

## U.S. ATLANTIC SEISMIC SURVEYS

### Summary

- It has been more than 30 years since the U.S. has explored the Atlantic for oil and natural gas energy resources. Approximately 80% of the proposed mid- and south Atlantic lease planning areas has never been surveyed.
- There are currently eight Geological and Geophysical (G&G) permits [pending with BOEM for the Atlantic OCS](#); six of these are for seismic surveys, TGS, GXT (ION), WesternGeco, CGG, Spectrum, and PGS. With the exception of PGS (3D), all seismic surveys proposed are for 2D seismic.
- On July 23, 2014, the BOEM published its Record of Decision (ROD) for Proposed G&G activities in the Mid- and South Atlantic, culminating a four-year review evaluating the assumed environmental effects of seismic and other G&G survey activities proposed on the Atlantic coast. The ROD formally triggered the BOEM's consideration of permits for G&G activities.
- There are many prerequisites and steps to obtaining permits from the BOEM, including site-specific environmental assessments and consultation pursuant to the Endangered Species Act. In the Atlantic ROD, the BOEM made permit approval contingent on the permit applicant also obtaining a Marine Mammal Protection Act (MMPA) authorization from NOAA Fisheries, ensuring the proposed surveys will have no more than a negligible impact on marine mammal stocks.
- Five companies (TGS, ION, WesternGeco, CGG & Spectrum) have pursued their MMPA authorizations or Incidental Harassment Authorizations ("IHA"), many submitting applications immediately following the July 2014 ROD.
- NOAA Fisheries did not deem these IHA applications complete until July 2015. NOAA Fisheries [proposed IHAs](#) for these five surveys in June 2017.
- It has been nearly three years since NOAA Fisheries recognized IHA applications for seismic surveys on the Atlantic OCS as "final and complete" and nearly four years since the BOEM signed its ROD for Atlantic OCS proposed G&G activities.

### History of Seismic Surveys

Seismic surveys for oil and natural gas exploration have been used around the world for more than eight decades and extensively for five decades in the U.S. Gulf of Mexico. These surveys determine characteristics of the earth's subsurface by measuring the physical differences between rock types or physical features without seeing them directly, thereby minimizing the exploration footprint. Seismic surveys produce maps or models that show the earth's geography, stratigraphy, rock distribution and geological structure delineation.

Seismic and geophysical surveys are also used for a variety of other purposes from detecting ground water and checking foundations for roads and buildings, to research for identifying environmental concerns and reducing hazard for such as landslides. They are also used for planning and locating offshore renewable energy facilities.

### Seismic Surveys in the U.S. Atlantic

Seismic surveys are not new to the U.S. Atlantic. Scientific research seismic surveys have been conducted on the Atlantic Outer Continental Shelf (OCS) over the past 50 years, with the most recent surveys occurring in 2014, 2015, and 2017. The September - October 2014 survey collected data along 3,000 miles of trackline in the area of the Outer Banks, North Carolina and used the same technology that is used for oil and gas exploration. The July 2015 scientific research seismic survey was conducted off the coast of New Jersey to record sea level change and its impact on the New Jersey coastline.

There are currently ongoing geophysical surveys on the Atlantic OCS, permitted by BOEM and authorized by NOAA Fisheries to support the site characterization of offshore wind facilities in New York (2017 - ongoing), New Jersey (2017 - ongoing), and Massachusetts (2016-2017), among others.

It is important to note that during this now four-year duration, there have been no reports of injury or even of significant disturbance to marine life from other seismic and geophysical survey activities in the U.S. Atlantic.

The last survey and phase of oil and gas exploration on the U.S. Atlantic OCS ended in 1983. There were approximately 380,000 line-km 2-D seismic data acquired during exploration during the 1970s and 80s and covered less than 20 percent of the mid- and south Atlantic planning areas. Technological advances in the industry have caused existing estimates of the available energy resource to be out of date.

The BOEM currently estimates that the mid- and south- Atlantic OCS holds at least 4.593 billion barrels of oil (BBO) and 38.169 trillion cubic feet (TCF) of natural gas. Its estimates are based on data that is more than 30 years old. The proposed surveys using modern technology will enable the old estimates to be updated and provide a more thorough review of the resource potential, allowing our government to make informed policy decisions about the next steps for potential exploration and development in the Atlantic.

### **The Scientific Record Regarding Seismic Surveys**

Peer-reviewed science and research demonstrate no evidence of injury to marine mammals as a result of sound emitted during seismic surveys. BOEM has spent more than \$50 million on protected species and sound-related research without finding evidence of adverse effects. The geophysical and oil & gas industries, the National Science Foundation, the U.S. Navy, and others have spent a comparable amount on researching impacts of seismic surveys on marine life and have found no evidence of cumulative effects.

Some studies have shown that marine mammal hearing sensitivity may be temporarily affected if exposed to sound at levels encountered very close to an operating seismic sound source. Other studies have found that marine mammals did not react to sounds that would only be realized within a few tens of meters of a typical seismic array. The BOEM and NOAA Fisheries throughout changing political administrations have found no documented scientific evidence of noise from acoustic sources adversely affecting marine animal populations or coastal communities.

Industry continually monitors the effectiveness of the mitigation strategies it employs and funds research to better understand interactions between E&P operations and marine mammals.

### **Key Things to Know**

- Modern seismic surveys are the least intrusive and most effective way to safely explore for oil and natural gas offshore; our experience and scientific research show that over more than five decades of extensive activity there is little-to-no impact on marine mammal populations.
- The bottom line is there are no documented injuries, deaths or significant disturbances from seismic activities in the many decades that seismic has been in regular use around the world.
- The industry appreciates there may be an undiscovered potential that sound from seismic surveys could have adverse environmental consequences and remains committed to taking expensive and elaborate measures to reduce the risk of any such potential, but as-yet undiscovered, effects. That is why we fund independent credible scientific research to investigate any reasonable claims of undiscovered effects.
- The U.S. Atlantic OCS is the only Atlantic margin not being explored and/or produced. There is exploration and production in all the other areas such as offshore Canada, Trinidad & Tobago, Colombia, Brazil, Uruguay, and Argentina and offshore west Africa.
- The geophysical industry is essential to safely producing the energy needed to power our homes and vehicles, empower our businesses and meet the growing energy demand of our world. Our work makes energy possible. Energy starts here.