

Review of Economic Impacts of the No Sale Option for the Next Five-year National Outer Continental Shelf Oil and Gas Leasing Proposed Program

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Introduction

The U.S. Bureau of Ocean Energy Management (BOEM) within the Department of the Interior released a proposed 2023-2028 federal offshore oil and gas leasing program on July 1, 2022 that finds that not offering new leases in the Gulf of Mexico Program Area I and in Cook Inlet in the next Five-Year Program would result in a nationwide net cost of around \$59 billion compared to the Proposed Program.² On its own the results of the BOEM net benefits analysis appears to indicate that the monetized costs of offering the No Sale Option outweigh the benefits included in their analysis. However, a closer look reveals issues that indicate the BOEM analysis is insufficient and does not support a conclusion that the economic costs outweigh the benefits of the No Sale Option for several reasons that I detail in this review.

Here are the biggest problems with the BOEM analysis and findings that I dive into in this review:

- Point 1. Concerns with the underlying assumptions behind BOEM's production projections skew the economic analysis. BOEM undercounts the existing stockpile of leases and BOEM's findings of immediate declines in federal offshore production due to not offering new leases are inconsistent with findings from four other published modeling results.
- Point 2. BOEM may significantly underestimate the amount of total fossil fuel consumption that would decline globally due to not offering new leases.
- Point 3. Because of the timing of when BOEM's current analysis was completed, it fails to account for the large expected change in demand for oil and the increased shift away from fossil fuels now expected to occur due to current policy (namely the passage of the Inflation Reduction Act).
- Point 4. Failure to include the cost of downstream combustion means that BOEM is dramatically undercounting the economic costs of pursuing the Proposed Program compared to the No Sale Option. BOEM finds a net benefit of between \$1 and \$15 billion of avoided upstream emissions by pursuing the No Sale Option compared to the Proposed Program.³ In contrast, when including downstream emissions the climate benefits of net

¹ All judgements and conclusions of this review are entirely my own. Earthjustice and Natural Resources Defense Council contributed financial support to conduct this review. I am available for questions at Laura@apogeeep.com.

² U.S. Bureau of Ocean Energy Management (BOEM). 2023-2028 National Outer Continental Shelf Oil and Gas Leasing Proposed Program. July 2022. [hereinafter BOEM 2022a]. Table 5-16

³ BOEM 2022a. Table 5-16.

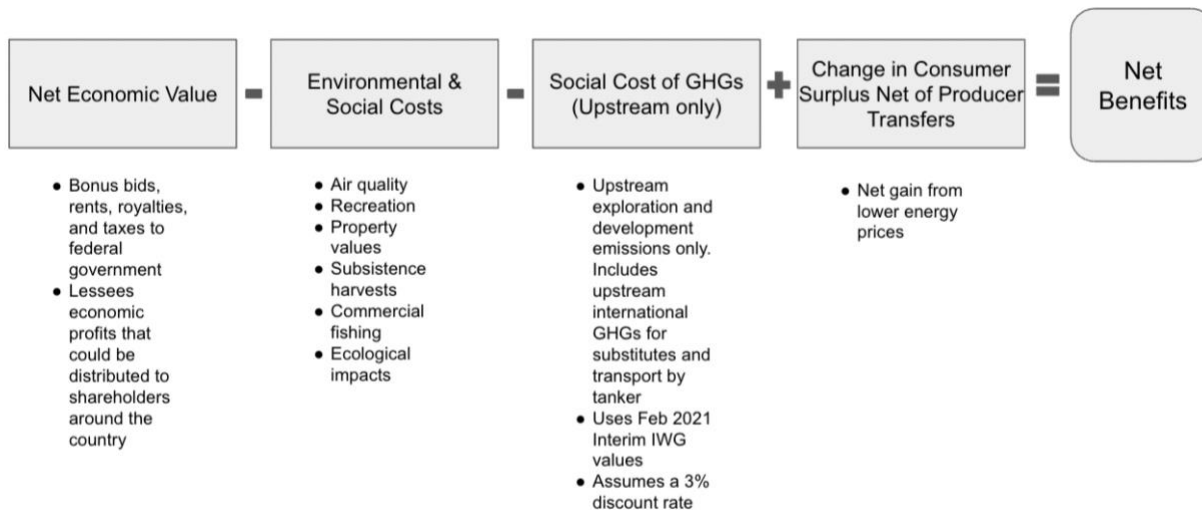
reductions in oil and gas out to 2040 due to a five-year delay in leasing could come to at least between \$23 billion and \$365 billion. BOEM's calculation of the social benefit of avoided emissions ought to use a lower discount rate, the updated higher expert-recommended central value that better incorporates the damages of climate impacts, and include the full lifecycle impacts.

- Point 5. BOEM acknowledges that the country will need to shift away from fossil fuels and suggests policy will demand it. However, the agency fails to model the expected market shifts under a net-zero pathway scenario that would dramatically change the expected costs of pursuing the Proposed Program.
- Point 6. Even before accounting for issues that bias the calculations in favor of the Proposed Program, the claimed monetary impacts of the No Sale Option are quite small when put into perspective.
- Point 7. Looking at the one component of the net benefits analysis that focuses on region-specific impacts, BOEM finds a relative benefit from the No Sale Option for the states neighboring the Gulf of Mexico and for the communities bordering the Cook Inlet in Alaska.
- Point 8. It appears that BOEM does not quantitatively estimate impacts to jobs, business opportunities, and economic activity in the Gulf of Mexico or Cook Inlet regions, and instead the report makes qualitative statements that paint an incomplete picture. Adaptation and substitution play an important role in the way energy and job markets work in real life. Drilling on existing leases (including on over 7.5 million acres of yet-to-be-developed leases) will continue for many years regardless of the number of new leases issued going forward and the impact to industry of a change in issuing new leases would be gradual over the next decade and beyond, giving plenty of time for the industry and for the workforce to adjust. In fact, accounting for substitution and expected shifts that would likely occur between energy sub-sectors and to other economic sectors that are more labor intensive could result in *more* net US jobs and GDP, not less.
- Point 9. The vast majority of government revenues come from production royalties that will continue to be high for a number of years under a zero leasing 5-year plan. The state caps for revenue sharing will continue to be met.

Review of BOEM's Economic Impact Assumptions and Findings

BOEM's economic analysis includes 4 sub-analyses that combine to calculate what BOEM includes in the net benefits analysis (see Figure 1). The Environmental and Social Cost (ESC) analysis is the only component of BOEM's economic analysis that calculates impacts on specific regions due to the national leasing decisions in the next Five-Year Program. The Net Economic Value (NEV), the Social Cost of Upstream GHGs, the Change in Consumer Surplus, and the ultimate Net Benefits Analysis all report nationwide impacts.

Figure 1. Components of BOEM’s Net Benefits Analysis Calculation for the Proposed Program and for the No Sale Option



Concerns with the underlying production projections skew the economic analysis

BOEM’s OCS production forecast underpins each component of the economic analysis.⁴ The anticipated difference in the level and timing of production that would result from a decision to offer zero leases in the next Five-Year Program in-turn determines the expected magnitude of the monetized benefits and risks to the U.S. As such, flawed or incomplete assumptions that underestimate the expected level of future development activity that will come from the stockpile of leases issued prior to when the next Five-Year Program would begin could have a major impact on the subsequent economic analysis.

BOEM undercounts the existing stockpile of leases

BOEM’s analysis uses a modified version of the EIA’s national Energy Modeling System (NEMS) as the baseline for the Market Simulation Model (MarketSim) that BOEM says assumes there are no new OCS lease sales starting in 2022.⁵ As discussed below, this is no longer the case given the four mandated sales by the IRA. Furthermore, BOEM says that the MarketSim model removes production from un-leased OCS blocks from their AEO reference case last updated by EIA in 2020 and provided on June 1, 2020.⁶ This implies that BOEM’s modeling actually may

⁴ outlined in Chapter 5 of BOEM 2022a

⁵ U.S. Bureau of Ocean Energy Management (BOEM). DRAFT Economic Analysis Methodology for the 2023-2028 National Outer Continental Shelf Oil and Gas Leasing Program. July 2022.

https://www.boem.gov/sites/default/files/documents/oil-gas-energy/national-program/Draft_Economic_Analysis_Methodology_2023-2028ProposeProgram_July2022.pdf [hereinafter BOEM 2022b]. Sec 1.2.2. p.1-5 says, "The NEMS baseline used in the MarketSim is a modified version of the EIA’s 2020 Annual Energy Outlook reference case, which includes no new OCS lease sales starting in 2022 (i.e., selecting the No Sale Option for every program area)"

⁶ BOEM 2022b p.1-7

not include the half a million acres leased in November 2020 as part of the existing stockpile of leases.⁷

Assumptions that underestimate the expected development activity from the existing stockpile of leases issued prior to when the next Five-Year Program would begin lead to an overestimation of the subsequent estimated decline of government revenues from the OCS program and oil and gas industry profits due to the No Sale Option.⁸ The Net Economic Value (NEV) calculation is based on the revenue collected by the federal government from the OCS program and the profits that oil and gas companies earn from the OCS activities and that are distributed to shareholders around the country. Higher levels of oil and gas production in the OCS that would come from the stockpile of leases means less of a change in the expected NEV between the No Sale Option and the Proposed Program. This is particularly significant because the NEV is by far the biggest contributor to the incremental net benefits calculation.

A substantial time lag would occur before a change in issuing new leases would have any meaningful impact on production because operators would continue drilling on leases they already own. Of the more than 10.3 million acres of offshore federal waters already under lease, over 7.5 million acres have yet to be developed.⁹ In other words, roughly 3/4ths of the total existing leased offshore acres are not even in use. It will take oil and gas companies many years to develop the large inventory of existing undeveloped leases. Companies typically have 10 years to start development on their lease.¹⁰ Research shows that companies typically wait until near the end of those 10-years to start development and that the majority of production from a federal offshore lease comes more than 10 years after a lease parcel is sold.¹¹ This means that oil produced from these leases would not reach the pump for years, and typically more than a decade down the road. As such, pausing or even ending leasing would not exert much effect on federal oil and gas production for at least a decade.¹² The expected lag in OCS oil and gas production impacts due to not offering new leases in the future only grows with an increase in the assumed stockpile of leases that is expected to exist before the next Five-Year Program begins.

⁷ US BOEM. Lease Sale 256 Final Bid Recap. 18 November 2020.

<https://www.boem.gov/sites/default/files/documents/oil-gas-energy/leasing/Bid-Recap-256.pdf>

⁸ see GOM production forecast from existing leases only in chapter 5.2.8 p.5-17

⁹ Bureau of Ocean Energy Management (BOEM). Oct. 2022. *Combined Leasing Status Report*.

<https://www.boem.gov/sites/default/files/documents/oil-gas-energy/leasing/Lease%20stats%2010-1-22.pdf> These numbers likely do not include additional acreage for bids accepted in Sept. 2022 from Lease Sale 257.

¹⁰ 10 years is the standard initial lease length of deepwater offshore leases (CBO 2016). Although some offshore leases in shallow water have shorter lease terms (such as 8 years), these account for relatively little of offshore oil and gas development.

Congressional Budget Office (CBO). 2016. *Options for Increasing Federal Income from Crude Oil and Natural Gas on Federal Land*. https://www.cbo.gov/default/files/114th-congress-2015-2016/reports/51421-oil_and_gas_options.pdf [hereinafter CBO 2016].

¹¹ CBO 2016

¹² Even before accounting for additional leases added in 2022 and 2023 due to the IRA, the existing stockpile likely includes many leases issued in recent years. The federal government issued new federal oil and gas leases on over 2.8 million acres in the Gulf of Mexico in 2019 and 2020 (over 5.6 million acres of new GOM leases altogether between 2017 and 2020). US BOEM. All Lease Offerings. Outer Continental Shelf Lease Sale Statistics. Updated 24 February 2021. <https://www.boem.gov/sites/default/files/documents/about-boem/Table%201%20SwilerTable%2024FEB2021.pdf>

Updating the analysis to include the four lease sales in 2022 and 2023 that are included in the Inflation Reduction Act will likely serve to further cushion the existing stockpile of leases and further slow down the already very gradual expected pace of incremental economic impacts due to not offering new leases in the next Five-Year Program. BOEM reinstated bids for 1,722,821 acres from Lease Sale 257 on September 14, 2022.¹³ The IRA directs three more sales during 2022 and 2023. Even though the total number of lease acreage that will be sold from sales 258, 259, and 261 is unknown, BOEM can make reasonable forecasts about how many acres will be sold and incorporate those forecasts into its existing lease baseline for modeling ongoing development and production from leases issued prior to the start of a Five-Year Program. The existence of any new leases prior to the 5-year lease plan beginning will serve to decrease the scale and timing of impacts expected to come from pursuing the No Sale Option compared to the Proposed Program because these four IRA sales will add to the already large stockpile of leases available for operators to develop. Not including these leases in the forecast serves to overestimate the rate of decline in OCS production, development activity, and subsequent economic costs for the No Sale Option based on what BOEM includes in the NEV calculation.

BOEM may actually model a permanent end to leasing instead of a 5-year pause

In addition, BOEM's assumptions about leasing actions after the 5-year window of the current program may further underestimate the production forecast for the No Sale Option. Although modeling of the No Sale Option should only assume that BOEM does not offer new leases during the next 5-year period, evidence suggests that BOEM assumes new leases will not be offered through at least 2040.¹⁴ Leasing actions after the 5-year window are beyond the scope of this Program. Assuming a permanent end to leasing would lead to further overestimation of the costs of the No Sale Option compared to the Proposed Program in the net-benefit analysis.

BOEM projects a faster near-term offshore production decline than four other models

BOEM's findings of immediate declines in federal offshore production due to a leasing pause are inconsistent with findings from four other published modeling results. Modeling conducted by an economist at the non-partisan economic think tank Resources for the Future,¹⁵ a report by Energy

¹³ BOEM reinstates bids for 1,722,821 acres from Lease Sale 257 on September 14, 2022.

<https://www.boem.gov/newsroom/press-releases/compliance-ira-boem-reinstates-lease-sale-257-bids>

The IRA directs that BOEM hold Lease Sale 259 by March 2023 and Lease Sale 261 prior to Sept. 30, 2023, in the GOM and holds Lease Sale 258 in Alaska by December 2022.

¹⁴ BOEM 2022a. Visual estimate of difference of BOEM reported 2030 oil base case and oil no future lease sales forecast (not just no sales in the next Five-Year Program). Figure 5-9. The base case assumes continuous leasing.

¹⁵ Prest, B. *Supply-side reforms to oil and gas production on federal lands: modeling the implications for CO2 Emissions, Federal Revenues, and Leakage.*, Journal of the Association of Environmental and Resource Economists. Available online April 2022. <https://www.journals.uchicago.edu/doi/suppl/10.1086/718963> [hereinafter Prest 2022].

& Industrial Advisory Partners (EIAP),¹⁶ modeling by research firm OnLocation¹⁷ and data analytics firm Rystad Energy¹⁸ all estimate no reduction in US offshore production from a leasing pause in year 1, and negligible (less than 2%) impacts in the first 4 or 5 years. Looking at just a temporary leasing pause between 2023-2028, Rystad Energy appears to find less than a 2% decline until year 4 and EIAP finds less than a 2% decline until year 5. Modeling a permanent end to federal offshore leasing, OnLocation finds a similar result to EIAP with less than a 2% decline until year 5 and RFF finds less than a 2% decline until year 4. In sharp contrast to these findings from the other four modeling results, BOEM seems to find around a 5% decline by 2022 (one year before the no leasing policy even begins).¹⁹

Table 1. Comparison of modeling results: % decline from no new leasing below business-as-usual pre-IRA forecasts for offshore federal oil production by first year of expected offshore decline and % decline by year 9

	EIAP 2022	Rystad 2022	OnLocation 2022	Prest 2022	BOEM 2022
When does projected decline begin and what is forecasted % decline below baseline in that year?	No decline until year 3; 0.25%	No decline until year 3; ~0.2%*	No decline until year 5; ~2%*	No decline until year 2; less than 0.6%	Decline begins in year 2021, 2-3 years before no leasing begins; ~1%*
Year 9	22%	~12.5%	~11%	Between 22% and 26%	~24%

*OnLocation, Rystad, and BOEM figures are visual estimates based on data displayed in graphs because actual numbers for these annual forecasts were not readily available.

BOEM appears to underestimate the expected amount of total fossil fuel consumption that would decline globally due to not offering new leases (and the social benefit of avoided emissions)

BOEM’s analysis estimates the substitution for offshore oil and gas production that would occur in the absence of lease sales.²⁰ BOEM modeling reports a net reduction in fossil fuel

¹⁶ Energy & Industrial Advisory Partners. 2022. *The Economic Impacts of a five-year Leasing Program Delay for the Gulf of Mexico Oil and Natural Gas Industry*. https://cdn.baseplatform.io/files/base/ebm/ogj/document/2022/03/220329_offshore_5_year_plan_rpt.624374e57ca43.pdf [hereinafter EIAP 2022].

¹⁷ OnLocation, NRDC-NEMS Analysis of a Moratorium on New Offshore Leasing in the Gulf of Mexico, 4 March 2022. https://355898.fs1.hubspotusercontent-na1.net/hubfs/355898/NRDC-GOM%20Final%20Offshore%20Moratorium%20Scenario%20Results_0511.pdf

¹⁸ Rystad Energy UCube, Rystad Energy research and analysis. Cited in Offshore Magazine. 27 Jan. 2021. “Biden administration suspends federal oil and gas leasing.” <https://www.offshore-mag.com/regional-reports/us-gulf-of-mexico/article/14196352/biden-administration-suspends-federal-oil-and-gas-leasing> [hereinafter Rystad 2022].

¹⁹ BOEM 2022a Figure 5-9

²⁰ U.S. Bureau of Ocean Energy Management (BOEM). DRAFT Economic Analysis Methodology for the 2023-2028 National Outer Continental Shelf Oil and Gas Leasing Program. July 2022. https://www.boem.gov/sites/default/files/documents/oil-gas-energy/national-program/Draft_Economic_Analysis_Methodology_2023-2028ProposeProgram_July2022.pdf [hereinafter BOEM

consumption by around 10% of the decrease in OCS oil and gas production expected to come from the No Sale Option. However, the peer-reviewed research by Dr. Brian Prest published in 2022 found a much higher decline in fossil fuel consumption due to not offering new federal leases.²¹ Prest 2022 found after accounting for substitution, a net reduction in fossil fuel consumption equal to between 24% and 27% of the decreased production due to an onshore and offshore federal leasing moratorium.²² Updating the amount of reduced global fossil fuel consumption assumed to result from the No Sale Option compared to the Proposed Program based on recent research is particularly important when calculating the social cost of emissions.

Table 2. Substitution of Reduced Federal Oil and Gas Production due to No Leasing²³ Indicates that BOEM Underestimates the Reduction in Fossil Fuel Consumption

	Prest 2022	BOEM 2022
Reduced Fossil Fuel Consumption	24-27%	10%
Domestic Onshore O&G	22-32%	29%
Foreign Imports	44-50%	51%

BOEM needs to include the accelerated shift away from fossil fuels due to IRA

In August 2022, President Biden signed into law the Inflation Reduction Act (IRA) which established robust government support for renewable energy, electric vehicles, and advanced technologies to combat climate change.²⁴ The expected energy needs that BOEM uses to determine the appropriate number and sizes of lease sales for the next Five-Year Program was based on modeling that assumes policies as of November 2021.²⁵ Assumptions and modeling based on pre-IRA market demands are now out of date because they do not include the faster shift away from fossil fuels due to the large investments and incentives into electrification and

2022b]. Sec 1.2.2. p.1-5 says, "The NEMS baseline used in the MarketSim is a modified version of the EIA's 2020 Annual Energy Outlook reference case, which includes no new OCS lease sales starting in 2022 (i.e., selecting the No Sale Option for every program area)"

²¹ Prest 2022

²² Prest 2022. Prest 2022 found a net emissions decline as high as 47% when assuming a high elasticity of demand in the modeling.

²³ BOEM 2022a Figure 5-13 shows the estimated substitution of other energy sources under the No Sale option under baseline policies (mid-activity level) which includes 10% goes to reduced consumption, 11% goes to onshore oil, 18% goes to onshore gas (for a total of 29% going to US domestic onshore oil and gas). BOEM estimates that 9% goes to "other energy sources" which presumably includes low-carbon energy. Finally, BOEM estimates that oil imports would offset 51% of projected decline in OCS production due to the No Sale Option. In contrast, Prest 2022 found that in the face of a permanent federal ban on issuing new onshore and offshore leases, on average ~24-27% would be reduced global consumption (and as high as 47% if assume a high elasticity of demand). Prest 2022 base case demand scenario estimated that between 22 and 32% of the offshore production decline would be offset by a rise to onshore domestic production and between 44 and 50% would shift to imports from abroad.

²⁴ H.R. 5376. Inflation Reduction Act of 2022. <https://www.congress.gov/bill/117th-congress/house-bill/5376/text>

²⁵ BOEM 2022b sec 1.2.2 explains that the net benefits analysis makes no assumptions about future technology or policy changes other than those reflected in the EIA NEMS forecast last updated in Nov. 2021.

expansion of low-carbon generation included in the IRA.²⁶ Assumptions that overestimate the expected development activity from new leases issued in the next Five-Year Program because the modeling does not account for the latest IRA policy reality, means an overestimation of the subsequent estimated decline of oil and gas-related activity due to the No Sale Option compared to the expected levels of activity due to the Proposed Program. BOEM's calculated energy supply substitution rates for the No Sale Option shown in Table 3 will likely change as would the resulting net benefits calculation of OCS oil and gas activities and the No Sale Option. BOEM ought to update the pre-IRA elasticities and adjustment rates that it uses in its modeling. The IRA makes renewable energy cheaper and will, in turn, drive down U.S. consumption of oil and gas. The REPEAT project at Princeton University projects that the IRA will drive U.S. consumption of petroleum products down 13% below the previous 2030 forecast and drives U.S. natural gas consumption down by 9%.²⁷ For example, assuming a higher oil and gas demand elasticity because of demand-side policies included in the IRA that make substituting to renewable energy sources cheaper will make the consumer demand for oil change more than it changed historically due to a change in the price of oil. In turn, assuming a higher demand elasticity for oil and for gas will mean a bigger impact in net emission reductions because of the No Sale Option as more of the supply reduction is absorbed by lower fossil fuel consumption rather than higher use of oil and gas coming from other sources.²⁸

BOEM significantly underestimates the cost of damages to society of the Proposed Program and the benefit of avoided costs of the No Sale Option

The monetary benefits of avoiding climate damages to people, agriculture, and infrastructure from reduced flooding, fires, and heat waves are huge. The US government calculated in 2022 that extreme weather events caused by climate change resulted in at least \$120 billion in damages each year over the past five years.²⁹

The Social Cost of Greenhouse Gasses (GHG) component of BOEM's net benefits analysis calculation dramatically underestimates the social cost of emission by failing to include the benefits to society of avoiding climate damages due to reduced downstream combustion of fossil fuels.³⁰ Failure to include the cost of downstream combustion means that BOEM is dramatically undercounting the economic costs of pursuing the Proposed Program compared to the No Sale Option. BOEM finds a net benefit of between \$1.1 and \$14.83 billion of avoided upstream emissions by pursuing the No Sale Option compared to the Proposed Program.³¹ In contrast,

²⁶ U.S. BOEM. 2023-2028 National OCS Oil and Gas Leasing Proposed Program. July 2022. P.9 and energy needs in Chapter 1.2 and Chapter 2.5

²⁷ Zero Lab at Princeton University. August 2022. Preliminary Report: The Climate and Energy Impacts of the Inflation Reduction Act of 2022. Rapid Energy Policy Evaluation and Analysis Toolkit. (REPEAT Project). https://repeatproject.org/docs/REPEAT_IRA_Preliminary_Report_2022-08-12.pdf See slide 12.

²⁸ As seen in Prest 2022 Table 1 results when using base demand elasticities (p.706) compared to when using high demand elasticities (p.707).

²⁹ Cited in The White House. "Quantifying Risks to the Federal Budget from Climate Change." Series Quantifying Risks to the Federal Budget from Climate Change. 4 April 2022. <https://www.whitehouse.gov/omb/briefing-room/2022/04/04/quantifying-risks-to-the-federal-budget-from-climate-change/>.

³⁰ BOEM assumes IWG 2021 values using a 3% discount rate. (see BOEM 2022b, section 1.2.5.2 "Methodology for Estimating the Social Cost of Upstream GHG Emissions")

³¹ BOEM 2022a. Table 5-16.

when including downstream emissions the climate benefits of net reductions in oil and gas out to 2040 due to a five-year delay in leasing could come to between \$23 billion and \$170 billion in 2020 dollars.³² Similar to what BOEM assumes, these estimates assume a moderate price on carbon starting at around \$51/tCO₂e and assuming a 3% discount rate. Using a higher social cost of carbon, such as New York State's 2020 central value starting at \$121/mt CO₂, leads to estimates that society would save between \$50 billion and \$365 billion in avoided climate damages expected to come from even a five-year delay in offering new offshore oil and gas leases between 2022-2040.³³

BOEM could improve the robustness of its calculations by using the updated higher expert-recommended central value that better incorporates the damages of climate impacts. In September 2022 a group of experts led by Berkeley and Resources for the Future published newly updated Social Cost of Carbon values in the journal *Nature*.³⁴ The new recommended values update the scientific basis for the SCC by implementing the changes recommended by the National Academy of Sciences, Engineering, and Medicine in 2017.³⁵ The experts recommend a new preferred 2% near-term discount rate central value that has a mean SCC of \$185 per ton of CO₂, more than 3 times the current interim federal estimate of \$51 per ton. A higher SCC (and use of a lower discount rate) increases the expected net benefits of the no sale option and increases the costs of the Proposed Program proposed. If BOEM chooses to continue to use a 3% discount rate, simply using the updated 3% discount rate values provided by the experts over the interim IWG 2021 values would still result in around a 60% increase over the current estimate of \$51 raising to a mean SCC of \$80 per ton of CO₂. The new values update for damages to agriculture, human mortality, strain on energy infrastructure, and of sea level rise. Given that the Biden administration issued an executive order for a comprehensive update to the SCC value used by the federal government, and presumably the new recommended values and discount rate

³² The low-end calculation combines Energy & Industrial Advisory Partners estimated reduction for each year between 2022 and 2040 in b/d of oil and boe/d of natural gas from the Gulf, with a base demand assumption from Prest 2022 that 75.5% of reduced production in the Gulf would still be produced on net due to expected shifts in production from other lands and waters, an emission factor for crude oil of 0.43 tCO₂e/barrel and for natural gas of 0.066 tCO₂e/mcf, assuming 6 mcf of natural gas = 1 BOE, and applying the US IWG 2021 SC-CO₂e values for a 3% discount rate in 2020 dollars for the 2022-2040 studied window. The high-end calculation does the same as the first calculation except it assumes Prest 2022 high demand elasticity leakage rate of 52.4%.

Energy & Industrial Advisory Partners. 2022. *The Economic Impacts of a five-year Leasing Program Delay for the Gulf of Mexico Oil and Natural Gas Industry*.

https://cdn.baseplatform.io/files/base/ebm/ogj/document/2022/03/220329_offshore_5_year_plan_rpt.624374e57ca43.pdf [hereinafter EIAP 2022].

³³ Used the same method to calculate the low and high-end climate damage assessment costs each year but uses New York State's Dec. 2020 Social cost values for carbon dioxide, assuming a 2% discount rate. All reported in 2020\$. Appendix: NYS Social Cost Values. 2020. New York State Department of Environmental Conservation.

https://www.dec.ny.gov/docs/administration_pdf/vocapp22.pdf

³⁴ Rennert, K., Errickson, F., Prest, B., et al. Comprehensive Evidence Implies a Higher Social Cost of CO₂. *Nature*. 1 September 2022. <https://doi.org/10.1038/s41586-022-05224-9>

Additional resources found on Resources for the Future website at https://www.rff.org/publications/journal-articles/comprehensive-evidence-implies-a-higher-social-cost-of-co2/?_gl=1*fdh3ow*_ga*MTA0MDYzMjA0MS4xNjYzODg5ODU2*_ga_HNHQWYFDLZ*MTY2Mzg4OTg1Ni4xLjEuMTY2Mzg4OTg4MC4wLjAuMA..

³⁵ National Academies of Sciences, Engineering, and Medicine. 2017. *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/24651>.

will be updated accordingly, BOEM ought to wait to finish the analysis when the new federal recommendations are complete or at least use what the independent study that is behind informing the new values in addition to the current value modeled in order to understand the far better informed societal costs of production coming from leasing in the next Five-Year Program.

BOEM fails to model the expected increased shift away from fossil fuels under a net-zero pathway

The BOEM analysis fails to quantitatively assess the cost-benefits of the proposed programs under a net-zero emissions future. This is the pathway that scientific consensus finds that we must be on to avoid catastrophic impacts and arguably a net-zero emissions pathway should be central for an analysis that makes decisions for fossil fuel development for decades to come.³⁶ The assessment of the Proposed Program currently assesses the costs and benefits of a level of new leasing that would occur in a world that is incompatible with meeting our national and global climate goals that are necessary for an even chance to avoid the worst impacts of climate change. Arguably BOEM's analysis should be run under both a business-as-usual pathway and a 1.5 or 2°C pathway that assumes demand and consumption patterns change in a way that is consistent with keeping global temperatures from rising more than 1.5 or 2°C. Modeling a 1.5 or 2°C pathway as well is critical because the underlying assumptions for how quickly markets shift away from fossil fuels will likely dramatically change the expected timing and the scale of employment, income, and public revenue changes in the regions of interest and what the difference would be due to not offering new leases in the next Five-Year Program. For example, Princeton University's Net-Zero America modeling finds that across five pathways for the U.S. to reach net-zero by 2050, between 0.3 and 0.6 million more direct energy supply-related jobs would be gained compared to the business-as-usual scenario during the 2020s, between 0.4 and 1.7 million more jobs would be gained during the 2030s, and between 0.6 and 3.8 million more jobs would be gained compared to the reference case during the 2040s.³⁷ To support a net-zero transition, the supply-side energy workforce in the U.S. needs to grow by 15% in the first decade of a net-zero transition and by 1.2 to 3 times by 2050.³⁸ The Princeton modeling shows that net employment and wage losses in oil, gas, and coal sectors are minimal, especially in the first decade of the transition, and are more than offset by net job and wage gains in wind, solar, grid expansion, and other low carbon energy sectors throughout the next 30 years.³⁹ Although these are on an aggregate level nation-wide, on an individual level it is important to note that a large portion of those currently employed in the fossil fuel industry will reach retirement age by the 2040s.⁴⁰ In other words, rather than losses to current jobs the impacts of a net-zero transition will

³⁶ BOEM 2022a. P. 3 and BOEM 2022b section 1.2.1.2 explains that "leasing associated with the 2023-2028 Program enables new exploration, development, and production activity for a period of more than 50 years."

³⁷ Larson, E., C. Greig, J. Jenkins, E. Mayfield, A. Pascale, C. Zhang, J. Drossman, R. Williams, S.

Pacala, R. Socolow, E. J. Baik, R. Birdsey, R. Duke, R. Jones, B. Haley, E. Leslie, K. Paustian, and A. Swan, Net-Zero America: Potential Pathways, Infrastructure, and Impacts, Final report, Princeton University, Princeton, NJ, 29 October 2021.

<https://www.dropbox.com/s/ptp92f65lgds5n2/Princeton%20NZA%20FINAL%20REPORT%20%2829Oct2021%29.pdf?dl=0> [hereinafter Larson et al 2021] see p.279

³⁸ Larson et al 2021, p.307

³⁹ Larson et al 2021, p.281 and p.303

⁴⁰ Larson et al 2021, p.303

largely involve a shift in future job gains to low-carbon energy sectors as opposed to training new employees to enter into the fossil fuel industry. Princeton finds that wages from energy-related jobs increase throughout the net-zero transition across all five pathways by between \$17 and \$29 billion more per year over the reference scenario during the 2020s, between \$31 and \$105 billion more per year during the 2030s, and between \$50 and \$263 billion more per year during the 2040s.⁴¹

According to the IPCC, to avoid more than a 1.5°C rise in global temperatures, global greenhouse gas emissions must peak by 2025 and be cut by 43% by 2030.⁴² The International Energy Agency's 1.5°C-consistent pathway requires "no investment in new fossil fuel supply projects" starting immediately.⁴³ A 2021 paper published in *Nature* calculates that avoiding a 1.5°C rise would require leaving 60% of existing oil and gas reserves and 90% of coal reserves in the ground.⁴⁴ Going even further, a 2022 paper published in the journal of *Environmental Research Letters*, finds that nearly 40% of already producing reserves need to stay in the ground to meet the 1.5°C target.⁴⁵ Given the need to rapidly transition away from fossil fuels for a chance to avoid global temperatures from rising more than 1.5°C and to avoid the worst impacts of a changing climate, it is also reasonable to simulate (or at least to qualitatively address) the expected impacts of a delay in leasing under a scenario consistent with meeting climate targets. Arguably pursuing additional leases to construct infrastructure that enables even more long-term extraction from offshore reserves will increase the expense to firms in the long run as they fail to recover investments from stranded assets.

As the US and the global economy transition to a low-emissions energy future, the demand for oil and gas (especially from areas not yet leased) are likely to decline considerably. Global demand for oil is around 100 million barrels/day. Climate scenarios compatible with keeping temperatures from rising more than 1.5°C or 2°C project that global oil demand will decline by between 20 to 75 mb/d by 2040.⁴⁶ To put things into perspective, BOEM estimates that offering no new offshore federal leases would result in around 0.6-1.6 mb/d lower oil production coming from the OCS by 2040.⁴⁷ In other words, it is likely that demand for oil from the OCS in 2040 will be reduced by a lot more than 1.6 mb/d and there will not be a need for production that would come from areas not yet leased in the OCS.

BOEM notes that the net benefits of no lease sales could change under a net-zero emissions pathway, but says there is not enough information to quantitatively assess the net benefits of no

⁴¹ Larson et al 2021, p.299

⁴² <https://www.ipcc.ch/2022/04/04/ipcc-ar6-wgiii-pressrelease/>

⁴³ International Energy Agency (IEA). "Net Zero by 2050: A Roadmap for the Global Energy Sector". May 2021. <https://www.iea.org/reports/net-zero-by-2050>

⁴⁴ Welsby, Dan, James Price, Steve Pye, and Paul Ekins. "Unextractable fossil fuels in a 1.5 C world." *Nature* 597, no. 7875 (2021): 230-234.

⁴⁵ Trout et al. 2022. 'Existing fossil fuel extraction would warm the world beyond 1.5°C'. *Environmental Research Letters*. 17. no. 6. <https://iopscience.iop.org/article/10.1088/1748-9326/ac6228>

⁴⁶ Resources for the Future. 2022. Global Energy Outlook. <https://www.rff.org/publications/reports/global-energy-outlook-2022/>

⁴⁷ Estimate based on BOEM 2022a Figure 4-6 on p. 1-14 forecast looks like baseline projection is between 1-2 million barrels per day by 2040 if leasing continues. Then estimate around 0.4 mbpd on average by 2040 if no future leasing occurs (the projected production from leases issued as of June 2020) shown in Figure 5-9 from BOEM 2022a p. 5-20.

lease sales under a net-zero emissions pathway.⁴⁸ Given the urgent global need to follow a net-zero by mid-century pathway, the US international commitments to work to get on that pathway, and the Biden administration's stated targets to align actions to reach that pathway -- it is imperative to prioritize an assessment of the net benefits to society of any additional leasing actions under the emissions pathway that future well-being requires.

Claimed impacts of the No Sale Option are small when put into perspective

BOEM's estimated net incremental benefits analysis estimates that the No Sale Option in the Gulf of Mexico Program Area I and in Cook Inlet in the next Five-Year Program would result in a nationwide net cost of around \$59 billion across a 35 to 70-year period compared to the proposed program.⁴⁹ This equates to roughly between \$800 million and \$1.6 billion in net costs per year. These expected annual net incremental costs of not leasing represent 0.0038% to 0.008% of US GDP (\$21 trillion in 2021), which is well within the noise of annual fluctuation rates.⁵⁰

Review of BOEM's Regional Economic Impact Assumptions and Findings

BOEM finds relative benefit from the No Sale Option for the regions of interest

The Environmental and Social Cost (ESC) analysis is the only component of BOEM's economic analysis that calculates impacts on specific regions due to the national leasing decisions in the next Five-Year Program. Counter to statements of supposed regional benefits, in the ESC analysis BOEM actually reports a relative benefit from the No Sale Option versus from holding the Proposed Program for nearly all states adjacent to the program areas.⁵¹

As shown in Table 3, BOEM finds a relatively small incremental benefit of the No Sale Option compared to the Proposed Program. Pursuing the No Sale Option could prevent the Gulf states neighboring GOM Program Area 1 from experiencing \$528 million in environmental and social costs and the Alaskan communities around Cook Inlet from experiencing \$19 million in costs compared to what those states would experience from the Proposed Program.^{52,53} Perhaps even

⁴⁸ BOEM 2022a Sec. 5.3.5., p.5-52

⁴⁹ BOEM 2022a Table 5-16

⁵⁰ US Bureau of Economic Analysis. Real Gross Domestic Product [A191RO1Q156NBEA], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/A191RO1Q156NBEA> , June 15, 2022.

⁵¹ BOEM 2022a, Table 8-2. See final column.

⁵² BOEM 2022b p. 5-1, Figure 2. says the time period of OCS activities resulting from the draft proposal is 35-70 years (varies for different program areas). BOEM constantly refers to different time periods throughout the reports and needs to more clearly specify what these expected periods are especially for GOM Program Area 1 and for Cook Inlet.

⁵³ Note of caution when interpreting the regional allocation results, keep in mind that they illustrate "the collective result of the proposed lease sales, rather than the result of any one area-specific decision, on the relative and total costs anticipated to result from leasing" (BOEM 2022a p.8-39). In other words, one cannot interpret that the No Sale Option if offered in the GOM Program Area *alone* could prevent the neighboring Gulf states from experiencing \$528 million in ESCs. Instead, that calculation is the finding for impacts for the states neighboring the GOM Program Area 1 if the No Sale Option is pursued in *all* OCS program areas.

more importantly, the calculation finds that the net costs from energy substitutions in the No Sale Option are almost entirely spread out across the non-coastal U.S.⁵⁴

Table 3. BOEM Comparison of Environmental and Social Costs, Regional Allocation Perspective (in millions of dollars)^{55,56}

Program Area and Adjacent Coastal States	Program Costs	No Sale Option	Incremental Environmental & Social Costs*
Cook Inlet	19	0	19
GOM Program Area 1	774	246	528
Other OCS Program Areas not likely to be included in 2023-2028 sales	1,805	319	1,486
Non-Coastal U.S.		11,489	-11,489
Total	2,598	12,054	-9,456

*Note: The positive values in the final column indicate an incremental (net) benefit to those regions from pursuing the No Sale Option compared to the Proposed Program.

The narrative accompanying BOEM’s ESC analysis includes qualitative assessments of expected impacts to regional income, employment, wages, and revenue transfers coming from exploration, development, and transportation expected from the proposed lease sales as they relate to oil and gas industries and geographic locations as benefits. This review will next evaluate the qualitative discussion of those impacts noted by BOEM.

⁵⁴ For simplification, Table 3 in this report combines all other OCS program areas that are not likely to be included in leases offered in the next Five-Year Program. The original BOEM 2022a, Table 8-2 breakdown of regional allocation ESCs for all OCS regions shows that BOEM calculates that all OCS regions individually would experience a net benefit from the No Sale Option compared to the leasing program except for Washington/Oregon which would experience a very small cost of \$5 million. Even though BOEM included all OCS areas in its analysis, this review focuses on the regional economic impact analysis findings for Cook Inlet and the Gulf of Mexico (GOM) Program Area 1 because the Secretary has stated that at most those two areas are where the next five-year Proposed Program potential lease sales will occur.

⁵⁵ Pulled from BOEM 2022a, Table 8-2.

⁵⁶ BOEM 2022a, p.8-35 to p.8-36. The ESC methodology is described in the Economic Analysis Methodology (BOEM 2022b) section 1.2.4 Offshore Environmental Cost Model p.1-10 to 1-20
BOEM performs the Environmental and Social Cost (ESC) calculation of OCS activities and of the No Sale Option, using the OECM and the MarketSim model and BOEM’s mid-activity case. Section 18(a)(2)(B) of the OCS Lands Act mandates that the Secretary evaluate “an equitable sharing of developmental benefits and environmental risks among the various regions” as part of the decision of magnitude, timing, and location of proposed lease sales. This equitable sharing analysis calculation uses a regional economic impact approach that includes costs such as air quality and others listed in Table 4. Only a subset of the impacts that BOEM focuses on in its equitable sharing analysis are quantified and monetized to include in the ESC calculation (shown in Table 3). BOEM uses the OECM to calculate the estimated ESC of the proposed lease sales and that of the No Sale Option for each program area using cost data for each location likely to be impacted. Then BOEM allocates the costs to geographic areas using a national perspective and then using a regional perspective. The regional allocation assigns costs based on where expected costs are incurred. The regional allocation is of particular interest to this review because the program areas also include the adjacent onshore states where BOEM argues that most of the costs and benefits are experienced.

Table 4. Categories BOEM includes in Environmental & Social Costs Analysis

Impacts Included in the Proposed Program ⁵⁷	Impacts Included in the No Sale Option
<ul style="list-style-type: none"> (1) Air quality (2) Ecology (restoration costs for habitats and biota injured by oil spills) (3) Recreation (loss of consumer surplus when oil spills interfere with recreational offshore fishing and beach visitation) (4) Property values (i.e. loss in potential rent and property values due to visual disamenities) (5) Subsistence harvests (Alaska-specific) (6) Commercial fisheries (i.e. loss from relocating operations due to oil and gas activity) 	<p>Costs of No Sale Option are largely from energy market substitutions.</p> <ul style="list-style-type: none"> (1) Air quality impacts for increase in overseas oil and gas imports via tankers (gross change in tanker oil imports⁵⁸) while in US waters and increase in air emissions from domestic onshore production of oil, natural gas, and coal (2) Increased non-catastrophic oil spill risks due to increased oil tanker deliveries. Oil spill volumes drive monetized costs for ecological, recreation, property values, and subsistence harvests.

BOEMs qualitative assessment of impacts on regional jobs and business activity

Based on the methodologies described in the *Economic Analysis Methodology for the 2023-2028 National OCS Oil and Gas Leasing Program*, it appears that BOEM does not provide estimated impacts to employment and wages in what it includes in its economic analyses other than possibly embedding them within the national NEV calculations. However, speculations about the expected impacts are central to the narrative accompanying BOEM’s Environmental and Social Costs calculation.⁵⁹ For example, BOEM makes statements such as: “Within and adjacent to the GOM, the consequences of selecting the No Sale Option would include losses of employment and business opportunities for communities that have been providing goods, services, and labor to support OCS activities.”⁶⁰ Concerning statements such as this set off alarm bells over fears that changes to leasing will harm employment and wages and make it important to assess and to suggest improvements to BOEM’s assessment so that BOEM’s discussion more accurately reflect the current and expected future trends in energy markets and the implications for employment and revenues.

⁵⁷ According to BOEM 2022a p.8-10, most of the environmental costs are borne by the marine and coastal areas adjacent to, and within, existing program areas. Methodology included in BOEM 2022b section 1.2.4 Offshore Environmental Cost Model starting on p. 1-10. Note: Costs I believe are only those associated with non catastrophic oil spills. Costs to marine habitat due to construction is not considered a cost. "Certain ecosystem services are quantified while others are not. For example, the Lease Sale Option quantifies losses based on the probability of oil spills from platforms or pipelines. BUT it does not quantify impact of habitat disturbances because of project footprint or loss of habitat for mammals and endangered species." 1.2.4 of BOEM2022b. Costs to ecological resources from general operations are not monetized in net benefit analysis. (See BOEM 2022b sec. 2.1.5)

⁵⁸ BOEM 2022b p. 1-14. Now based on gross change in tanker oil imports rather than the change in net imports in order to not double count the impact of exports since exports are accounted for in the Program stage of the model and would be counted twice if net imports were used in the No Sale Option stage of the model (since net imports are gross imports minus gross exports).

⁵⁹ BOEM 2022a Chapter 8

⁶⁰ BOEM 2022a p.8-3 and 8-4

BOEM notes that “In FY 2020, OCS oil and gas activities sustained approximately 176,000 jobs and contributed \$20.6 billion to national GDP.”⁶¹ First of all, a No Sale Option would in no way mean a near-term end to these jobs given that high levels of development will continue to occur from the large stockpile of leases that will exist prior to the start of the next Five-Year Program and because of the long time-horizon for when development on leases issued in recent years are expected to begin. Second, to put these 176,000 jobs related to OCS oil and gas activities into perspective, pursuing US climate targets and transitioning to a net-zero economy could create around three million energy supply-side jobs nationwide (a **net increase of 300,000 to 600,000 jobs**) by 2030.⁶² These new jobs will be created across all states and will be particularly high in regions with high renewable resources.⁶³ Jobs (especially in the energy sector) are constantly shifting across industries and across states especially during energy transitions. BOEM estimates that around 30% of all domestic OCS-related jobs are located outside of the immediate GOM five-state region.⁶⁴ Energy production and work can fluidly shift between different economic sectors and between energy sub-sectors.⁶⁵ Workers in the oil industry are highly sought after, particularly right now when the industry is having major workforce shortages.⁶⁶ Most oil industry workers not working on offshore wells in the future will be able to find jobs elsewhere, meaning a different sector would claim the same contributions to GDP and jobs.⁶⁷ In addition to high labor demand for work within the onshore oil and gas industry in the near term, going forward there is also high workforce transferability to adjacent energy sectors including in offshore wind, onshore renewables, and rig decommissioning.⁶⁸

Given the gradual estimated impacts of not offering new leases occurring slowly over the next decade as development continues on the roughly 8-million-acre stockpile of existing yet-to-be-developed leases, the economy and jobs will gradually shift over time to related fields (such as engineering and construction jobs in the expansion of renewable energy both onshore and

⁶¹ BOEM 2022a p.8-34 cites "Fiscal Year 2020 USDOE Economic Report: Bureau of Ocean Energy Management and Bureau of Safety and Environmental Enforcement Economic Contribution Estimates."

⁶² Larson et al 2021

⁶³ According to analysis by Larson et al 2021 (p.285-288). Energy-related employment will rise in Mississippi, Alabama, and Florida by 15% above 2021 levels under a net-zero transition as solar and grid-related jobs increase especially in the 2030s and 2040s. Princeton forecasts that energy-related jobs in Texas will largely stay steady but the sectors will shift from oil and gas to wind and grid-related jobs. In Louisiana a net-zero forecast shows that employment will remain fairly steady in the 2020s and 2030s, but there will be greater job loss in the 2040s. Again, by the 2040s many of those currently employed in oil and gas in Louisiana will be nearing retirement and this gives two decades for the Louisiana economy to adjust and grow its non-energy related sectors.

⁶⁴ BOEM 2022a p.8-7 to 8-8

⁶⁵ Nguyen, T. “Labor shortage remains a major challenge for oil and gas: Spring 2022 outlook.” Real Economy. (7 Feb. 2022) <https://realeconomy.rsmus.com/labor-shortage-remains-a-major-challenge-for-oil-and-gas-spring-2022-outlook/>

⁶⁶ Hampton, L., Kelly, S., Williams, N. “North American oil companies scramble to find workers despite boom. Reuters. (29 April 2022). <https://www.reuters.com/business/energy/n-american-oil-companies-scramble-find-workers-despite-boom-2022-04-29/>

⁶⁷ A 2021 analysis of BLS data by the Center for Economic and Policy Research (CEPR) estimates that around 70% of those employed in the US fossil fuel industry have skills that directly transfer to find work in other industries without the need for additional training (40%) or that can very likely be transferred to other industries with some training (30%). Source: Baker, D., Lee, A. “The Employment Impact of Curtailing Fossil Fuel Use.” Center for Economic and Policy Research. (26 May 2021).

<https://cepr.net/report/the-employment-impact-of-curtailling-fossil-fuel-use/>

⁶⁸ Energy Transition Institute. 2021. Robert Gordon University. “UK Offshore Energy Workforce Transferability Review.” <https://www.rgu.ac.uk/wp-content/uploads/2021/05/workforce-transferability-report.pdf>

offshore, the expansion of electric vehicle charging stations, etc.). DOI rightfully admits that the socioeconomic impacts of the No Sale Option in the Gulf of Mexico largely depend on the extent to which other business opportunities arise such as in the renewable energy industry.⁶⁹ But it provides no more on the current or expected prospects of the energy transition in the region. Both onshore wind and utility-scale solar are competitive in counties with high levels of fossil fuel employment including along the Gulf Coast.⁷⁰ DOI also plans to permit 30 gigawatts of offshore wind generating capacity by 2030 and is preparing for sales in the Gulf of Mexico.^{71,72}

BOEM notes that the No Sale Option in the GOM would lead to benefits in additional business opportunities from an increase in onshore production and specifically adds that the expected production increase would primarily occur in the Gulf Coast states.⁷³ This assessment may be because onshore oil and gas production appears to be more job-intensive than offshore development. BOEM also explains that by not offering new leases, the rate of decommissioning oil and gas structures would increase and “decommissioning activities would support economic activity for the companies and workers that perform the decommissioning work.”⁷⁴ Again, it does not appear that the impacts on business opportunities or employment are actually included in BOEM’s calculations.

BOEM implies that oil and gas jobs that could be lost in the GOM due to a No Sale Option versus the proposed program are jobs that “earn a significant wage premium” and that “oil and gas extraction jobs earn more than 150% of the average hourly wage of other employees” but BOEM does not provide data on wages of other industry-related jobs, nor does it provide data on the safety risks, job length and security, benefits, and other indications of job quality.⁷⁵ The fact is that overall, the availability of oil and gas jobs has been shrinking for years. Subject to volatile global prices for oil and with efforts to cut costs and streamline workloads, the oil and gas industry workforce faces a lot of instability.⁷⁶ Offshore employment tracked by work hours dropped by more than 40% between 2011 and 2019.⁷⁷ The **ongoing consolidation of jobs** in the oil and gas industry needs to be accounted for given that the trend is expected to continue.

⁶⁹ BOEM 2022a p. 8-27

⁷⁰ Brookings analysis of Emsi and UT Austin Energy Institute Levelized Cost of Electricity data.

Timer, A., Kane, J., and George, C. 2021. How renewable energy jobs can uplift fossil fuel communities and remake climate politics. Brookings. <https://www.brookings.edu/research/how-renewable-energy-jobs-can-uplift-fossil-fuel-communities-and-remake-climate-politics/>

⁷¹ BOEM. January 2022. BOEM Initiates Environmental Assessment for Offshore Wind in the Gulf of Mexico. <https://www.boem.gov/newsroom/press-releases/boem-initiates-environmental-assessment-offshore-wind-gulf-mexico>

⁷² U.S. Department of the Interior. 20 July 2022. Department of the Interior Announces Next Steps for Wind Energy in Gulf of Mexico. <https://www.doi.gov/pressreleases/department-interior-announces-next-steps-offshore-wind-energy-gulf-mexico>

⁷³ BOEM 2022a p.8-27

⁷⁴ BOEM 2022a p.8-28

⁷⁵ BOEM 2022a p.8-7 citing BLS (2017). "Employment, Hours, and Earnings from the Current Employment Statistics Survey. Series Title: Average Hourly Earnings of All Employees, Total Private, Not Seasonally Adjusted." Retrieved August 8, 2017, from <https://data.bls.gov/pdq/SurveyOutputServlet>.

⁷⁶ US Bureau of Labor Statistics, All Employees, Oil and Gas Extraction. retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/CES1021100001>, June 17, 2022.

⁷⁷ US Bureau of Safety and Environmental Enforcement. 2019. Safety and Environmental Performance Data for Industry Benchmarking. <https://www.bsee.gov/sites/bsee.gov/files/safety-and-environmental-performance-data-for-industry-benchmarking-cy-2019-12-26-20.pdf>

BOEM acknowledges this trend, but it is unclear if BOEM actually accounts for this in the modeling.⁷⁸ Overall trends show oil and gas extraction jobs have been on the decline in the US since 2014⁷⁹ and machine automation is expected to decrease the number of human workers in the industry going forward.⁸⁰

In addition, many oil and gas workers have been leaving these jobs because there is more certainty and physical safety in other fields. Following massive layoffs in the oil and gas industry during the COVID-19 pandemic in 2020, many workers no longer want to return.⁸¹ These jobs are amongst the most dangerous in the US. A 2018 article by the Center for Public Integrity found that data shows oil and gas workers are five times more likely to die on the job than in other industries.⁸² That is just what is officially counted. A 2021 investigation uncovered that fatalities of offshore workers in the Gulf of Mexico are twice as high as what is officially reported.⁸³ It is difficult to disaggregate the supposed future job declines that BOEM discusses into those caused by the No Sale Option versus ongoing job declines that are continuing historic trends. If indeed many workers no longer want to return to or continue in offshore oil and gas jobs, then the expected number of jobs in the industry even under the proposed plan would be lower and subsequently, the comparative number of jobs in the industry that would be “lost” due to not offering new leases would be further decreased when looking at the No Sale Option.

Looking at expected regional impacts of changes to federal revenue transfers, the vast majority of government revenues (88%) come from production royalties which will continue to be high for a number of years under a zero leasing five-year plan.⁸⁴ In fact, BOEM’s analysis finds that the GOMESA revenue sharing caps are likely to be met in future years due to the expected revenue from production royalties on existing leases alone.⁸⁵ As such, the bulk of revenue shared with Gulf states will likely be the same amount regardless of whether the proposed program leases are offered or whether the Secretary decides to pursue the No Sale Option.

BOEM notes that “for the GOM, where the economies of the adjacent communities -- and even state and local treasuries -- depend on revenues from income taxes and continued use of infrastructure.”⁸⁶ BOEM fails to cite the evidence behind this statement. In fact, Texas and Florida have no income tax. The other Gulf states levy low individual income tax rates with

⁷⁸ BOEM 2022a p.8-8 and 8-34 cites USDOJ (2020). "U.S. Department of the Interior Economics Contributions Report: FY 2019." Retrieved September 24, 2020, Access 2020, https://doi.sciencebase.gov/doidv/files/2019/pdf/Econ%20Report%202019_FINAL.pdf.

⁷⁹ US Bureau of Labor Statistics, All Employees, Oil and Gas Extraction [CES1021100001], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/CES1021100001>, June 17, 2022.

⁸⁰ De Luna, Marcy. 2021. “Robots could replace hundreds of thousands of oil and gas jobs by 2030.” Houston Chronicle. 29 March 2021. <https://www.houstonchronicle.com/business/energy/article/Robots-could-replace-hundreds-of-thousands-of-oil-16061352.php>

⁸¹ Nguyen 2022.

⁸² Morris, Jim. 2018. The Center for Public Integrity. “Death in the oilfields.” <https://apps.publicintegrity.org/blowout/us-oil-worker-safety/> Cites US Bureau of Labor Statistics. <https://www.bls.gov/iag/tgs/iag211.htm>

⁸³ Sneath, Sara. 2021. WWNO. New Orleans Public Radio. “Offshore oil and gas worker fatalities are underreported by federal safety agency.” <https://www.wwno.org/coastal-desk/2021-08-18/offshore-oil-and-gas-worker-fatalities-are-underreported-by-federal-safety-agency>

⁸⁴ US DOI. ONRR. Fiscal Year Revenue Data. (Accessed September 2022).

⁸⁵ BOEM 2022a p.8-25 and p.8-28

⁸⁶ BOEM 2022a p. 8-25

Louisiana levying between 2-6%, Mississippi is between 3-5%, and Alabama levies between 2%-5%.⁸⁷ BOEM fails to provide estimates that net income in the Gulf states would be reduced because of not leasing, especially if properly accounting for expected employment shifts to other economic sectors.

Furthermore, because most government revenue impacts will occur gradually over the next decade and beyond, there is ample time for the government to adjust laws to ensure that programs continue to be funded through other revenue streams (including through renewable energy on federal lands and waters).

Shifting focus to Alaska, BOEM makes a point of saying that “BOEM does not expect employment patterns to significantly change with new Alaska OCS development.”⁸⁸ The analysis notes that for all regions without a history of offshore development in federal waters (this includes all of Alaska OCS areas) the No Sale Option costs would be “foregone financial and fiscal opportunities associated with oil and gas development.”⁸⁹ This distinction is important because the decision to not offer leases in these areas would not mean a loss of existing employment, business, or revenue transfers.

Specifically for Cook Inlet, based on the employment demographics of projects in neighboring state waters, BOEM surmises that many working on potential OCS projects in Cook Inlet would reside in nearby communities, live in larger population centers in the region, or commute from places outside of Alaska.⁹⁰ However it does not provide information on actual numbers of expected jobs nor on the breakdown of expected economic benefits expected to be felt locally versus outside of Alaska. Furthermore, based on recent history, doubt remains as to whether demand exists for OCS leases in the Cook Inlet or even if leases sold would be developed.⁹¹ Seemingly in reference to proposed OCS leasing in Cook Inlet, BOEM alarmingly states that:

“Should new development occur, and because Alaska’s existing oil and gas production and employment opportunities are declining, benefits to the state and local communities from activities resulting from proposed Alaska sales could be in the form of further job loss, income, and government revenues, rather than new opportunities and increases in overall income.”⁹²[emphasis added]

Conclusion

BOEM’s analysis of its proposed 2023-2028 federal offshore oil and gas leasing program is insufficient and does not support a conclusion that the economic costs outweigh the benefits of the No Sale Option. Concerns with the underlying assumptions behind BOEM’s production

⁸⁷ <https://www.nerdwallet.com/article/taxes/state-income-tax-rates>

⁸⁸ BOEM 2022a p.8-15

⁸⁹ BOEM 2022a p.8-3 and 8-4

⁹⁰ BOEM 2022a p.8-13

⁹¹ BOEM 2022a p.8-14: “Existing leases from the 2017 OCS Cook Inlet lease sale have not gone into production and, as of June 2022, BOEM is not in receipt of a completed exploration plan.

⁹² BOEM 2022a p.8-14

projections skew the nationwide economic analysis. BOEM undercounts the existing stockpile of leases and BOEM's findings of immediate declines in federal offshore production due to not offering new leases are inconsistent with findings from four other published modeling results. The analysis fails to account for the expected change in demand for fossil fuels now expected to occur due to current policy including the Inflation Reduction Act and failure to include the cost of downstream combustion means that BOEM is dramatically undercounting the economic costs of pursuing the Proposed Program compared to the No Sale Option. While BOEM acknowledges that the country will need to shift away from fossil fuels and suggests policy will demand it, it fails to model the expected market shifts under a net-zero pathway scenario that would dramatically change the expected costs of pursuing the Proposed Program. Even before accounting for issues that bias the calculations in favor of the Proposed Program, the claimed monetary impacts of the No Sale Option are quite small when put into perspective.

BOEM's region-specific analysis is scant. The one component of the net benefits analysis that focuses on region-specific impacts, BOEM finds a relative benefit from the No Sale Option for the states neighboring the Gulf of Mexico and for the communities bordering the Cook Inlet in Alaska. BOEM does not quantitatively estimate impacts to jobs, business opportunities, and economic activity in the Gulf of Mexico or Cook Inlet regions, and instead the report makes qualitative statements that paint an incomplete picture. Adaptation and substitution play an important role in the way energy and job markets work in real life. Drilling on existing leases will continue for many years regardless of the number of new leases issued going forward and the impact to industry of a change in issuing new leases would be gradual over the next decade and beyond, giving plenty of time for the workforce, and subsequent sources of business activity, wages, and government revenues to adjust both nationwide as well as in the Gulf of Mexico and Alaska.