

Decommissioning Offshore Oil and Gas Infrastructure in the Face of Climate Change and the Energy Transition



Photo Credit: Emmaus Studio on Unsplash

Martin Lockman and Martin Dietrich Brauch

August 2023

<https://ccsi.columbia.edu/news/decommissioning-offshore-oil-and-gas-infrastructure-face-climate-change-and-energy-transition>

On August 31, 2023, the Sabin Center for Climate Change Law¹ and the Columbia Center on Sustainable Investment (CCSI), as part of their broader Climate Law and Finance Initiative,² published two reports analyzing legal and contractual regimes governing decommissioning of offshore oil and gas infrastructure projects and identifying decommissioning-related risks in the context of a rapid phase-out of fossil fuel extraction required by the climate imperative.

The two reports, as well as an accompanying comment letter submitted by the Sabin Center to the U.S. Bureau of Ocean Energy Management (BOEM), provide policymakers, industry participants, and the public with tools to chart a pathway to prepare the offshore oil and gas industry for a Paris Agreement-compatible phase-out of fossil fuel extraction. The publications also shed light on the risk of private oil and gas companies, contractors, or investors (for simplicity, “oil companies”) defaulting on their decommissioning obligations and foisting them onto the public, and recommend measures to mitigate that risk.

The Landscape of Offshore Decommissioning

More than 12,000 offshore oil and gas installations³ straddle the globe, and industry analysts anticipate annual offshore oil and gas investments to reach USD 173 billion by 2024.⁴ A number of oil companies are expected to significantly expand⁵ their offshore drilling activities in the coming years.

At the same time, many jurisdictions face a growing need to decommission their offshore oil and gas infrastructure, whether because it is aging, the resources are depleted, or net-zero strategies require certain producing assets to be decommissioned earlier than expected. A 2021 forecast by IHS Markit estimated that global offshore decommissioning spending could cost nearly USD 100 billion between 2021 and 2030, a period that S&P Global Commodity Insights has described as a potential “decade of offshore decommissioning.”⁶ In the face of increasing demand for decommissioning, some have predicted that decommissioning costs may increase significantly.⁷

Offshore oil and gas infrastructure also faces an existential threat: the increasingly pressing need to address the climate emergency. The Intergovernmental Panel on Climate Change (IPCC) projects that GHG emissions from existing and planned fossil fuel infrastructure will push global warming past the Paris Agreement’s 1.5°C threshold,⁸ and detailed regional projections⁹ estimate that “nearly 60 per cent of oil and fossil methane gas . . . must remain unextracted to keep within a 1.5°C carbon budget.” Increased public focus on reducing GHG emissions, coupled with the global push for electrification and declining prices for renewable energy, may cause a rapid decline in oil and gas demand that forces the mass closure of offshore installations.¹⁰ Even without policy changes or concerted climate action, the increasing adoption of renewable energy systems and energy-efficient technologies is likely to depress demand for fossil fuels.¹¹

These combined dynamics may create serious risks for the public in a rapid phase-out scenario involving the widespread cessation of offshore oil and gas activities. Decommissioning offshore oil and gas infrastructure can be a laborious and expensive process.¹² Most countries with significant offshore oil and gas resources have laws, regulations, and contracts¹³ that require private offshore oil companies to bear the cost of decommissioning their facilities. A formal assignment of legal liability, however, does not guarantee that decommissioning will occur or that funds will be available when decommissioning obligations arise. Governments often sit as the “decommissioner of last resort,”¹⁴ and if oil companies default in their decommissioning obligations, the public will be left footing the bill.

The legal and economic tools that states use to ensure that oil companies pay decommissioning expenses were often adopted without much, if any, consideration to climate change or the energy transition. As a

result, a rapid phase-out of offshore oil and gas could cause a series of defaults and create a serious risk of immense financial burdens for governments of oil- and gas-producing jurisdictions. In turn, inexistent, delayed or inadequate decommissioning could cause enormous environmental harm¹⁵ to the world's oceans and marine life.

The Sabin Center and the Columbia Center on Sustainable Investment Launch Joint Report on Decommissioning Regulations and Climate Risk in Ten Jurisdictions

The joint framing report by Sabin Center and CCSI—*Decommissioning Liability at the End of Offshore Oil and Gas: A Review of International Obligations, National Laws, and Contractual Approaches in Ten Jurisdictions*¹⁶—identifies risks in offshore decommissioning regimes around the world and provides recommendations to strengthen them. To protect the public in a rapid phase-out scenario, and to ensure that oil companies meet their decommissioning obligations, the report recommends that governments, policymakers, and industry participants must take four key steps:

1. **Create and regularly update comprehensive decommissioning plans.** Some jurisdictions prepare decommissioning plans only when an installation or field is approaching the end of its usable life. This approach may create bottlenecks and unnecessary delays in a rapid phase-out scenario, where offshore facilities may need to be quickly decommissioned long before the ends of their previously anticipated lifespans. To prepare for a rapid phase-out, governments should require the operators of all offshore oil and gas facilities to create and regularly update comprehensive decommissioning plans.
2. **Reexamine decommissioning security mechanisms.** Legal mechanisms like collateral packages, guarantees, and funding structures are often predicated on assumptions that oil and gas assets will remain valuable and that oil companies will remain solvent. In the face of the transition away from fossil fuels, these assumptions may be incorrect. Policymakers and industry participants should examine these mechanisms to ensure that they are compatible with a rapid phase-out scenario, paying particular attention to security mechanisms.
3. **Evaluate and plan for the tax consequences of industry-wide decommissioning.** Offshore decommissioning is an expensive obligation that occurs at the end of a facility's economic life, and may significantly affect the economics of decommissioning a particular facility. Policymakers and industry participants who are planning for decommissioning expenditures should ensure that they are aware of, and prepared for, the tax implications of a rapid phase-out affecting the entire oil and gas industry.
4. **Evaluate and modify stabilization clauses to accommodate a rapid phase-out.** In evaluating their policies, governments should be aware that stabilization clauses in investor-state oil and gas contracts may shift or create additional burdens around early offshore decommissioning. Governments should consider modifying stabilization clauses in line with international best practices to allow them to

mandate early decommissioning if offshore assets become legally impaired or otherwise “stranded” by the transition away from fossil fuels.

The joint report details these recommendations and the underlying analysis supporting them.

The Columbia Center on Sustainable Investment Launches Report on Decommissioning Liability in Investor-State Contracts

CCSI’s report—*Provisions on Liability for Decommissioning Upstream Offshore Oil and Gas Infrastructure in Investor–State Contracts*¹⁷—assesses decommissioning provisions in investor–state oil and gas contracts in 24 jurisdictions. To avoid a scenario where the government must cover decommissioning costs in case of noncompliance by the oil and gas company with its decommissioning obligations, CCSI’s report advances, among others, the following recommendations for contractual approaches:

1. **Including provisions governing decommissioning as an integral stage occurring at the end of the project** (and not as a post-project activity), factoring in the health, environmental, safety, and financial risks it entails throughout the project’s life cycle.
2. **Creating a dedicated decommissioning fund**, with sufficient money to cover all decommissioning (including expected post-decommissioning) costs, pre-funded by the oil and gas company as part of capital and operating expenses, with contributions assured by the ultimate parent company and beginning before project construction.
3. **Outlining objective conditions for the release of decommissioning liability, along with any subsisting obligations** that the oil company and its ultimate parent company retain in perpetuity after decommissioning or after the sale or transfer of the upstream asset.
4. **Not including non-fiscal stabilization provisions**, to ensure that states can enforce any new or amended statutes or regulations governing decommissioning liability, without having to compensate oil and gas companies that are party to pre-existing contracts.

The CCSI report details these and other recommendations and the underlying analysis supporting them.

The Sabin Center Comments on the Bureau of Ocean Energy Management’s Ongoing Rulemaking

Separately, the Sabin Center for Climate Change Law submitted a comment letter¹⁸ on August 28, 2023 in response to a Notice of Proposed Rulemaking by the U.S. BOEM. BOEM is currently considering a Proposed Rule¹⁹ that would revise the financial assurance mechanisms that the United States uses to secure offshore decommissioning obligations.

While the Sabin Center’s comment is broadly supportive of the Biden Administration’s efforts to strengthen BOEM’s financial assurance mechanisms, it provides three technical recommendations to protect the American public against oil company defaults caused by climate action and the energy transition:

1. BOEM should broadly eliminate self-bonding for decommissioning obligations;
2. BOEM should discount the value of proven reserves in any “Reserves-to-Decommissioning Cost Ratio” to account for climate-related asset stranding; and
3. BOEM should calculate supplemental financial assurance requirements based on the P90 decommissioning liability projection, or adopt a liability model that explicitly considers sector-wide climate transition risk.

BOEM is currently considering the Sabin Center’s comment letter as part of its ongoing rulemaking process.

[Decommissioning Liability at the End of Offshore Oil and Gas: A Review of International Obligations, National Laws, and Contractual Approaches in Ten Jurisdictions](#) was authored by Martin Lockman, Climate Law Fellow at the Sabin Center, Martin Dietrich Brauch, Lead Researcher and Associate Research Scholar at CCSI; Esteban F. Fresno Rodríguez, Spring/Summer 2023 Research Assistant at CCSI; and José Luis Gallardo Torres, Fall 2022 Research Assistant at CCSI.

[Provisions on Liability for Decommissioning Upstream Offshore Oil and Gas Infrastructure in Investor–State Contracts](#) was authored by Martin Dietrich Brauch, Lead Researcher and Associate Research Scholar at CCSI; Esteban F. Fresno Rodríguez, Spring/Summer 2023 Research Assistant at CCSI; and José Luis Gallardo Torres, Fall 2022 Research Assistant at CCSI.

The Sabin Center’s [Comment Letter to the Bureau of Ocean Energy Management](#) was authored by Martin Lockman, Climate Law Fellow at the Sabin Center.

The two reports were supported in part by a commission from the [Institute for Energy Economics and Financial Analysis \(IEEFA\)](#), while the comment letter to BOEM was an independent initiative of the Sabin Center. The content and conclusions of the reports and letter are solely the responsibility of their respective authors.

References

¹ “Sabin Center for Climate Change Law,” Columbia Law School and Columbia Climate School, <https://climate.law.columbia.edu>.

- 2 “Climate Law & Finance Initiative,” Sabin Center for Climate Change Law, <https://climate.law.columbia.edu/content/climate-law-finance-initiative>.
- 3 Isabelle Gerretsen, “The New Use for Abandoned Oil Rigs,” *British Broadcasting Corporation*, January 26, 2021, <https://www.bbc.com/future/article/20210126-the-richest-human-made-marine-habitats-in-the-world>.
- 4 Rod Nickel and Sabrina Valle, “Insight: This Decade’s Oil Boom is Moving Offshore – Way Offshore,” *Reuters*, August 31, 2022, <https://www.reuters.com/business/energy/this-decades-oil-boom-is-moving-offshore-way-offshore-2022-08-31/>.
- 5 Benjamin Storrow, “Offshore Oil is About to Surge,” *POLITICO Climatewire*, March 22, 2023, <https://www.eenews.net/articles/offshore-oil-is-about-to-surge/>.
- 6 Christian de los Reyes Ullevik, “Are We Entering a Decade of Offshore Decommissioning?” *S&P Global Commodity Insights*, October 5, 2021, <https://www.spglobal.com/commodityinsights/en/ci/research-analysis/decade-of-offshore-decommissioning.html>.
- 7 Andrew Reid, “Offshore Energy: Are Decommissioning Costs Set to Spiral?” *Offshore Engineer Magazine*, March 1, 2022, <https://www.oedigital.com/news/494667-offshore-energy-are-decommissioning-costs-set-to-spiral>.
- 8 Intergovernmental Panel on Climate Change (IPCC), Synthesis Report of the IPCC Sixth Assessment Report (AR6), https://report.ipcc.ch/ar6syr/pdf/IPCC_AR6_SYR_LongerReport.pdf.
- 9 Dan Welsby, James Price, Steven Pye, and Paul Ekins, “Unextractable Fossil Fuels in a 1.5 °C World,” *Nature* 597, (2021): 230–234, <https://doi.org/10.1038/s41586-021-03821-8>.
- 10 “What are Stranded Assets,” *Grantham Research Institute on Climate Change and the Environment*, July 27, 2022, <https://www.lse.ac.uk/granthaminstitute/explainers/what-are-stranded-assets/>.
- 11 European Central Bank, “Greener and Cheaper: Could the Transition Away from Fossil Fuels Generate a Divine Coincidence?” Speech by Fabio Panetta, November 16, 2022, <https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp221116~c1d5160785.en.html>.
- 12 Rajesh Chhabara, “Offshore Oil Rigs: Can Decommissioning Ever Be Green?” *Reuters*, September 1, 2009, <https://www.reutersevents.com/sustainability/stakeholder-engagement/offshore-oil-rigs-can-decommissioning-ever-be-green>.
- 13 Annie Leeks, Steven Smith, Sylvia Tordova, and David Wallach, “Worldwide: Offshore Oil and Gas Field Decommissioning: Disputes and Other Challenges,” *Mondaq*, October 23, 2021, <https://www.mondaq.com/unitedstates/oil-gas-electricity/1123876/offshore-oil-and-gas-field-decommissioning-disputes-and-other-challenges>.
- 14 United Kingdom Department for Business, Energy, & Industrial Strategy, Establishing the Offshore Decommissioning Regime for CO2 Transport and Storage Networks (August 2021), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1007773/ccus-decommissioning-consultation.pdf.
- 15 Reidunn Stokke, Saravanan Marappan, Mikael Palme Malinovsky, and Andrew Taylor, *Assessment of Impacts of the Offshore Oil and Gas Industry on the Marine Environment*, In: OSPAR, 2023: The 2023 Quality Status Report for the North-East Atlantic, (London: OSPAR Commission, 2022), <https://oap.ospar.org/en/ospar-assessments/quality-status-reports/qsr-2023/other-assessments/impacts-offshore-oil-and-gas-industry/>.
- 16 Martin Lockman, Martin Dietrich Brauch, Esteban F. Fresno Rodríguez, and José Luis Gallardo Torres, *Decommissioning Liability at the End of Offshore Oil and Gas: A Review of International Obligations, National Laws, and Contractual Approaches in Ten Jurisdictions* (New York: Columbia Center on Sustainable Investment and Sabin Center on Climate Change Law, August 2023), <https://ccsi.columbia.edu/sites/default/files/content/docs/Sabin-Center-CCSI-decommissioning-liability-offshore-oil-gas.pdf>.
- 17 Martin Dietrich Brauch, Esteban F. Fresno Rodríguez, and José Luis Gallardo Torres, *Provisions on Liability for Decommissioning Upstream Offshore Oil and Gas Infrastructure in Investor State Contracts* (New York: Columbia Center on Sustainable Investment, August 2023), <https://ccsi.columbia.edu/sites/default/files/content/docs/ccsi-decommissioning-offshore-oil-gas-infrastructure-investor-state-contracts.pdf>.
- 18 Martin Lockman, “Comment Letter on Risk Management and Financial Assurance for OCS Lease and Grant Obligations,” Sabin Center for Climate Change Law, August 28, 2023, <https://climate.law.columbia.edu/sites/default/files/content/docs/comments%20and%20legal%20briefs/Sabin%20Center%20Comment%20Letter%20BOEM.pdf>.
- 19 Bureau of Ocean Energy Management (BOEM), Risk Management and Financial Assurance for OCS Lease and Grant Obligations, Document no. 2023-12916, <https://www.federalregister.gov/documents/2023/06/29/2023-12916/risk-management-and-financial-assurance-for-ocs-lease-and-grant-obligations>.