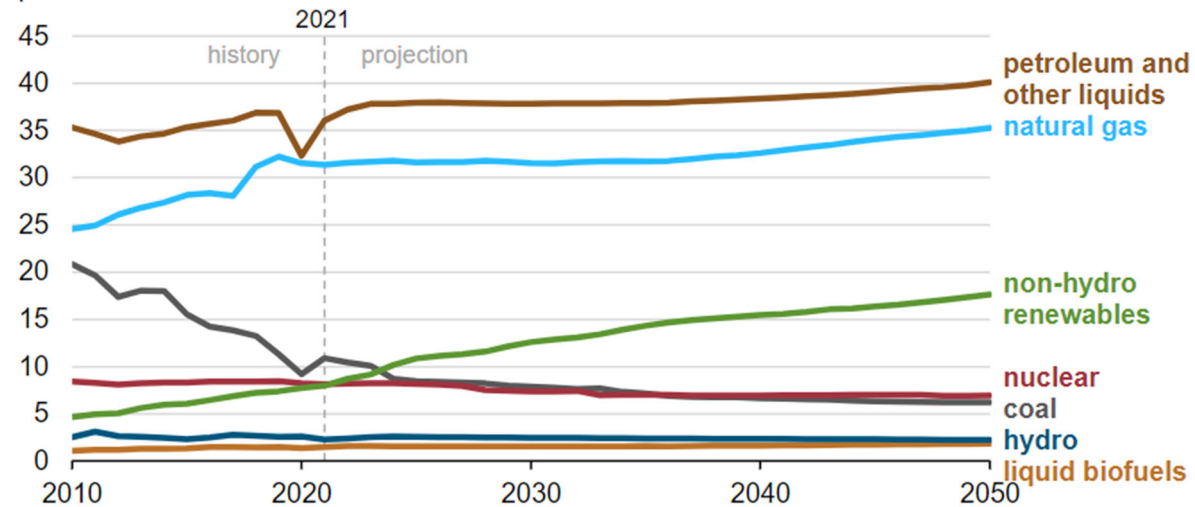
quadrillion British thermal units



Source: U.S. Energy Information Administration, *Monthly Energy Review*

Going forward to 2050, the EIA projects in the following chart that nuclear power will constitute under 10 quadrillion BTUs of the US energy mix. Renewables including kinetic energy-based hydro and wind power as well as photovoltaic energy based solar power will constitute about twenty quadrillion British thermal units (BTUs) of the US energy mix in 2050. Meanwhile **geochemically organic based fuels** will constitute about seventy-five quadrillion BTUs of the energy mix of the energy mix in 2050 with petroleum contributing about 40 quadrillion BTUs and **natural gas contributing about 35 quadrillion BTUs to the energy mix**. This includes an increase in the renewable energy mix from about ten quadrillion BTUs in 2021 to about 20 quadrillion BTUs in 2050 and an increase in natural gas from just over 30 quadrillion BTUs in 2021 to about 35 quadrillion BTUs in 2050.

**U.S. energy consumption by fuel source, AEO2022 Reference case (2010–2050)**  
quadrillion British thermal units



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2022* (AEO2022)  
Note: Biofuels are shown separately and included in petroleum and other liquids.

As the EIA stated in the EIA’s Annual Energy Outlook 2022 (AEO2022) released March 3, 2022:

***Petroleum and natural gas remain the most-consumed sources of energy in the United States through 2050, but renewable energy is the fastest growing***

*We project that U.S. energy consumption will continue to grow through 2050 as population and economic growth outpace energy efficiency gains.... Consumption of natural gas will continue to grow as well over this period, maintaining the second-largest share of all fuel sources, driven by expectations that natural gas prices will remain lower than historical levels.<sup>26</sup>*

### *US Natural Gas Production*

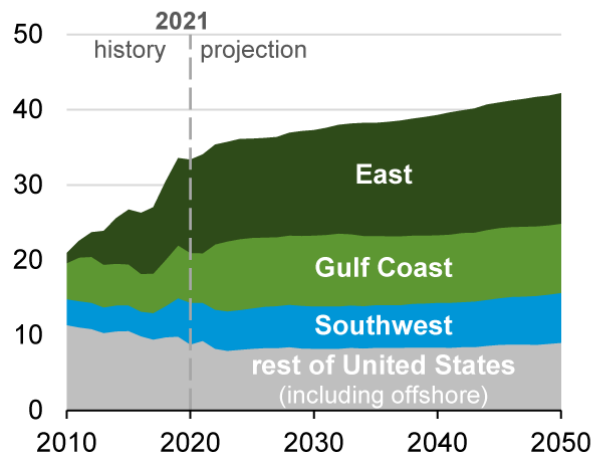
Likewise, the EIA expects the production and exportation of natural gas in the USA to increase through 2050.<sup>27</sup>

<sup>26</sup> EIA projects U.S. energy consumption will grow through 2050, driven by economic growth, EIA, March 3, 2022, <https://www.eia.gov/todayinenergy/detail.php?id=51478>.

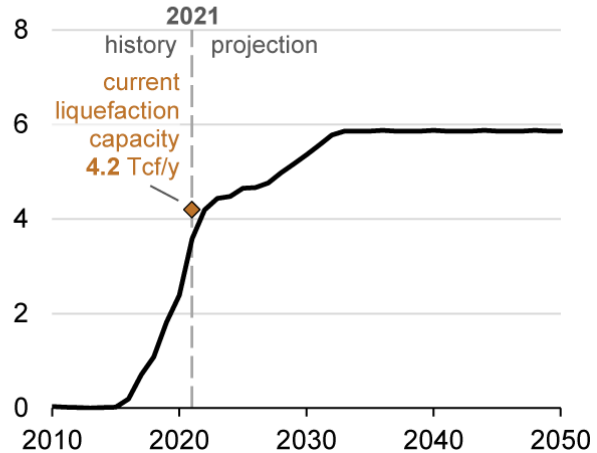
<sup>27</sup> Principal contributors: William Sommer, Stephen York, Andrew Smiddy, *EIA expects U.S. natural gas production to rise as demand for exports grow*, American Journal of Transportation, March 9, 2022, <https://ajot.com/news/article/eia-expects-u.s-natural-gas-production-to-rise-as-demand-for-exports-grow>

## U.S. natural gas production and liquefied natural gas (LNG) exports (2010–2050)

production (AEO2022 Reference Case)  
trillion cubic feet (Tcf)



LNG exports (AEO2022 Reference case)  
trillion cubic feet (Tcf)



As the EIA stated:

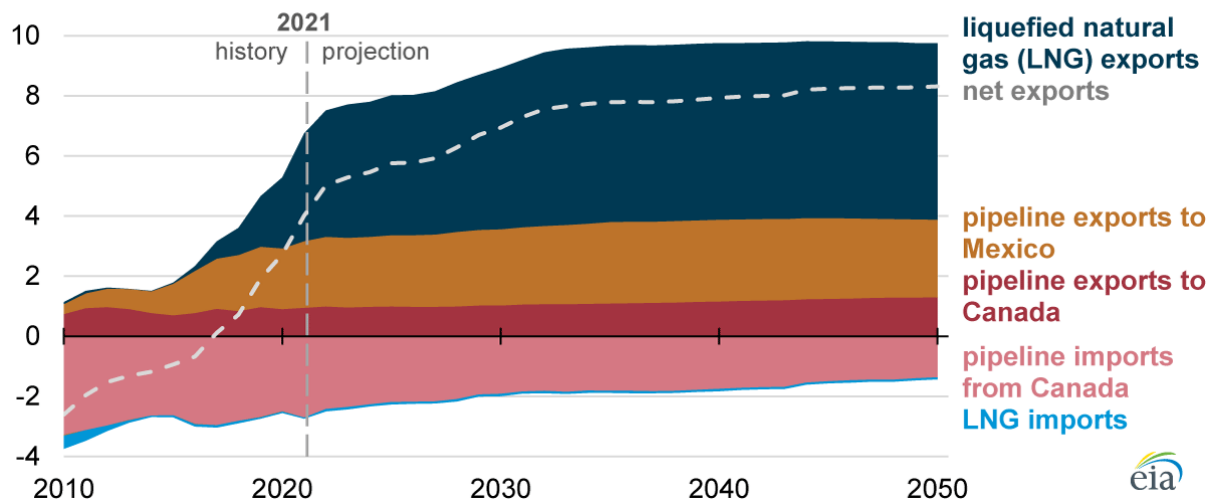
*In our Annual Energy Outlook 2022 (AEO2022) Reference case, we project that U.S. natural gas production will continue to increase through 2050. **The Reference case is the baseline in AEO2022, and it projects energy trends based on current laws, regulations, and market conditions.** Much of the modeled growth in natural gas production results from rising demand for U.S. natural gas exports, especially for liquefied natural gas (LNG). We project natural gas exports to continue to rise through the early 2030s before leveling off.*

***We project that annual U.S. natural gas production will grow by almost 25% through 2050 in the AEO2022 Reference case. ...***

*After 2025, we project that U.S. natural gas production will increase to meet growing LNG export demand. **We project global demand for natural gas will continue to be high, making it more economical to build additional LNG export facilities in the United States.** These LNG capacity expansions, coupled with increasing demand for natural gas abroad, result in an increased forecast of LNG exports to 5.86 trillion cubic feet by 2033 in the Reference case, up 65% from current levels.<sup>28</sup>*

<sup>28</sup> Principal contributors: William Sommer, Stephen York, Andrew Smiddy, *EIA expects U.S. natural gas production to rise as demand for exports grow*, American Journal of Transportation, March 9, 2022, <https://ajot.com/news/article/eia-expects-u.s-natural-gas-production-to-rise-as-demand-for-exports-grow>

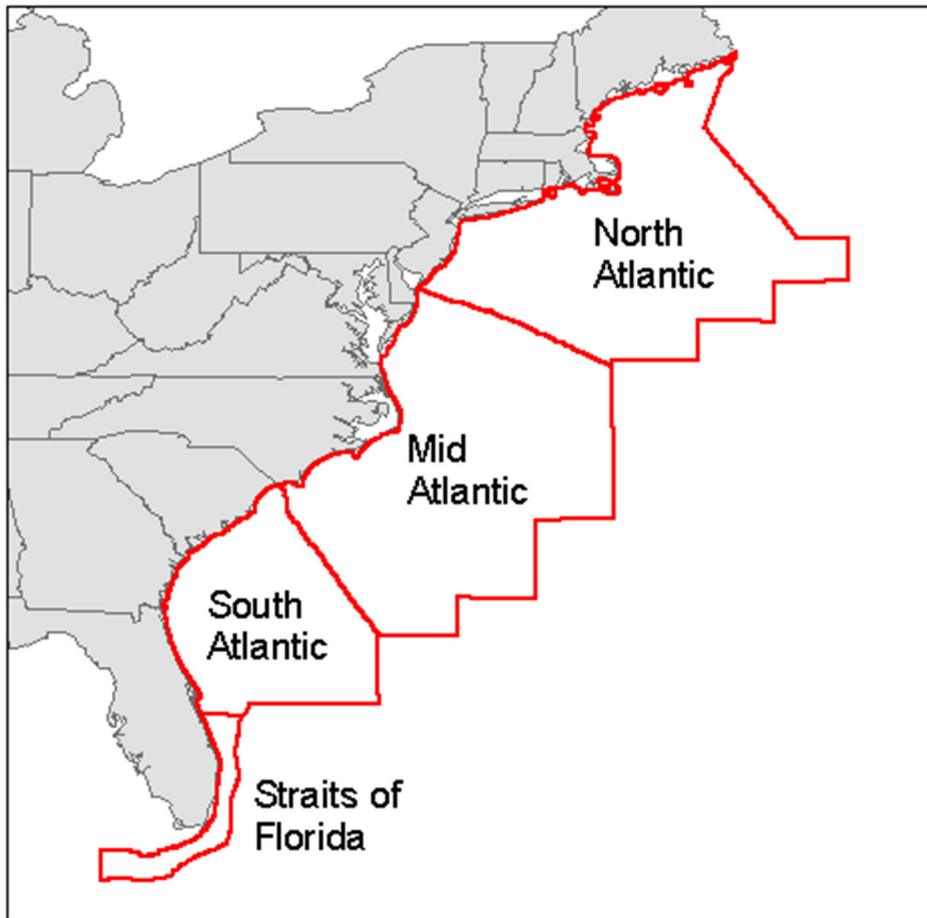
**U.S. natural gas trade, AEO2022 Reference case (2010–2050)**  
trillion cubic feet (Tcf)



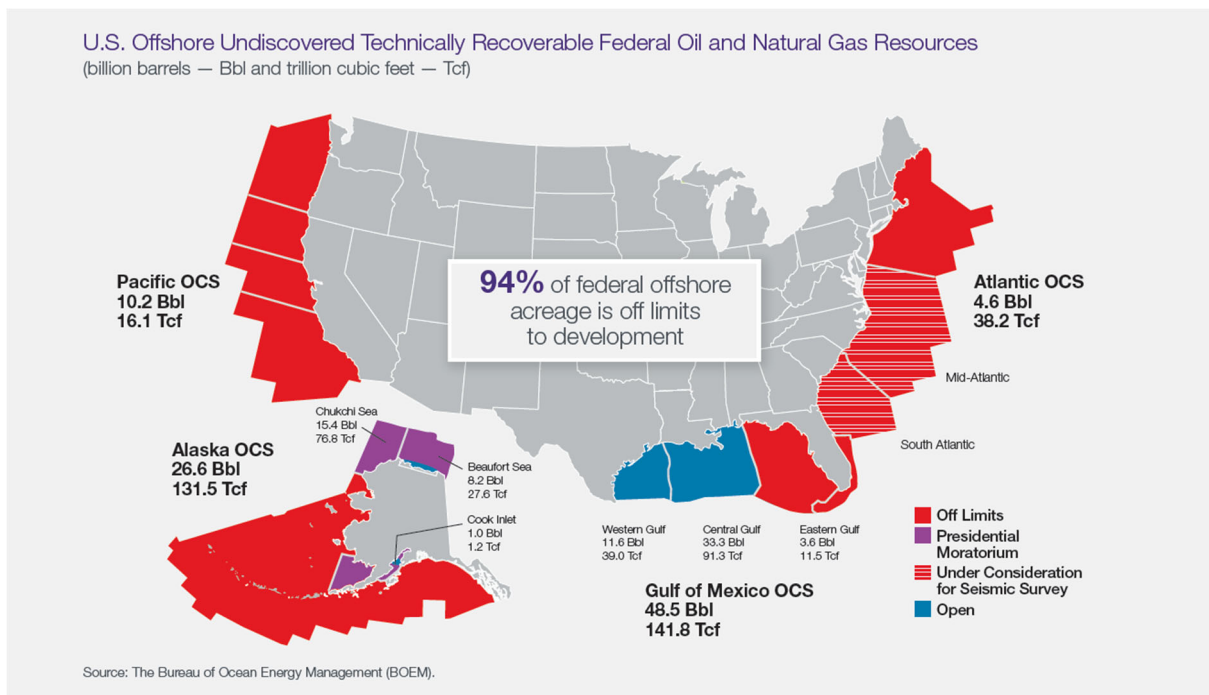
Of note, the EIA based the reference case for AEO2022 on its projected “energy trends based on current laws, regulations, and market conditions.”<sup>29</sup> This means the EIA did not consider any production for the Atlantic OCS. The BOEM has divided the Atlantic OCS into four planning areas (1) North Atlantic, (2) Mid-Atlantic, (3) South Atlantic, and (4) Straits of Florida.<sup>30</sup>

<sup>29</sup> Principal contributors: William Sommer, Stephen York, Andrew Smiddy, *EIA expects U.S. natural gas production to rise as demand for exports grow*, American Journal of Transportation, March 9, 2022, <https://ajot.com/news/article/eia-expects-u.s-natural-gas-production-to-rise-as-demand-for-exports-grow>

<sup>30</sup> Oil and Gas – Atlantic, BOEM, <https://www.boem.gov/oil-gas-energy/mapping-and-data/atlantic-cadastral-data>



As with previous administrations, the Biden administration continues to maintain a moratorium on natural gas exploration and development on the Atlantic OCS.



## *Impact of Russia's Invasion of Ukraine*

Please note a basic assumption in the EIA's AEO2022 projections rests on the expectation "that natural gas prices will remain lower than historical levels."<sup>31</sup> In addition, please note that the EIA's AEO2022 release date of March 3, 2022, was less than two weeks after Russia's invasion of Ukraine on February 24, 2022. Thus, the EIA's AEO2022 projections do not include the impact of the world energy market disruption and the subsequent energy mix reset. As noted on June 14, 2022, at Reuters Global Energy Transition conference:

*Russia's invasion of Ukraine could accelerate momentum around transitioning to alternative sources of energy, but natural gas will remain a key part of the global energy mix, industry officials say.*

*Russia's invasion has made clear the value of domestic energy independence and that Europe — reeling from natural gas supply shortages — has special reason to speed up its transition to renewable sources. But conventional energy sources, and natural gas especially, are poised to play a considerable role in the energy mix for decades.*

*"In any scenario we see, natural gas is a big part of the energy future through 2050," Enbridge senior vice president of strategy, power, and new energy technologies Matthew Akman said at the Reuters Global Energy Transition conference today.<sup>32</sup>*

On March 17<sup>th</sup>, the Biden administration authorized shipments of exports from two LNG facilities on the US Gulf Coast to minimize the impact of Russia's invasion of Ukraine especially on Europe's energy situation. The US Department of Energy said in a press release:

*The authorizations mean every operating U.S. LNG export project now has approval to export its full capacity to any country where not prohibited by U.S. law or policy, the DOE said in a press release.*

*"U.S. LNG remains an important component to global energy security, and DOE remains committed to finding ways to help our allies and trading partners with the energy supplies they need while continuing to work to mitigate the impact of climate change," the DOE said.<sup>33</sup>*

Similarly, the Biden Administration committed the U.S. liquefied natural gas industry to providing Europe an additional 15 billion cubic tons (bct) of LNG through the 2022. Additionally, the Biden Administration agreement with Europe envisions the United States increasing US supply of LNG to Europe to 50 bct through 2030.<sup>34</sup>

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<sup>31</sup> Principal contributors: William Sommer, Stephen York, Andrew Smiddy, *EIA expects U.S. natural gas production to rise as demand for exports grow*, American Journal of Transportation, March 9, 2022, <https://ajot.com/news/article/eia-expects-u.s-natural-gas-production-to-rise-as-demand-for-exports-grow>

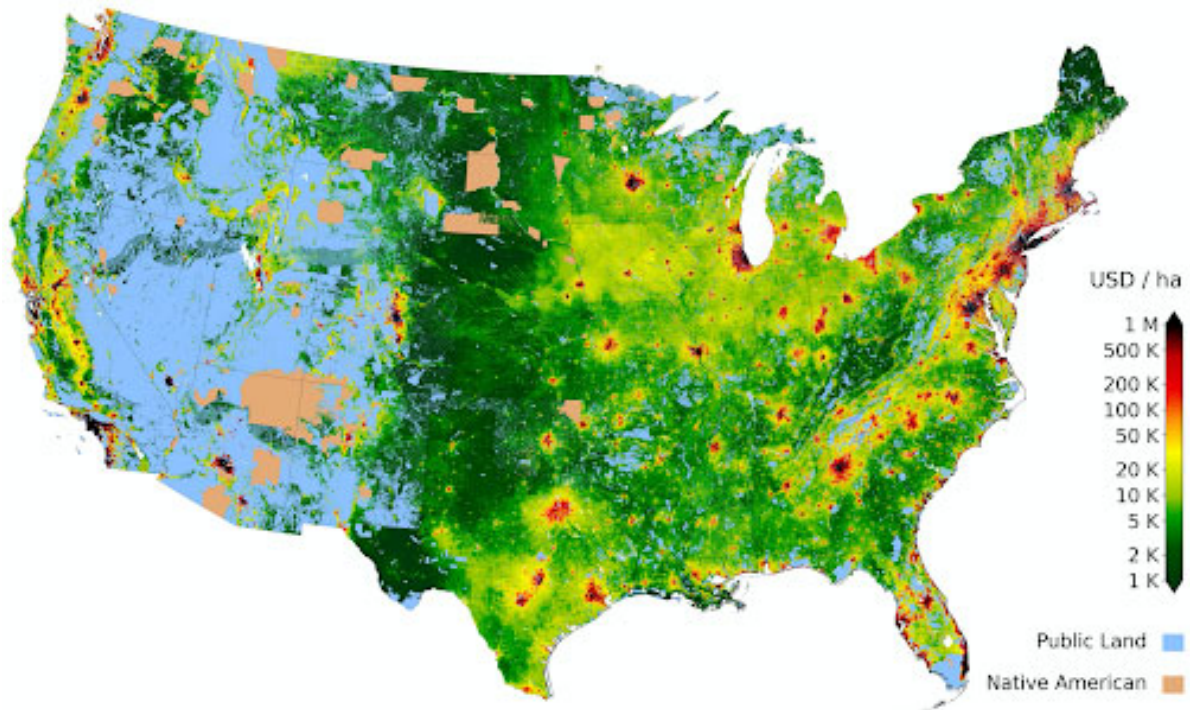
<sup>32</sup> *Ukraine war boosts enthusiasm for natural gas*, June 14, 2022, <https://www.argusmedia.com/en/news/2341246-ukraine-war-boosts-enthusiasm-for-natural-gas>.

<sup>33</sup> *Biden administration approves more LNG exports to Europe*, Reuters, March 17, 2022, <https://www.reuters.com/world/us/biden-administration-approves-more-exports-major-us-lng-terminals-2022-03-16/>

<sup>34</sup> David Blackmon, *Biden's Commitment For US LNG To Supply Europe Faces Strong Headwinds*, Forbes, March 27, 2022, <https://www.forbes.com/sites/davidblackmon/2022/03/27/bidens-commitment-for-us-lng-to-supply-europe-faces-strong-headwinds/?sh=51c2cdf3247a>

### *Onshore land in the USA is a Mixture of Private and Public Land Ownership*

As part of examining the infrastructure requirements needed for energy development, we should start with a “bird’s-eye” review of the land ownership in the USA. Onshore land in the USA is a mixture of private and public land ownership. The federal government is the predominant landowner in the western USA and private land ownership predominates in the eastern USA.

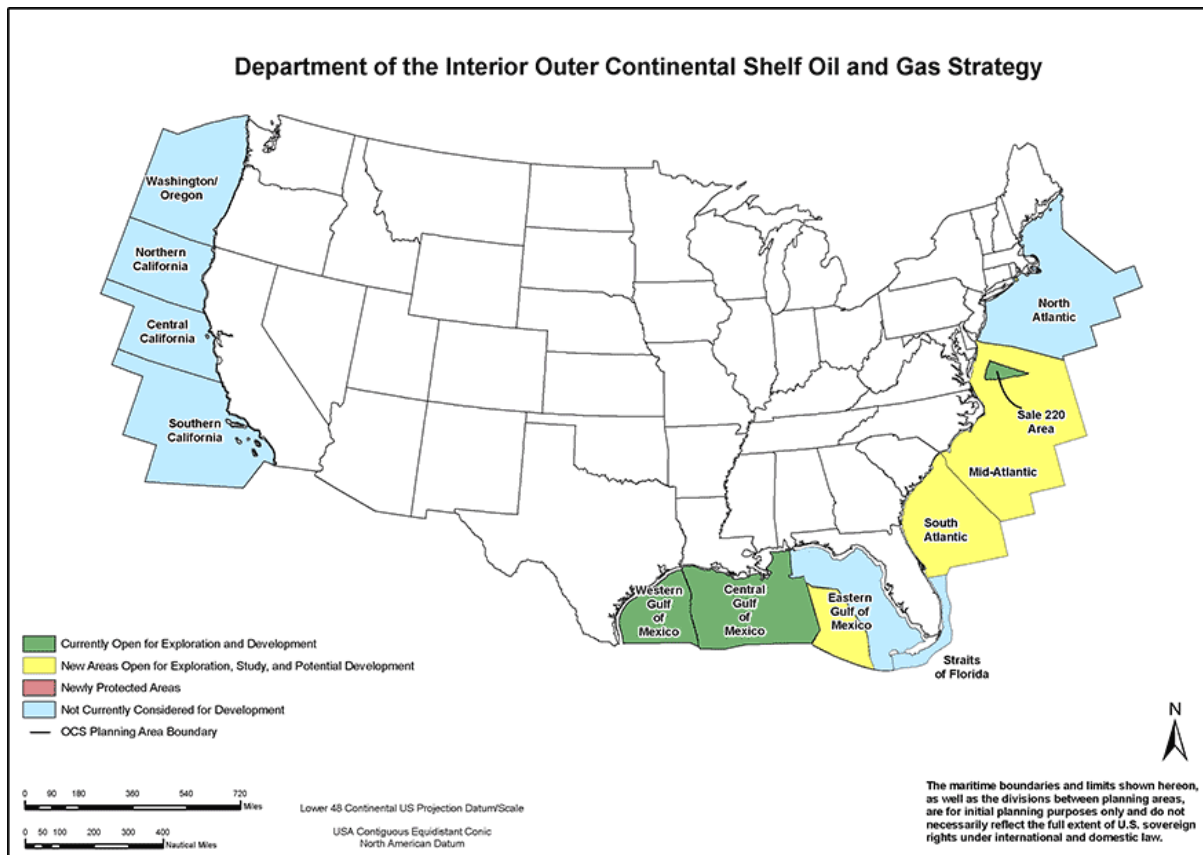


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The federal government is the predominant owner of submerged land in the USA specifically in the OCS. This is not to overlook the ownership by the respective states for submerged lands from the shore to respective distances according to the SLA detailed earlier in this paper.

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<sup>35</sup> Ruqaiyah Zarook, *Map of the Week: Mapping Private vs. Public Land in the United States*, Ubique-American Geographical Society, <https://ubique.americangeo.org/map-of-the-week/map-of-the-week-mapping-private-vs-public-land-in-the-united-states/>



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## Current Infrastructure

Parties have developed the energy infrastructure in a variety of ways and locations in the USA over the past couple of centuries. Similarly, the energy infrastructure in the USA increased substantially in the past century. By the 1940's, parties began moving on from onshore to develop the offshore infrastructure on submerged lands.

*In the mid-1940s, major changes in the oil industry occurred as America was making its transition from a wartime- to postwar-economy. There was an enormous public demand for oil and gas, and offshore exploration encountered enormous challenges, such as underwater exploration, drilling location determination and offshore communications. **By 1949, 11 fields and 44 exploratory wells were operating in the Gulf of Mexico.***

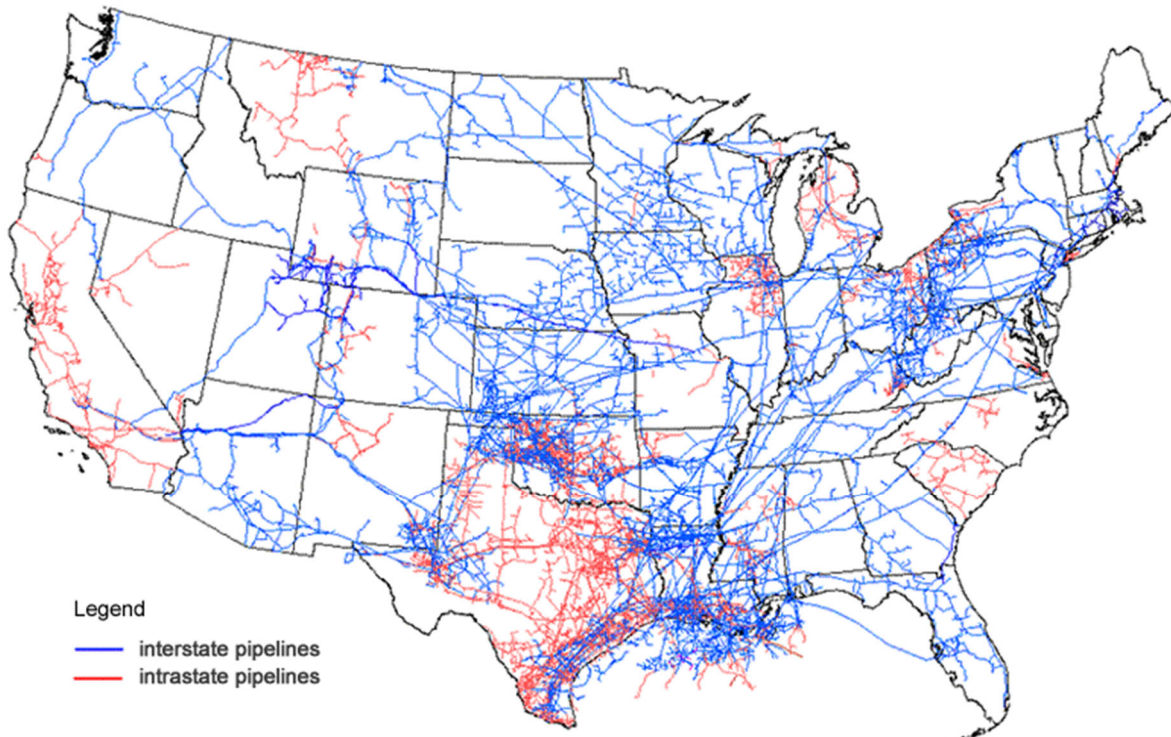
*As the industry continued to evolve through the 1950s, oil production became the second-largest revenue generator for the country, after income taxes. The U.S. government passed the U.S. Submerged Lands Act in 1953, which set the federal government's title and ownership of submerged lands at three miles from a state's coastline. The OCSLA was also passed which provided for federal jurisdiction over*

<sup>36</sup> Source: Obama Administration - *Atlantic, Gulf of Mexico and Pacific Region Strategies*-  
<https://www.doi.gov/energy/ocs/lower48-strategy>

*submerged lands of the OCS and authorized the Secretary of the Interior to lease those lands for mineral development.<sup>37</sup>*

As a result, parties installed a substantial amount of energy infrastructure including facilities, pipelines, logistics support infrastructure, fabrication yards, *etc.*, on both onshore and offshore lands in the USA.

Map of U.S. interstate and intrastate natural gas pipelines



Source: U.S. Energy Information Administration, *About U.S. Natural Gas Pipelines*

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At the same time, the transportation infrastructure increased substantially in the USA. Coincidentally in the Gulf of Mexico region, as the offshore energy industry expanded offshore, investment in the onshore transportation infrastructure grew as well. These early investments in the economic development of the offshore energy sector in the Gulf of Mexico region facilitated a symbiotic relationship with state and local governments by permitting increased investment in the onshore transportation infrastructure. For example, Louisiana experienced an acceleration of road and bridge building post World War II.

*While the World War II era saw little occur in the way of road and bridge building, Louisiana entered an era of booming industry following the war, with new businesses*

<sup>37</sup> *OCS Lands Act History*, BOEM, (**emphasis added**) <https://www.boem.gov/oil-gas-energy/leasing/ocs-lands-act-history>

<sup>38</sup> Source: <https://www.eia.gov/energyexplained/natural-gas/natural-gas-pipelines.php>

*attracted by the state's rich natural resources... In Louisiana, the LDH biennial reports from the 1950s and 1960s tell a clear story of rapid growth and exponential expansion after the pause of the war years. Economic growth and government funding combined to not only increase investment on a grand scale, but to also improve and expand the roadways and bridges statewide.<sup>39</sup>*

**Table 2. Postwar spending trends for the state highway system<sup>131</sup>**

<b>Fiscal year (ending June 30)</b>	<b>New construction contracts issued (in millions)</b>	<b>Miles of highway maintained</b>
1953	\$25	15,170
1955	\$46	15,181
1960	\$112	15,225
1965	\$109	15,475
1970	\$114	16,900

Likewise, Louisiana had to plan for a complex mix of transportation infrastructure challenges.

*In the mid-1920s, when the state began to seriously plan an extensive (and expensive) network of highways, the extent of navigable waterways was estimated to be 5,000 miles, plus “numerous [nonnavigable] streams, lakes, bayous and smaller waterways.” According to the LHC, all of these “must be crossed many times by the 7000 miles included in the State highway system.” While many of the bridges constructed to carry the state's highway system are fairly simple examples, others are enormous and complex structures.*

*Further complicating bridge construction was the need to maintain navigation on many waterways. **It was one thing to build a low and narrow bridge over a river or bayou, but if the waterway being crossed carried water-based traffic, the bridge had to be designed in such a way to allow the boats and barges to pass unhindered.***<sup>40</sup>

Similarly, **the offshore energy industry and local communities in Louisiana have created an economic footprint that is emblematic of the symbiotic relationship with the energy sector in the Gulf of Mexico region.** The Port of Iberia is in the coastal region of Louisiana and strategically sits in between the ports of Houston and New Orleans. The Port of Iberia:

<sup>39</sup> Historic Context for Louisiana Bridges Louisiana Statewide Historic Bridge Inventory Prepared for Louisiana Department of Transportation and Development, Prepared by www.meadhunt.com, p. 29-32, December 2013. [http://wwwsp.dotd.la.gov/Inside\\_LaDOTD/Divisions/Engineering/HBI/Documents1/Historic\\_Context\\_For\\_Louisiana\\_Bridges.pdf](http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/HBI/Documents1/Historic_Context_For_Louisiana_Bridges.pdf) Please note footnote 131 cited in the table: *Summary drawn from Louisiana Department of Highways, Financial and Statistical Reports for years listed, data appears in Director's cover letter to each report (data not available every year).*

<sup>40</sup> Historic Context for Louisiana Bridges Louisiana Statewide Historic Bridge Inventory Prepared for Louisiana Department of Transportation and Development, Prepared by www.meadhunt.com, p. 41, December 2013. [http://wwwsp.dotd.la.gov/Inside\\_LaDOTD/Divisions/Engineering/HBI/Documents1/Historic\\_Context\\_For\\_Louisiana\\_Bridges.pdf](http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/HBI/Documents1/Historic_Context_For_Louisiana_Bridges.pdf)

*Contains a 2,000-acre industrial and manufacturing site is home to over 100 companies involved in oil and gas fabrication and production, materials handling, marine services and more,*

*Provides direct access to Gulf Intracoastal Waterway and access to the Gulf of Mexico through its 13-foot-deep main navigational channel, and*

*Maintains a connection to rail and four-lane roads (future I-49 South corridor), an instrumented 8,000-foot runway general aviation airport is within three miles of the port.<sup>41</sup>*

This does not mean the Atlantic coast region of the USA does not contain substantial transportation infrastructure. This region has experienced extensive investment in transportation infrastructure over the decades. In addition, the Atlantic coast of the USA has substantial and advanced port facilities. The difference rests on the fact that **the transportation infrastructure on Atlantic coast of the USA did not grow in conjunction with a growing energy sector as occurred in the Gulf of Mexico region.** The growth in the Gulf of Mexico region resulted from the commercial activities of the numerous industrial and manufacturing companies “involved in oil and gas fabrication and production, materials handling, marine services and more.”<sup>42</sup>

### *Future Infrastructure Developments*

Parties have begun to understand the steps needed to facilitate the development of the infrastructure needed to reach the renewable energy goals set by states in the Atlantic region. Professionals have also noted that “US ports close to planned offshore wind projects, **particularly in New England, have limited ability to support offshore wind vessels because they lack the necessary space or infrastructure or are behind bridges** that large [wind turbine installation vessels (WTIVs)] or jack-up feeder vessels could not pass underneath.”<sup>43</sup> This contrasts with the infrastructure and bridges in the Gulf of Mexico region that were built and installed at the same time the oil and gas industry moved offshore onto the submerged lands of the Gulf of Mexico.

Moreover, an ISO 2019 study found states could connect 5,800 MW of power generated by offshore wind farms in southern New England without significant onshore upgrades. However, beyond 5,800 MW, significant upgrades are required in transmission and/or HVDC interconnections in Boston.<sup>44</sup> As a result, New England governors signed a NESCOE Vision Document to pursue “a new, regionally-based market framework that delivers reliable electricity service to local homes and business, but that framework must also account for and support States’ clean energy laws in an efficient and affordable manner.”<sup>45</sup> The object of this

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<sup>41</sup> *The Gulf Coast Cajun Connection*, Port of Iberia, (**emphasis added**). <https://www.portofiberia.com/>.

<sup>42</sup> *The Gulf Coast Cajun Connection*, Port of Iberia, (**emphasis added**). <https://www.portofiberia.com/>.

<sup>43</sup> Keiron Greenhalgh, *Jones Act quandary fails to slow US offshore wind momentum*, HIS Markit, Posted 08 January 2021. (**emphasis added**). <https://cleanenergynews.ihsmarkit.com/research-analysis/jones-act-quandary-fails-to-slow-us-offshore-wind-momentum.html>.

<sup>44</sup> Patrick Woodcock, Commissioner Massachusetts DOER, *Massachusetts Offshore Wind Outlook for 2021*, Environmental Business Council of New England (EBC) 8<sup>th</sup> Annual New England Offshore Wind Conference, 2020 Decisions and Outlook for Permits, Procurements and Ports, <https://reglobal.co/wp-content/uploads/2021/01/Offshore-Wind-in-New-England.pdf>

<sup>45</sup> Report to the Governors: Advancing the Vision, NESCOE, June 29, 2021, [https://nescoe.com/resource-center/advancing\\_the\\_vision/](https://nescoe.com/resource-center/advancing_the_vision/)

framework is to understand the conditions and needs to meet these clean energy targets in the following areas:

*Onshore system upgrades, including specific areas that need strengthening,*

*Offshore systems that may be needed to support offshore wind resources,*

*Potential options that should be explored, including non-transmission alternatives, and*

*The impact of DERs (both distributed generation and flexible load sources) on transmission needs.<sup>46</sup>*

In that vein, New York City has taken action to become one of the largest port facilities for offshore wind farm parts in the United States when “Mayor Eric Adams announced ... that the South Brooklyn Marine Terminal will be upgraded to handle very large and specific offshore wind turbine construction parts.”<sup>47</sup>

Furthermore, the federal government has also provided legislative support to facilitate infrastructure investment via the Infrastructure Investment and Jobs Act (IIJA) passed by Congress and signed by President Biden in late 2021. [The IIJA] provides:

*\$550 billion in new spending, over the next eight years. In addition to significant spending on ‘traditional’ infrastructure like roads and bridges, the IIJA includes major provisions important to the energy industry, ranging from significant support for electrification of the transportation system to building out the nation’s electric transmission grid and renewable power.<sup>48</sup>*

In addition, the Biden Administration has announced that \$30 million from IIJA will “fund research and development projects that will lower costs for wind energy projects on land and offshore to benefit communities across the country.”<sup>49</sup>

## **Infrastructure Challenges and Opportunities**

### *Wind Catcher Project*

Siting and installation of electric transmission lines can create controversy in local communities. For example, the Wind Catcher projects in the panhandle of Oklahoma envisioned siting and installing “a new, dedicated 360-mile (580km), 765kV overhead transmission line that would have brought Wind Catcher's electricity across Oklahoma east to

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<sup>46</sup> Report to the Governors: Advancing the Vision, NESCOE, June 29, 2021, [https://nescoe.com/resource-center/advancing\\_the\\_vision/](https://nescoe.com/resource-center/advancing_the_vision/)

<sup>47</sup> NYC to turn Brooklyn port into a hub for offshore wind farm construction, CNBC, published March 3, and updated March 4, 2022, <https://www.cnbc.com/2022/03/03/nyc-turning-south-brooklyn-marine-terminal-into-hub-for-wind-farm-parts.html>.

<sup>48</sup> *The Bipartisan Infrastructure Package: What it Means for Energy and Climate*, The National Law Review, Tuesday, November 16, 2021, <https://www.natlawreview.com/article/bipartisan-infrastructure-package-what-it-means-energy-and-climate>

<sup>49</sup> *Biden-Harris Administration Announces \$30 Million from Bipartisan Infrastructure Law to Speed Up Wind Energy Deployment*, October 18, 2022, <https://www.energy.gov/articles/biden-harris-administration-announces-30-million-bipartisan-infrastructure-law-speed-wind>

PSO and SWEPCO customers. **That line was controversial and costly.**<sup>50</sup> As a result, AEP redesigned the projects by “not proposing to build anything transmission-related to this project at this time...These projects are closer to the existing grid and will use local interconnections.”<sup>51</sup>

### *Plains and Eastern Clean Line Transmission Project*

Likewise in 2018, the Plains & Eastern Clean Line transmission project suffered a similar outcome. The U.S. Department of Energy (DOE) and Clean Line Energy had planned on the Plains & Eastern Clean Line transmission project to “deliver 4 GW of wind power from the Oklahoma Panhandle region to utilities and customers in Tennessee, Arkansas, and other markets in the Mid-South and Southeast.”<sup>52</sup> Opponents of the project were concerned the “federal government would use its power of eminent domain to build the line, forcing landowners to sell their property against their will.”<sup>53</sup>

### *The IJA Electric Transmission Line Provisions – Congress Tries to Overcome Transmission Line Roadblocks*

Overcoming this kind of transmission line controversy was one of the objectives of the IJA. Congress used the IJA to amend Section 216 of the Federal Power Act to overcome two previous Federal Circuit court decisions and thus reinvigorate the DOE’s and the Federal Energy Regulatory Commission’s (“FERC”) backstop transmission siting authority to preempt states from blocking or hindering the siting of interstate transmission lines.

Initially established by the Energy Policy Act of 2005, Section 216 allows FERC to issue permits with eminent domain authority to transmission projects located in national interest electric transmission corridors (“National Interest Corridors”).<sup>54</sup> “In designating National Interest Corridors, [the] DOE must look to a variety of factors, including whether a lack of adequate electricity is imposing economic constraints on a particular region of the country, and non-economic factors such as whether a designation would serve the national interests and whether it would promote energy independence.”<sup>55</sup>

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<sup>50</sup> Andrew Lee in London and Richard A. Kessler, *AEP bounces back from Wind Catcher loss with bold \$2bn US plan*, Recharge News, Published 16 July 2019 updated 17 July 2019, <https://www.rechargenews.com/wind/aep-bounces-back-from-wind-catcher-loss-with-bold-2bn-us-plan/2-1-638821>

<sup>51</sup> Andrew Lee in London and Richard A. Kessler, *AEP bounces back from Wind Catcher loss with bold \$2bn US plan*, Recharge News, Published 16 July 2019 updated 17 July 2019, <https://www.rechargenews.com/wind/aep-bounces-back-from-wind-catcher-loss-with-bold-2bn-us-plan/2-1-638821>

<sup>52</sup> Michelle Froese, *DOE & Clean Line Energy end partnership on Plains & Eastern transmission project*, Windpower Engineering & Development, March 27, 2018, <https://www.windpowerengineering.com/doe-clean-line-energy-end-partnership-on-plains-eastern-transmission-project/>

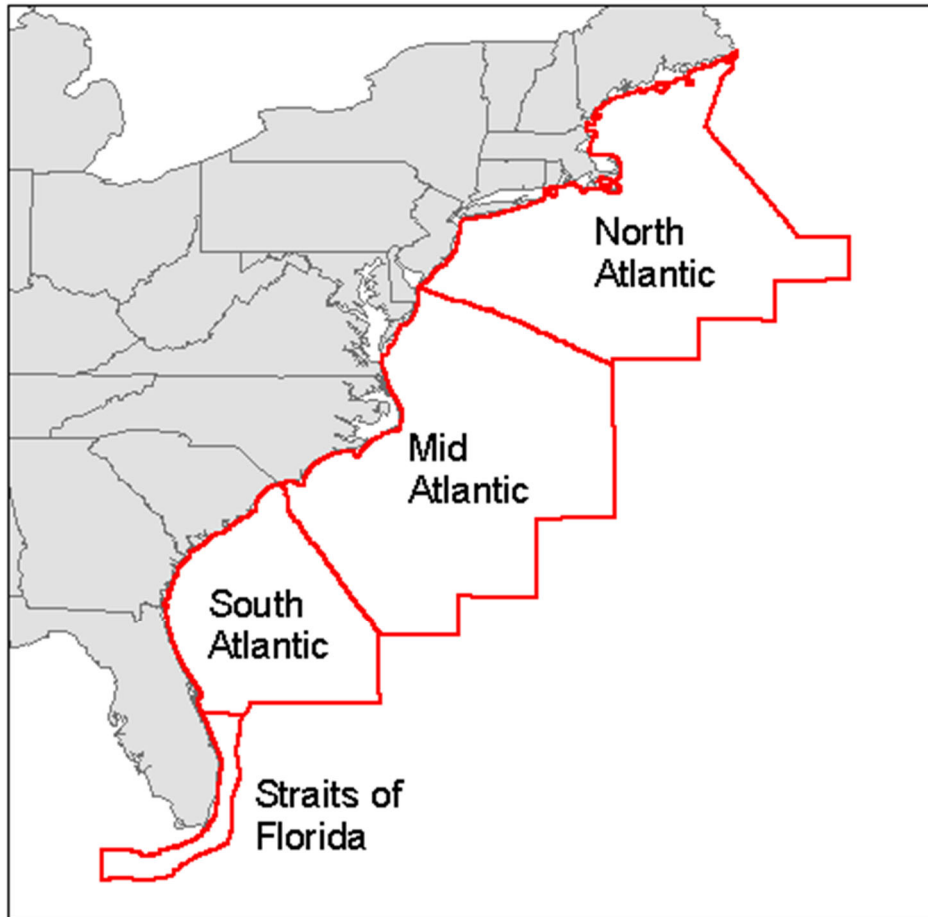
<sup>53</sup> Frank E. Lockwood, *Plan to build power line across state out of steam*, Arkansas Democrat Gazette March 24, 2018 <https://www.arkansasonline.com/news/2018/mar/24/plan-to-build-power-line-across-state-o/>

<sup>54</sup> *The Bipartisan Infrastructure Package: What it Means for Energy and Climate*, The National Law Review, Tuesday, November 16, 2021, <https://www.natlawreview.com/article/bipartisan-infrastructure-package-what-it-means-energy-and-climate>

<sup>55</sup> Boris Shkuta, Michael W. Brooks, Stephen J. Hug, Rachael Novier Marsh, and Catherine P. McCarthy, *Electricity Transmission Provisions in the Bipartisan Infrastructure Bill*, Bracewell Blog Post, November 18, 2021, p. 19.

*A Broad Energy Mix is Possible on the Atlantic OCS – According to an API Study*

As a kind reminder, BOEM has divided the Atlantic OCS into four planning areas (1) North Atlantic, (2) Mid-Atlantic, (3) South Atlantic, and (4) Straits of Florida.<sup>56</sup>



In 2018, the strategic advisory firm Calash prepared a study through the American Petroleum Institute to assess the economic impact of developing oil and natural gas resources on the known Atlantic formations in the federal submerged lands as identified in BOEM reports.<sup>57</sup>

<sup>56</sup> Oil and Gas – Atlantic, BOEM, <https://www.boem.gov/oil-gas-energy/mapping-and-data/atlantic-cadastral-data>

<sup>57</sup> Sean Shafer and Cameron Lynch, *The Economic Impacts of Allowing Access to the Atlantic OCS for Oil and Natural Gas Exploration and Development*, Prepared For: The American Petroleum Institute (API), Prepared By: Calash, 2018, p. 18.

**Table 2: Atlantic OCS Plays as Identified by BOEM Report**

Play	Planning Area(s)
Late Jurassic-Early Cretaceous Carbonate Margin	North, Mid, South
Cretaceous & Jurassic Marginal Fault Belt	Mid
Cenozoic - Cretaceous & Jurassic Carolina Trough Salt Basin	Mid
Jurassic Shelf Stratigraphic	North, Mid
Cretaceous & Jurassic Interior Shelf Structure	North, Mid
Cretaceous & Jurassic Blake Plateau Basin	Mid, South
Triassic - Jurassic Rift Basin	North
Cretaceous & Jurassic Hydrothermal Dolomite	North
Cenozoic - Cretaceous & Jurassic Paleo-Slope Siliciclastic Core	North, Mid
Cenozoic - Cretaceous & Jurassic Paleo-Slope Siliciclastic Extension	North, Mid, South

Source: Bureau of Ocean Energy Management

Calash excluded from the assessment:

- Any potential benefits from the development of onshore downstream infrastructure,
- The calculated government revenue potential from personal income taxes, corporate income taxes or local property taxes,
- The potential development of additional oil and natural gas resources not identified in the BOEM report even though new formations will likely be found as the area is developed, and
- The Straits of Florida planning area.<sup>58</sup>

The report assumed the revenue was split between the affected states at a level of 37.5 percent and 62.5 percent to the federal government in a scenario like the Gulf of Mexico and without any cap on state government revenue. The report also noted the “actual revenue proportion going to state governments, if any, would be determined by future legislation.”<sup>59</sup>

The report summarized the potential impacts of oil and gas development of the federal submerged lands of the Atlantic OCS in the following table.

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<sup>58</sup> Sean Shafer and Cameron Lynch, *The Economic Impacts of Allowing Access to the Atlantic OCS for Oil and Natural Gas Exploration and Development*, Prepared For: The American Petroleum Institute (API), Prepared By: Calash, 2018, p. 5.

<sup>59</sup> Sean Shafer and Cameron Lynch, *The Economic Impacts of Allowing Access to the Atlantic OCS for Oil and Natural Gas Exploration and Development*, Prepared For: The American Petroleum Institute (API), Prepared By: Calash, 2018.

**Table 1: Summary Table Potential Impacts from Atlantic Oil and Natural Gas Development<sup>34</sup>**

Economic Impact	First Leasing + 3 Years	First Leasing + 10 Years	First Leasing + 20 Years	Cumulative 20 Years
Capital Investment and Spending (\$Billions)	\$1.7	\$16.0	\$20.4	\$259.6
Employment	21,045	195,371	264,298	N/A
Contributions to Economy - GDP (\$Billions)	\$1.8	\$15.5	\$21.8	\$260.7
Federal / State Government Revenue (\$Billions)	\$0.6	\$1.6	\$5.9	\$52.5
Natural Gas and Oil Production (MMBOED)	0	0.25	1.46	4 Billion BOE

Source: Calash

Similarly, the report stated:

*As the Atlantic OCS is developed, it is projected that suppliers of offshore oil and natural gas equipment will take advantage of the high-tech manufacturing capabilities of the Atlantic coast states, as well the extensive port infrastructure already in place. An increased amount of equipment and services is expected to originate from Atlantic coast states. Production in the region is projected to lead to significantly lower transportation costs, as well as allowing suppliers to diversify their workforce nationally. By the end of the forecast period, 71 percent of domestic spending on Atlantic OCS oil and natural gas developments is projected to accrue to the Atlantic coast states reaching over \$14.5 billion per year. Other U.S. state spending in at the end of the forecast period is projected to be over \$4 billion.*

*Over the full forecast period, the largest share of spending due to Atlantic OCS offshore oil and natural gas development occurs in the Atlantic coast states themselves, with nearly \$150 billion spent cumulatively. Cumulative spending in other US states is projected at over \$75 billion.<sup>60</sup>*

#### *Atlantic Seaboard Navigable Waterways – America's Maritime Superhighway*

As part of the extensive port system on the Atlantic coast, we must not overlook the extensive, interconnected network of navigable waterways along the eastern seaboard that includes the Gulf of Mexico and the Great Lakes region. These navigable waterways provide extensive transport opportunities to support the logistical needs of the energy industry. As highlighted below, the United States has more than 25,000 mi (40,000 km) of navigable waters with most of important waterways of the United States connecting the Mississippi River System, Gulf Coast and intercoastal waterways on the Atlantic coast. The wetter climate and flatter terrain in the eastern half of the United States (especially in the midcontinent and along the east coast) is the main reason most of the navigable rivers and canals in the United States are in the eastern half of the country.<sup>61</sup> **This interconnected network of navigable waterways of the eastern United States provides a maritime highway for transporting natural resources such as natural gas, carbon dioxide, and hydrogen in vessels that helps mitigate the litigation roadblocks of state governments (including state politicians and state courts) by placing the transport of these energy resources within the jurisdiction of federal regulators and federal courts.**

<sup>60</sup> Sean Shafer and Cameron Lynch, *The Economic Impacts of Allowing Access to the Atlantic OCS for Oil and Natural Gas Exploration and Development*, Prepared For: The American Petroleum Institute (API), Prepared By: Calash, 2018, p. 34.

<sup>61</sup> Map Source: <https://alchetron.com/Inland-waterways-of-the-United-States>



Source: USACE Institute for Water Resources

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Overtime, we Americans may have forgotten how valuable a resource our navigable waterways are to our economic vitality and environmental wellbeing. As challenges (including Not in My Back Yard challenges, “NYMBY”) to energy transportation infrastructure increase and roadways get more and more congested,

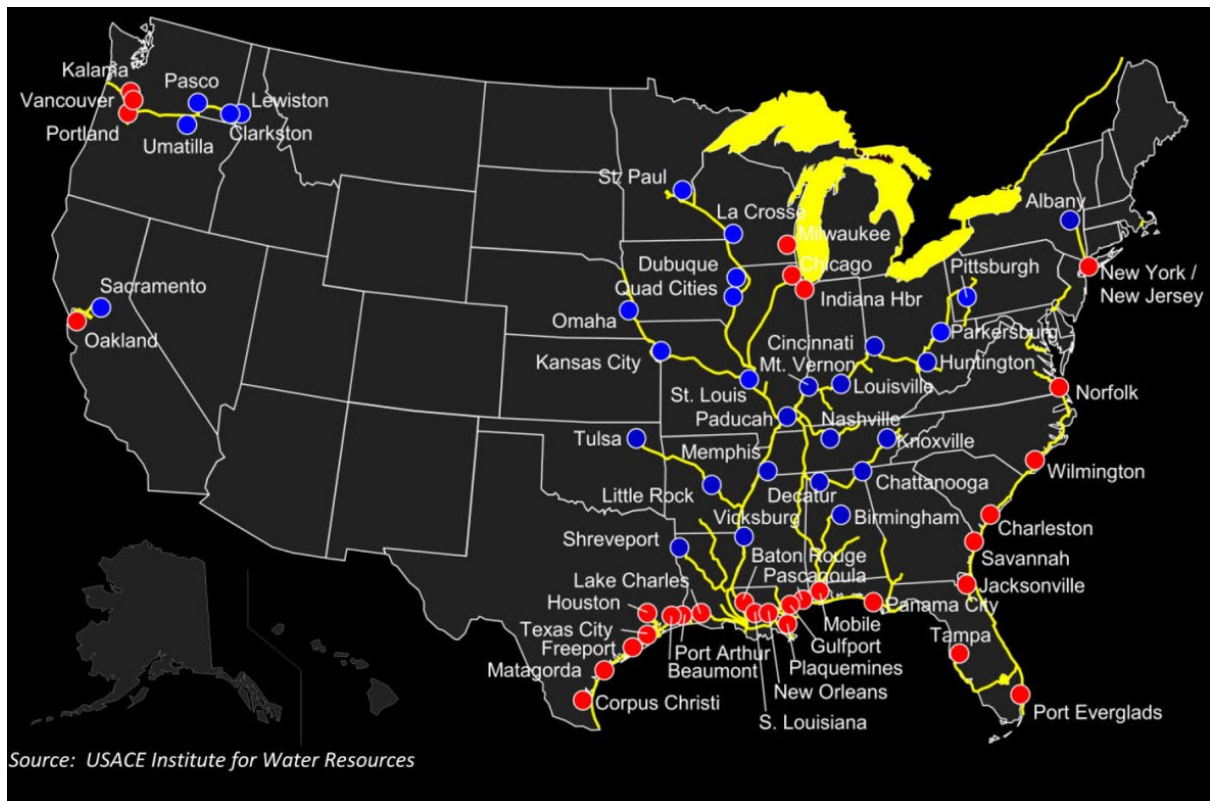
*[we] are sitting on vast unused transportation capacity that is ready for action. Investing in effective new ways to move goods will help us achieve outcomes whose benefits extend beyond just mobility--like stimulating growth, advancing sustainability, and reducing congestion on our roadways.*

*Using our waterways more effectively is one way to reach those outcomes.*

*Under the “America’s Marine Highway” program, the Department’s Maritime Administration (MARAD) will help identify rivers and coastal routes that could be used to carry cargo efficiently, bypassing congested roads around busy ports, reducing greenhouse gases, and creating jobs for mariners and shipbuilders.<sup>63</sup>*

<sup>62</sup> Map Source US Army Corp of Engineers: <https://www.iwr.usace.army.mil/Media/Images/igphoto/2000776558/>

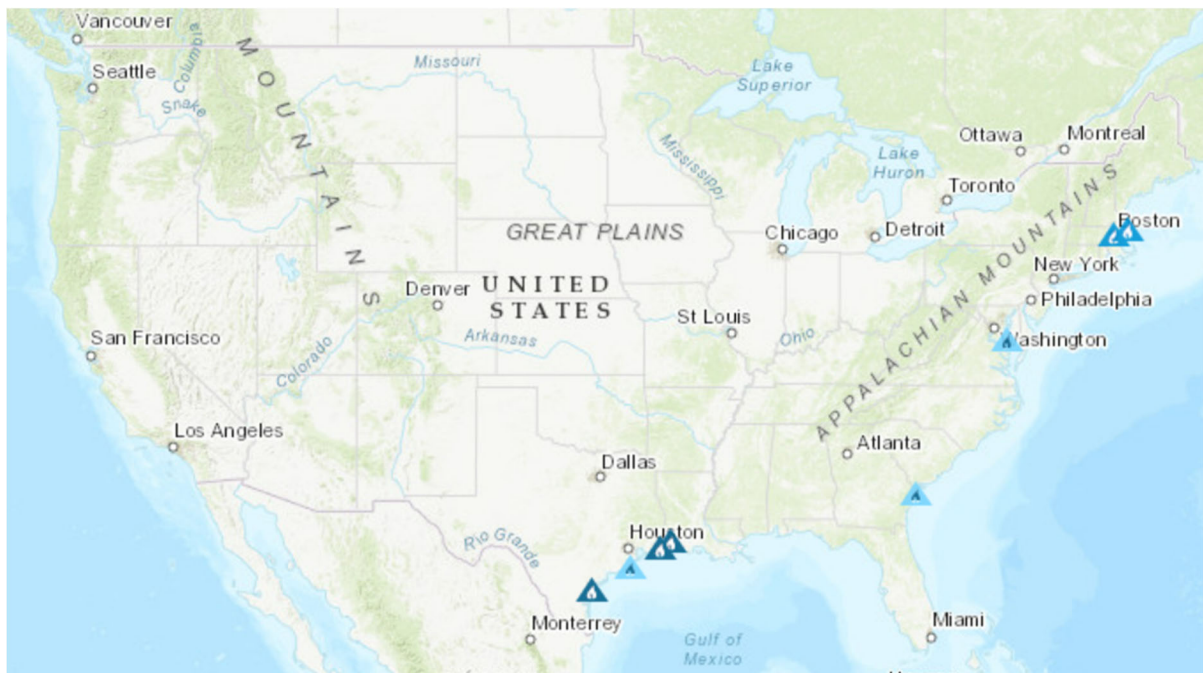
<sup>63</sup> *America's waterways, poised to deliver the goods*, US DOT, **Emphasis added**. <https://usdotblog.typepad.com/secretarysblog/2010/04/americas-waterways-poised-to-deliver-the-goods.html#.YwjtktrMKM8>






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<sup>64</sup> J Roland Willis, The Impacts of Dredging U.S. Waterways – What to Do with Mount Everest? Energy and Environmental Policy 2016, October 21 2016, <https://eepolicy2016.wordpress.com/2016/10/21/the-impacts-of-dredging-u-s-waterways-what-to-do-with-mount-everest/>

Equally important, these navigable waterways are in proximity to numerous ports and LNG facilities also in the eastern seaboard of the USA.



-  LNG Import/Export Terminal
-  LNG Export Terminal
-  LNG Import Terminal

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## Technology

### *Advancements in Vessel Capabilities*

Additionally, companies are endeavoring to develop new technologies enhancing the sustainability of maritime vessels. Similarly, carbon capture is a critical aspect of decarbonizing the environment. As the energy industry seeks to decarbonize operations, there exist a need to transport the carbon dioxide from source locations to sites for long term storage or utilization. However, transport via pipelines over long distances can be expensive and controversial in local communities. “In an attempt to solve the transportation puzzle for carbon capture technologies, two researchers at the University of Houston, Texas have proposed filling up LNG carriers with liquefied carbon dioxide on their backhaul routes.... [Likewise] there are already patents and designs to build ships with the exact specifications for dual-use shipping of LNG and carbon, though it is only approved for smaller ships at present.”<sup>66</sup>

<sup>65</sup> Map Source: <https://www.eia.gov/state/maps.php>.

<sup>66</sup> Study: "Dual-Use" LNG Shipping Could Transform Carbon Capture, The Maritime Executive, January 16, 2022, <https://maritime-executive.com/article/study-dual-use-lng-shipping-could-transform-carbon-capture>

Thus, these potential long haul and short transit “dual-use” solutions may help optimize sustainable energy operations on the Atlantic coast in the navigable waterways of East coast region.

### *Wind Turbines*

The offshore wind industry manufacturers plan to have 15-MW wind turbines in commercial production soon. Siemens Gamesa, Vestas, and General Electric have all announced plans to have this class of wind turbines available for 2024 at the latest.<sup>67</sup> This timetable fits with current offshore installation plans for offshore wind energy developers. Correspondingly, the leading Chinese manufacturer, MingYang, plans on producing a 16-MW wind turbine for the commercial market by 2024.<sup>68</sup> In addition, as part of the deployment of these new class of wind turbines, the manufacturers face inflation and supply chain challenges. These volatile conditions may impact investment decisions and delay some projects in the short term.<sup>69</sup>

The offshore wind industry has made technological progress in advancing the ability to install offshore wind energy projects in deep waters on the Atlantic OCS. As McKinsey and Company noted in a recent report:

*Technological progress is also boosting the outlook for offshore wind. Until recently, turbines have been installed onto bottom-fixed foundations that are grounded in waters with typical depths of up to 50 meters, requiring a relatively shallow continental shelf. Newer, floating foundations, however, can be installed irrespective of the terrain that lies below and may become viable for water depths of 1,000 meters and beyond—an advancement that increases the viable sea area for offshore wind by a factor of five.<sup>70</sup>*

### *Lessons Learned from Overcoming Technical and Logistical Challenges*

Thus, the offshore wind industry will face the same technical and logistical challenges that the oil and gas industry faced in the Gulf of Mexico when the industry moved from the shallow shelf submerged lands of the Gulf of Mexico to the deeper slope and abyssal plain submerged lands. The engineering, geotechnical and logistical lessons learned should help facilitate the development of the offshore energy sector on the Atlantic OCS. Consequently, we should look at the lessons in logistical challenges for moving into the deeper waters of the Atlantic OCS that we have learned in the Gulf of Mexico especially regarding the utilization of the offshore vessels in the planning, developing, constructing, installing, operating, maintaining, decommissioning, and reclaiming (*i.e.*, the fully energy project lifecycle) offshore sites for facilities and infrastructure on offshore energy projects.

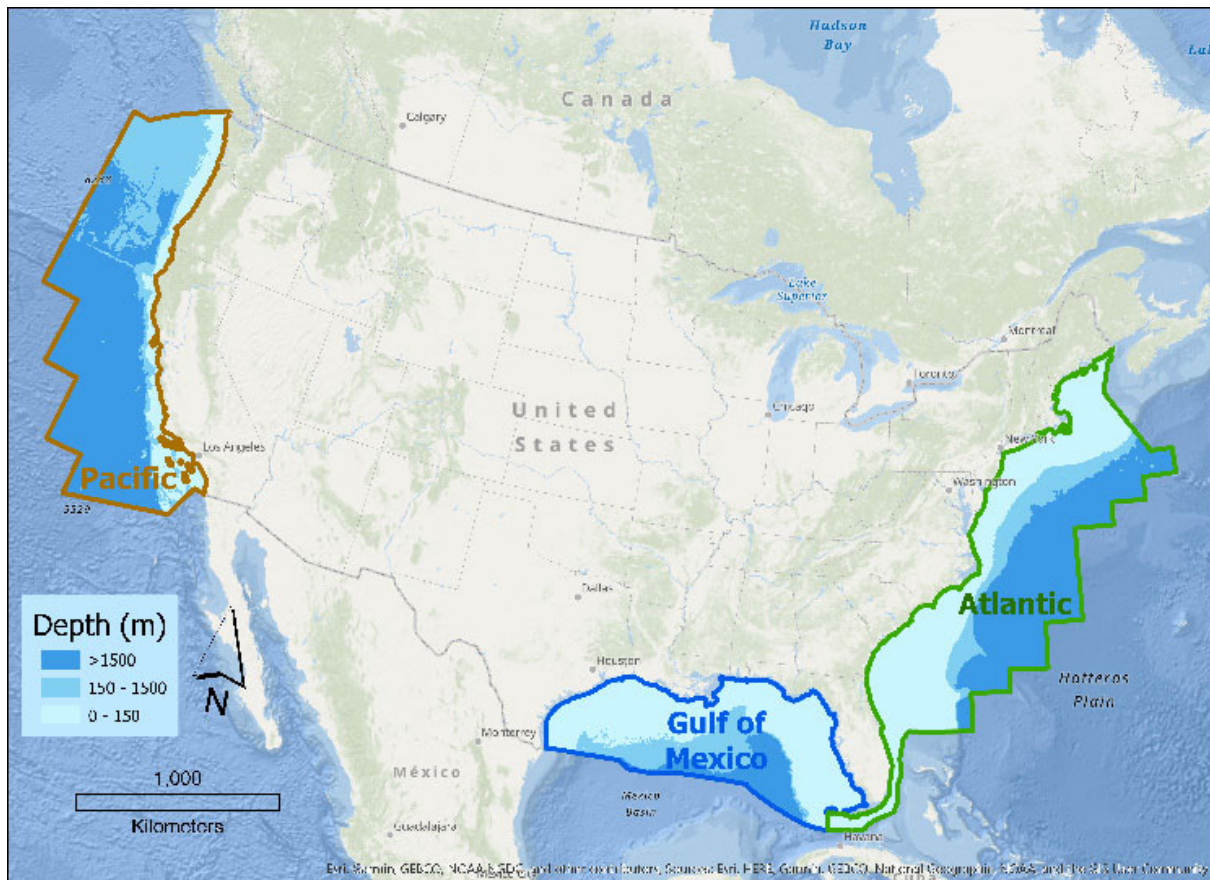
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<sup>67</sup> Offshore Wind Market Report: 2022 Edition, DOE Office of Energy Efficiency and Renewable Energy, p. 70, <https://www.energy.gov/eere/wind/articles/offshore-wind-market-report-2022-edition>.

<sup>68</sup> Offshore Wind Market Report: 2022 Edition, DOE Office of Energy Efficiency and Renewable Energy, p. 70, <https://www.energy.gov/eere/wind/articles/offshore-wind-market-report-2022-edition>.

<sup>69</sup> Anmar Frangoul, *Wind turbine maker warns of volatile business environment as inflation and supply chain issues bite*, CNBC, published January 26, 2022, <https://www.cnbc.com/2022/01/26/wind-energy-faces-tough-2022-as-supply-chain-issues-persist-vestas.html>.

<sup>70</sup> How to succeed in the expanding global offshore wind market, McKinsey and Company, April 20, 2022, <https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/how-to-succeed-in-the-expanding-global-offshore-wind-market>



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### *Offshore Vessels and the Jones Act*

The Jones Act has impacted the oil and gas industry over the decades by requiring a US built, owned, and crewed vessel transport cargo between two points in the USA (including onshore and offshore submerged lands of the USA). Likewise, the Jones Act has begun to have a substantial impact on the nascent US offshore wind industry. Therefore, wind farm developers must consider the US Customs and Board Protection's ("CBP") rulings in applying "the Jones Act limits [to] the transportation of "merchandise" between U.S. coastwise points to vessels that are built and registered in the United States and are owned by a U.S. citizen."<sup>72</sup>

### *Section 4(a) of the OCSLA includes "non-mineral energy resources" in the definition of coastwise points*

Some people have questioned the extent that "the Outer Continental Shelf Lands Act, and therefore the Jones Act, applies to offshore wind farms [located on the OCS]."<sup>73</sup> However,

<sup>71</sup> Outer Continental Shelf, BOEM, <https://www.boem.gov/environment/outer-continental-shelf>.

<sup>72</sup> U.S. Customs Agency Issues Guidance on Jones Act Compliance in Connection with Offshore Wind Projects, The National Law Review, June 1, 2022, <https://www.natlawreview.com/article/us-customs-agency-issues-guidance-jones-act-compliance-connection-offshore-wind>

<sup>73</sup> John Frittelli, Shipping Under the Jones Act: Legislative and Regulatory Background, Congressional Research Service, November 21, 2019, p. 9. <https://crsreports.congress.gov/product/pdf/R/R45725/4>

when Congress passed the EPLA, Congress granted the BOEM lead management authority under the OCSLA for marine renewable energy projects on Federal offshore submerged lands and other projects as an alternative use of the OCS. Arguing the Jones Act did not apply missed the point that Congress was permitting additional uses of the OCS and overlooked that Congress had not expressly changed the background law regulating operations that support those additional activities on the OCS. Please note Section 4(a) of the OCSLA applies more background law than just the Jones Act to OCS operations.

**Congress has now erased any doubt concerning the applicability of the Jones Act to OCS wind farm operations.** When Congress passed the **Garamendi Amendment** in January 2021 as part of the National Defense Authorization Act, Congress expressed the intent to maintain the background law regulating Jones Act operations that supported those additional activities on the OCS.<sup>74</sup> **To provide this clarity, Congress amended Section 4(a) of the OCSLA to explicitly include “non-mineral energy resources” in the definition of coastwise points.**

*The Constitution and laws and civil and political jurisdiction of the United States are extended, to the same extent as if the outer Continental Shelf were an area of exclusive Federal jurisdiction located within a State, to—*

*(i) the subsoil and seabed of the outer Continental Shelf;*

*(ii) all artificial islands on the outer Continental Shelf;*

*(iii) installations and other devices permanently or temporarily attached to the seabed, which may be erected thereon for the purpose of exploring for, developing, or producing resources, **including non-mineral energy resources**; or*

*(iv) any such installation or other device (other than a ship or vessel) for the purpose of transporting or transmitting such resources.<sup>75</sup>*

As a result, the Department of Energy has noted the nonavailability of Jones Act-compliant ‘Tower Installation Vessels’ (TIVs) can be a hindrance to offshore wind farm development, especially for installations in deeper water.”<sup>76</sup> In May 2020, Dominion Energy announced a plan to build a Jones Act-compliant TIV at Keppel AmFELS' Brownsville, Texas, shipyard and bring the vessel in to service by 2023. “Dominion said the vessel is designed to handle current turbine technologies as well as next generation turbines of 12MW or more and will also be

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<sup>74</sup> William M. (Mac) Thornberry *National Defense Authorization Act for Fiscal Year 2021*, H.R. 6395, Part 4 of 4, 116th Cong. (2020) (enacted); [https://garamendi.house.gov/sites/garamendi.house.gov/files/GARAME\\_200\\_xml-11\\_25\\_2020.pdf](https://garamendi.house.gov/sites/garamendi.house.gov/files/GARAME_200_xml-11_25_2020.pdf).

<sup>75</sup> OCSLA, [The Act of August 7, 1953, Chapter 345, as Amended] [As Amended Through P.L. 117–58, Enacted November 15, 2021] (**emphasis added**), <https://www.govinfo.gov/content/pkg/COMPS-857/pdf/COMPS-857.pdf> See also Jessie Elizabeth Shifalo, *The Garamendi Amendment: How Four Words Changed The Entire Offshore Wind Industry In America*, American Bar Association, Admiralty and Maritime Law Committee, [https://www.americanbar.org/groups/tort\\_trial\\_insurance\\_practice/committees/admiralty-maritime/the-garamendi-amendment/](https://www.americanbar.org/groups/tort_trial_insurance_practice/committees/admiralty-maritime/the-garamendi-amendment/)

<sup>76</sup> John Frittelli, *Shipping Under the Jones Act: Legislative and Regulatory Background*, Congressional Research Service, November 21, 2019, p. 9. <https://crsreports.congress.gov/product/pdf/R/R45725/4>

capable of installing foundations for turbines and other heavy lifts. The vessel is expected to enter service in 2023.”<sup>77</sup>

### *Impact of the Nonavailability of Jones Act-compliant Vessels for Specialized Vessel Operations*

This nonavailability of Jones Act-compliant vessels for specialized vessel operations also impacted the oil and gas industry in the Gulf of Mexico. Likewise, energy companies and contractors have had to file and obtain a ruling from CBP on the use of foreign flagged vessels prior to conducting specialized pipelay and platform installation operations on the submerged lands of the Gulf of Mexico to ensure the proposed specialized vessel operations would not constitute a violation of the Jones Act. Due to the nonavailability of the “fit for purpose” Jones Act compliant vessels for oil and gas pipelay and platform installations especially in the deep-water of the Gulf of Mexico, operators, contractors and law firms have had to use creative thinking in filing CBP inquiries to mitigate the risk of the CBP finding that the planned offshore operation would constitute a violation of the Jones act.<sup>78</sup> Similarly, the CBP has ruled in certain specific activities such as cable laying don’t violate the Jones Act.<sup>79</sup> This interpretation in the offshore wind industry is consistent with the CBP’s rulings in cable laying for oil and gas operations in the Gulf of Mexico.<sup>80</sup>

Likewise, the following schematic details an example of an “Offshore Wind Installation in U.S. Waters Using a Foreign-Flag Installation Vessel and Jones Act-Compliant Feeder Vessels,” and this illustrates some of the challenges of complying with the Jones Act in turbine installation.<sup>81</sup>

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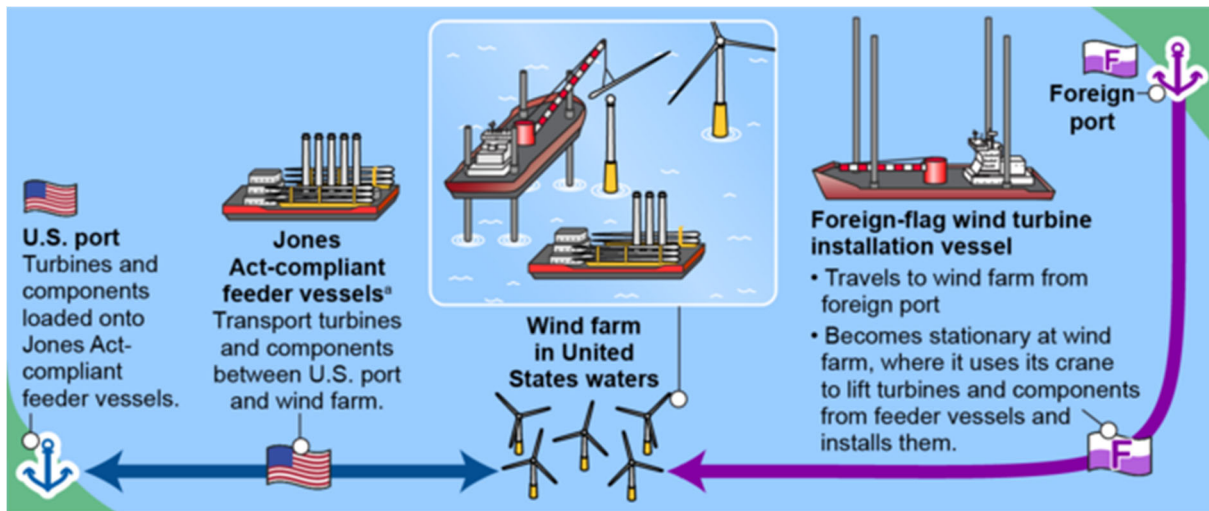
<sup>77</sup> Keiron Greenhalgh, *Jones Act quandary fails to slow US offshore wind momentum*, HIS Markit, January 8, 2021, <https://cleanenergynews.ihsmarkit.com/research-analysis/jones-act-quandary-fails-to-slow-us-offshore-wind-momentum.html>.

<sup>78</sup> See CBP Ruling in the Customs Ruling Online Search System (CROSS), HQ 115985 *Carriers Coastwise Trade; Launch Barge; Truss Spar Platform*; 46 U.S.C. App. §883 5/21/2003.

<sup>79</sup> U.S. Customs Agency Issues Guidance on Jones Act Compliance in Connection with Offshore Wind Projects, The National Law Review, June 1, 2022, <https://www.natlawreview.com/article/us-customs-agency-issues-guidance-jones-act-compliance-connection-offshore-wind>

<sup>80</sup> See CBP Ruling in the Customs Ruling Online Search System (CROSS), HQ 115487: *Coastwise Trade; Outer Continental Shelf; Pipe-laying; Umbilical/ Methanol Line-Laying*; 43 U.S.C. § 1333(a); 46 U.S.C. App. §§ 289, 883, Ruling Date: Nov 20, 2001

<sup>81</sup> *Offshore Wind Energy: Planned Projects May Lead to Construction of New Vessels in the U.S., but Industry Has Made Few Decisions amid Uncertainties*, U.S. Government Accountability Office, December 8, 2020, <https://www.gao.gov/products/gao-21-153>



Source: GAO. | GAO-21-153

## Governmental Policy

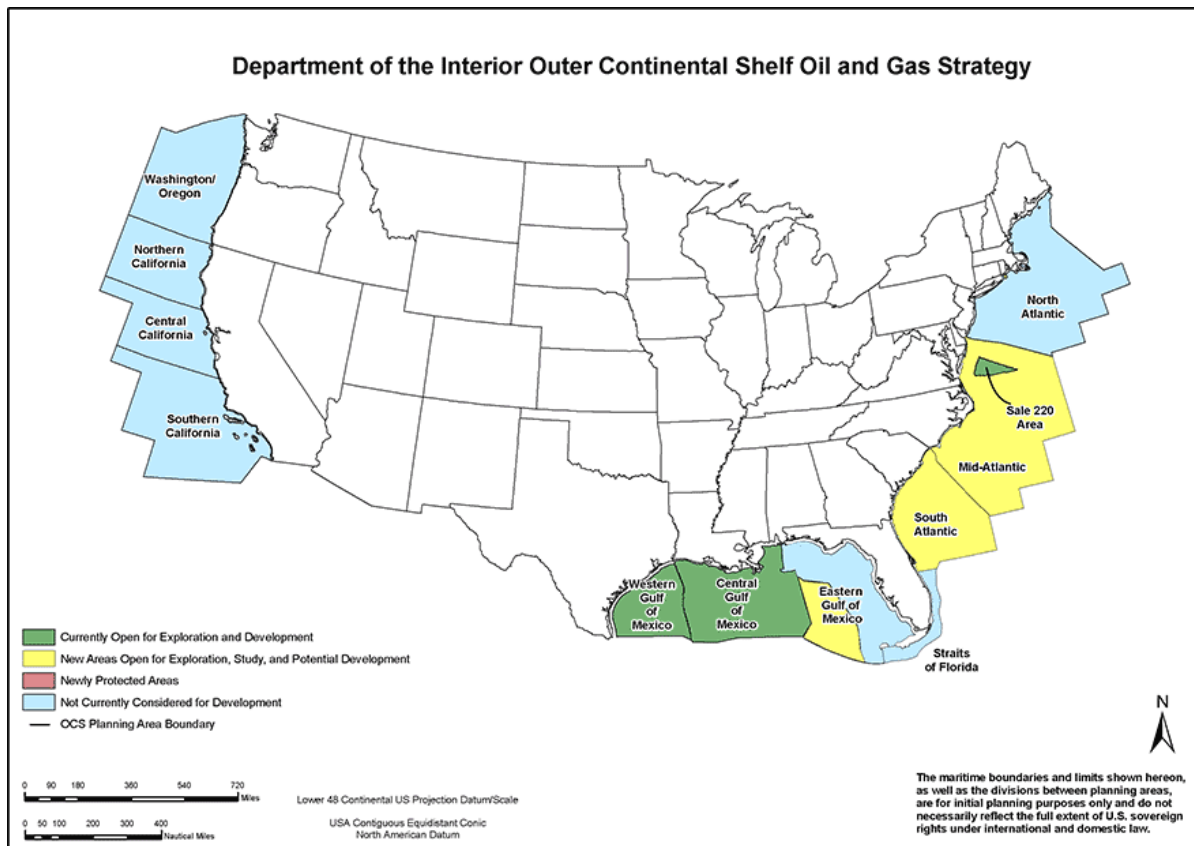
### *Historical views*

Generally, the Obama administration had a sustainable all-inclusive energy policy even on the Atlantic OCS. In February 2012, President Obama stated that America needs a “sustained all-of-the-above energy that develops available source of American energy.”<sup>82</sup> As a result, the Obama administration was **pursuing an all-of-the-above energy strategy on the US Outer Continental Shelf while still protecting our nation’s fisheries, tourism, and preserving “places off our coasts that [were] too special to drill.”**<sup>83</sup> The Administration worked to expand energy development and production in these new areas, including the Eastern Gulf of Mexico; significantly increase oil and gas **exploration in frontier areas**, such as the Arctic Ocean and areas **in the Atlantic Ocean**; and protect areas that [were] simply too special to drill, such as Alaska's Bristol Bay.”<sup>84</sup>

<sup>82</sup> Pres. Obama's approach to energy policy, February 25, 2012, YouTube, <https://www.youtube.com/watch?v=VL1JDA-AFME>

<sup>83</sup> Source: Obama Administration - *Atlantic, Gulf of Mexico and Pacific Region Strategies*, New Energy Frontier, DOI, (**emphasis added**) <https://www.doi.gov/energy/ocs/lower48-strategy>

<sup>84</sup> Source: Obama Administration - *Atlantic, Gulf of Mexico and Pacific Region Strategies*, New Energy Frontier, DOI, (**emphasis added**) <https://www.doi.gov/energy/ocs/lower48-strategy>



In 2014, the BOEM undertook action to kickoff development offshore wind resources on the Atlantic OCS.<sup>85</sup>

### *Current View*

In 2021, the BOEM announced the “Offshore Wind Leasing Path Forward 2021– 2025,” including plans in new offshore wind lease auctions in various U.S. regions the Atlantic region (*i.e.*, New York Bight, Carolina Long Bay, Gulf of Mexico, Central Atlantic, and the Gulf of Maine).<sup>86</sup> Similarly, the Biden administration has the objective to obtain 30-GW of offshore wind power by 2030 and 110 GW or more of offshore wind energy by 2050. The Biden administration claims, “further research is needed to determine the extent of offshore wind energy’s role in a decarbonized energy future, but offshore wind energy market indicators suggest it will be a substantial part of a comprehensive U.S. decarbonization strategy.”<sup>87</sup> Likewise, the Biden administration released on July 1, 2022, the federal offshore drilling program for years 2023 through 2028, which would ban exploration on the Atlantic OCS.<sup>88</sup>

<sup>85</sup> *BOEM Seeks Industry Interest In Wind Energy Development Offshore New York*, BOEM, 05/27/2014, <https://www.boem.gov/newsroom/press-releases/boem-seeks-industry-interest-wind-energy-development-offshore-new-york>

<sup>86</sup> *Offshore Wind Market Report: 2022 Edition*, DOE Office of Energy Efficiency and Renewable Energy, August 16, 2022, p. 7. <https://www.energy.gov/eere/wind/articles/offshore-wind-market-report-2022-edition>.

<sup>87</sup> *Offshore Wind Market Report: 2022 Edition*, DOE Office of Energy Efficiency and Renewable Energy, p. xi, <https://www.energy.gov/eere/wind/articles/offshore-wind-market-report-2022-edition>.

<sup>88</sup> Dino Grandoni, Tyler Pager and Maxine Joselow, *Biden opens door to more offshore drilling, despite earlier climate vow*, Washington Post, July 1, 2022, <https://www.washingtonpost.com/climate-environment/2022/07/01/biden-offshore-drilling-climate/>.

States along the Atlantic coast have laid the legal foundation to establish an offshore wind power sector. As part of this process, eight states plan on generating “a total 39 gigawatts of capacity by 2040. Many have invested in ports, workforce development, transmission infrastructure and manufacturing sectors.”<sup>89</sup>

Even government officials in states that have not traditionally focused on climate policy have noted the economic potential of the increase in energy demand.<sup>90</sup> Louisiana state Rep. Jerome Zeringue stated, “**There's going to be a significant increase in energy demand, and it's going to require all forms of energy.**” As Rep. Zeringue **highlighted Louisiana's unique position “to build offshore wind projects, capitalizing on the coastal construction expertise and infrastructure already serving the oil and gas industry .... If you can build an oil rig, you can build a wind turbine, ...We have the infrastructure and the manpower.”**<sup>91</sup>

## Suggested Future Actions and Conclusion

In order to fully accelerate and finance the **energy addition** on the Atlantic coast and specifically the Atlantic OCS to meet America's energy security needs and support the energy security needs of America's allies, we need to apply the lessons that we have learned in our extensive experience in the offshore energy industry. Even though we have a history of investors and governments at the federal, state, and local level providing financial support for the offshore energy industry, those offshore energy projects and the supporting logistical infrastructure are only sustainable with long term cash flow.<sup>92</sup> The contractors that support the offshore energy industry also need positive cash flow and multi-revenue streams.

We know that we are entering **the energy addition that brings together the *Golden Age of New Energy* (such as offshore wind) and the *Heyday of Natural Gas* as part of a holistic sustainable energy mix in enhancing the energy security of the United States and Europe.** Geochemically organic fuels and renewable energy resources can be symbiotically and sustainably developed on the Atlantic OCS. We also know that the offshore energy industry would benefit from both sectors of the offshore energy industry working together to establish an employment base, fabrication yards and other infrastructure needed for a high level of design, construction, installation as well as vessel utilization in compliance with Jones Act requirements.

In addition, the inland waterways and the other navigable waterways of the Atlantic, the Great Lakes and the Gulf of Mexico provide a high level of interconnectivity that helps provide a **uniform legal superhighway** (*i.e.*, US Maritime law) to ease the flow of energy goods needed in the **energy addition**.

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<sup>89</sup> *Offshore Wind Market Report: 2022 Edition*, DOE Office of Energy Efficiency and Renewable Energy, p. vi, <https://www.energy.gov/eere/wind/articles/offshore-wind-market-report-2022-edition>.

<sup>90</sup> Alex Brown, *More States Back Offshore Wind, Citing Economic Potential*, Pew July 29, 2022, <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2022/07/29/more-states-back-offshore-wind-citing-economic-potential>

<sup>91</sup> Alex Brown, *More States Back Offshore Wind, Citing Economic Potential*, Pew July 29, 2022, **Emphasis added.** <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2022/07/29/more-states-back-offshore-wind-citing-economic-potential>

<sup>92</sup> Gene Owens, *Best Practices Guide: Economic & Financial Evaluation of Renewable Energy Projects*, USAID/Office of Energy, Environment and Technology, 2002, p. 15, [https://pdf.usaid.gov/pdf\\_docs/PNADB613.pdf](https://pdf.usaid.gov/pdf_docs/PNADB613.pdf)

Throughout the history of the USA, Presidents starting with George Washington have understood the importance of the bountiful natural resources of the USA. George Washington understood the importance of the new country's navigable waterways so much that President Washington placed numerous paintings of the new country's rivers including the famous Hudson River in the New Room of his home in Mount Vernon, Virginia. As a result, **we should embrace technological advances and the natural resources available** as we endeavor to pursue a sustained all-of-the-above energy policy" in using every available source of American energy **and utilize America's maritime superhighway in advancing our energy security and environmental objectives.**