



Time to Update 1980s Air Quality Standards for Drilling in the Arctic

By Rebecca Lefton September 26, 2014

In late August, the Bureau of Ocean Energy Management, or BOEM, released Royal Dutch Shell's draft plan to explore for oil next summer in Alaska's Chukchi Sea. The Center for American Progress has argued "that there is no safe and responsible way to drill for oil and gas in the Arctic Ocean."¹ However, both Shell and BOEM are moving through the regulatory process with the goal of approving exploratory drilling in the Arctic. Given this reality, federal regulators need to ensure that any offshore drilling proceeds as safely and as responsibly as possible.

Oil drilling in the Arctic poses numerous environmental risks, one of which is increasing emissions of soot- and smog-forming pollutants. Air pollution from offshore drilling operations poses unique risks in the Arctic—risks not found in the Gulf of Mexico, the other federal body of water under BOEM's jurisdiction. For example, the Inupiat people and other native Alaskans spend days, if not longer, hunting, whaling, and fishing as part of their subsistence culture. And oil drilling releases black carbon, a light-absorbing component of particulate matter 2.5, or soot. Although black carbon—a super greenhouse gas—is also released in the Gulf, CAP has shown that it is a particularly potent accelerator of warming and snow and ice melt in the Arctic.²³

When considering applications to drill in the Arctic, BOEM should also consider how oil exploration would affect an Arctic environment already under siege by climate change. The National Snow and Ice Data Center recently announced that the amount of sea ice in the Arctic has fallen dramatically, now covering the sixth-lowest area on record.⁴ This is less than the average minimum recorded between 1981 and 2010.⁵

BOEM has a timely opportunity to ensure that its air quality regulations account for the unique characteristics and vulnerabilities of the Arctic.

Congress recently shifted responsibility for air permitting in the Arctic from the Environmental Protection Agency, or EPA, to BOEM. Unfortunately, BOEM's rules are woefully outdated and are less stringent than those of the EPA. Recognizing these shortcomings, BOEM has announced its intention to update its regulations. This provides BOEM with a crucial opportunity to ensure that regulations not only protect public health but also factor in the vulnerability of the Arctic environment to black carbon and climate change.

Black carbon and climate change in the Arctic

Arctic sea-ice volume has shrunk by 75 percent since the 1980s, and we can expect to see ice-free summers by mid-century.⁶ The Arctic is warming at a rate twice as fast as the rest of the world, partly because of the harsh effects of black carbon pollution on the region's snow and ice.⁷ Black carbon is a main component of soot—the common term for PM 2.5 pollution, or particulate matter that is 2.5 micrometers in diameter or smaller. This is about 30 times smaller than the diameter of an average human hair.⁸ Black carbon is a deadly, widespread air pollutant and a potent driver of climate change, especially in the near term and on a regional basis. In colder, icier regions such as the Arctic, black carbon has a unique and potent impact because it peppers the Arctic snow with heat-absorbing black particles, increasing the amount of heat it absorbs and rapidly accelerating local warming. This acceleration exposes darker ground or water, causing snow and ice melt and lowering the amount of heat reflected away from the Earth.

The darkening effects of black carbon on snow have global implications. Expansive snow and ice in the Arctic act as a mirror, reflecting heat from the sun and cooling the planet. Reducing black carbon emissions will help preserve the sea ice and snow that reflects this heat and keeps our global temperatures from rising too quickly.⁹ Rapid Arctic warming will contribute to global average temperatures rising more than 2 degrees Celsius by 2050—which is the threshold temperature increase scientists agree must not be surpassed if we are to avoid the worst effects of climate change.

Cutting black carbon emissions will temper sea-level rise, which will be increasingly problematic as the Greenland Ice Sheet—a slab of ice roughly three times the size of Texas and nearly two miles thick in places—land glaciers, and the Antarctic ice sheets continue to melt.¹⁰ Slowing warming in the Arctic also lowers the risk that climate-altering quantities of heat-trapping methane and carbon currently locked in the Arctic's permafrost will be released as the permafrost melts.¹¹

The United States is on track to reduce black carbon emissions by 52 percent from 2005 levels by 2030, largely because of existing diesel regulations. By 2030, U.S. black carbon emissions are expected to be 125 gigagrams, down from 261 gigagrams in 2005.¹² Pressing the accelerator pedal for oil and gas operations in the Arctic could undermine these reductions.

Shifting federal responsibility for Arctic air quality

Jurisdiction for regulating emissions from offshore energy facilities is split between BOEM in the Department of the Interior and EPA. In 1978, Congress passed the Outer Continental Shelf Lands Act, specifying that the Interior Department was responsible for addressing air emissions on the outer continental shelf. Ongoing concerns with the

Interior Department's oversight, however—particularly with respect to activities off the coast of California—led Congress in 1990 to return air quality authority to the EPA for all offshore areas except the western and central Gulf of Mexico off the coasts of Alabama, Louisiana, Mississippi, and Texas. These areas remained under the Interior Department.

Until 2012, oil and gas companies seeking to drill in the Arctic Ocean had to comply with the EPA's strict air quality regulations and air permitting process. At the urging of Sen. Lisa Murkowski (R-AK), Congress transferred air quality authority from the EPA to BOEM in the Department of the Interior. As stated above, the department currently has laxer air quality standards in place for operations in the Gulf of Mexico.¹³ Sen. Murkowski argued that this transfer of authority would expedite the permitting process for drilling operations in the Chukchi and Beaufort seas off Alaska's coast.¹⁴

With this change, BOEM gained authority to regulate offshore emission sources for the more than 1 billion acres of the Arctic's outer continental shelf.¹⁵ This new authority adds to the Interior Department's existing responsibilities of reviewing and approving plans for the exploration, development, and production of oil and gas activities on the Arctic's outer continental shelf. However, BOEM's air quality regulations have never been applied to the Arctic environment. And according to a recent Government Accountability Office report, they have not been substantively updated since 1988.¹⁶

BOEM appears to recognize this deficiency and says it soon intends to propose a rule aimed at bringing the agency's regulations into compliance with the Clean Air Act. This is an important step for human health in Alaska's coastal communities, but it also presents a critical opportunity for BOEM to examine black carbon emissions from offshore drilling and to ensure that its new regulations require oil companies to reduce these emissions as much as possible.

Updating BOEM's air quality requirements to cut black carbon emissions

As a result of this geographic patchwork of federal oversight, the same types of operations face different requirements depending on where they are located. As a practical matter, drilling operations subject to BOEM's jurisdiction have to meet weaker standards than they would under the EPA's jurisdiction. (see Table)

Under BOEM's current regulations, a drilling applicant has to estimate how much air pollution its drilling operations would release. BOEM does not require the applicant to do anything else if emissions of each pollutant fall under a certain threshold dependent on the project's distance from the shoreline. For example, if a proposed drilling operation is located 10 miles offshore, it is exempt from further requirements if it emits less than 333 tons per year of any pollutant. If a drilling operation exceeds this threshold, BOEM first requires the applicant to determine whether the proposed operation will have a "significant" impact on onshore ambient air quality.¹⁷ If the answer is yes, the applicant must consider installing the best available pollution control technology.

In stark contrast, the EPA requires any drilling operation that will emit at least 250 tons per year of a regulated pollutant, no matter the distance from shore, to identify and install the best available pollution control technology and to demonstrate that the drilling operation's emissions will not cause or contribute to a violation of any health-based national air quality standards.

These and other differences in the agencies' processes have real-world impacts. Some drilling operations may not have to do anything to control their pollution—including particulate matter and its black carbon components—under BOEM's process. Others could be allowed to emit more pollution under the BOEM process than under the EPA process. Notably, the EPA process also includes permit requirements for greenhouse gas emissions—the BOEM process does not.

There is no public policy reason for this approach. Federal agencies that regulate the same activity in different regions of the country should apply the same standards, unless they have a good reason not to do so. Because BOEM's existing air quality requirements are less stringent than the EPA's requirements, an offshore drilling operation in the Arctic could be permitted to emit higher levels of air pollution, including particulate matter and its heat-absorbing, black carbon components. This status quo is unacceptable given the Obama administration's demonstrated commitment to addressing climate change.

For these reasons, BOEM should update its air quality standards to be at least as stringent as those of the EPA. Achieving parity with the EPA's standards will ensure that oil companies have to install the best available pollution controls to cut emissions of particulate matter and other pollutants. This is an important step toward cutting black carbon emissions from future offshore drilling operations.

However, BOEM needs to go a step further. The EPA's regulations are designed to ensure that offshore emissions do not compromise the breathability of the air; they do not take into account black carbon's effect on the warming of the Arctic environment. BOEM's new air quality regulations should require oil companies seeking to drill in the Arctic to reduce their black carbon emissions to levels low enough to protect the climate in addition to human health.

	Bureau of Ocean Energy Management	Environmental Protection Agency
Statutory authority and objective	1978 Outer Continental Shelf Lands Act, which deals with offshore energy development	1990 Clean Air Act, which deals with air quality
Jurisdiction	Gulf of Mexico west of 87.5 longitude and Alaska's north coast	All other federal waters
Subject to air quality requirements	Only those sources that significantly affect onshore air quality are subject to air emission requirements	Sources located within 25 miles subject to onshore requirements; those beyond 25 miles subject to Clean Air Act provisions
Emissions threshold stringency	Distance from shore determines exemption. If not exempt, a dispersion analysis determines if emissions would significantly affect onshore air quality	An emissions threshold—250 tons per year—determines whether a source is subject to best available control technology or other provisions
Emission coverage	Includes the drilling unit and no other sources or vessels	Includes emissions from all sources or vessels within 25 miles of the drilling unit
Pollutants	Sulfur dioxide, fine and coarse particulate matter (PM2.5 and PM10), nitrogen oxide, nitrogen dioxide, carbon monoxide, and volatile organic compounds	Sulfur dioxide, fine and coarse particulate matter (PM2.5 and PM10), nitrogen oxide, nitrogen dioxide, carbon monoxide, volatile organic compounds, ozone, lead, and greenhouse gases

Source: Virginia Raps and Michael Routhier, "Air Quality Jurisdiction on the Arctic OCS" (Alaska: Department of the Interior, 2014), available at http://www.boem.gov/uploadedFiles/BOEM/BOEM_Newsroom/Speeches/2013/2013-AK_0205_AFE%20AQ%20Jurisd%20Arctic%20OCS.pdf; Jonathan L. Ramseur, "Controlling Air Emissions from Outer Continental Shelf A Comparison of Two Programs—EPA and DOI" (Washington: Congressional Research Service, 2012), available at <http://fas.org/sgp/crs/misc/R42123.pdf>.

The United States should lead the world on black carbon reductions

If BOEM takes action to cut black carbon emissions from future offshore drilling operations, the United States can help lay the groundwork for international efforts to limit black carbon emissions in the Arctic. Currently, U.S. black carbon emissions are on track to decrease by half by 2030 if particulate matter standards are fully implemented. The United States can position itself to lead bold efforts to protect air quality and slow climate change when Secretary of State John Kerry assumes the chairmanship of the Arctic Council in 2015. As CAP has recommended, climate change should be central to the theme of his 2015–2017 term.¹⁸ Additionally, the United States should lead a regional effort to reduce black carbon emissions in the Arctic and encourage observer countries in the Arctic Council to enhance national actions to monitor and cut black carbon emissions.¹⁹

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Endnotes

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