

## C O M M E N T

# No New Fossil Fuel Leasing: The Only Path to Maximizing Social Welfare in the Climate Change Era

by Rebecca Fischer and Daniel Timmons

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## I. Introduction

In *Federal Lands and Fossil Fuels: Maximizing Social Welfare in Federal Energy Leasing*, Prof. Jayni Foley Hein assesses inefficiencies in the federal fossil fuel leasing program that lead to the over-extraction of fossil fuels at great societal cost. In recognition of the U.S. Department of the Interior's (Interior's) role in stewarding federal lands for the long-term benefit of the American people, Hein proposes that Interior should adopt a policy of seeking to maximize social welfare or "net public benefits" in its leasing decisions. The article suggests that such reforms could significantly increase revenues for states and the federal government, while simultaneously reducing greenhouse gas emissions and other environmental costs. Hein provides valuable, practical suggestions for how Interior could utilize strategic lease planning and make changes to its royalty rates and bidding processes that would help the agency account for the social cost of carbon.

Addressing the current climate crisis, however, requires much more than marginal changes to royalty rates and the leasing process. That said, Professor Hein's proposed reforms—if fully implemented—could potentially have significant on-the-ground impacts. First, if federal agencies truly accounted for the social costs of climate change, they would come to the inescapable conclusion that leasing new fossil fuels has no net public benefit. Maximizing social welfare and averting catastrophic climate change requires a rapid shift away from fossil fuels that is simply incompatible with new fossil fuel leasing on federal lands. Second, Professor Hein fails to fully account for the climate impacts of existing fossil fuel leases, the development of which may also push the world over warming limits. Thus, effective reforms must ultimately phase out existing leases as well. Finally, Interior's staunch opposition to a full accounting for the social costs of fossil fuel leasing must be acknowledged. Even under more climate change-aware administrations, Interior was unwilling to complete a programmatic analysis of its federal onshore oil and gas leasing

program or fully account for the costs of carbon at the lease sale or permit to drill stages. Thus, any future reform which relies on Interior's discretion will require concerted public pressure to ensure social welfare is maximized in its management of our federal public lands.

## II. The Federal Fossil Fuel Program

Professor Hein's article first assesses the current state of Interior's fossil fuel program, discussing the recent boom in fossil fuel production and lagging regulatory response.<sup>1</sup> Advances in technology, such as multi-stage hydraulic fracturing and horizontal drilling, have allowed the United States to recently become the world's largest producer of oil<sup>2</sup> and natural gas.<sup>3</sup> Oil production on federal lands is at record levels,<sup>4</sup> and some 24% of crude oil, 13% of natural gas, and 42% of coal produced in the country comes from federal lands.<sup>5</sup>

As Professor Hein highlights, however, Interior's fossil fuel leasing program has failed to keep up with the recent boom in production and its attendant social costs, privileging the economic interests of extractive industry over public welfare. For example, unlike for offshore drilling, Interior does not prepare five-year programmatic assessments for its onshore leasing programs.<sup>6</sup> Instead leasing decisions are

1. See generally Jayni Foley Hein, *Federal Lands and Fossil Fuels: Maximizing Social Welfare in Federal Energy Leasing*, 42 HARV. ENVTL. L. REV. 1 (2018).
2. U.S. ENERGY INFO. ADMIN., THE UNITED STATES IS NOW THE LARGEST GLOBAL CRUDE OIL PRODUCER (2018), <https://www.eia.gov/todayinenergy/detail.php?id=37053> (last visited Feb. 8, 2019).
3. U.S. ENERGY INFO. ADMIN., UNITED STATES REMAINS THE WORLD'S TOP PRODUCER OF PETROLEUM AND NATURAL GAS HYDROCARBONS (2018), <https://www.eia.gov/todayinenergy/detail.php?id=36292> (last visited Feb. 8, 2019).
4. CONG. RES. SERV., U.S. CRUDE OIL AND NATURAL GAS PRODUCTION IN FEDERAL AND NONFEDERAL AREAS 1, 3 (2018), <https://crsreports.congress.gov/product/pdf/R/R42432>.
5. *Id.* at 1, 2; STRATUS CONSULTING, GREENHOUSE GAS EMISSIONS FROM FOSSIL ENERGY EXTRACTED FROM FEDERAL LANDS AND WATERS: AN UPDATE, 1, 2 (2014).
6. See WildEarth Guardians, Petition Requesting a Programmatic Environmental Impact Statement Addressing the Bureau of Land Management's Oil

reactive in nature, with Interior relying on private fossil fuel companies to nominate parcels for leasing, allowing the narrow private interests of those companies to determine where and when fossil fuel extraction occurs.

As Professor Hein explains, bidding at lease sales is also often non-competitive,<sup>7</sup> and the Secretary of Interior has never exercised the authority to raise the national minimum bid for oil and gas sales, which has remained stuck at \$2 per acre for decades.<sup>8</sup> Further, royalty rates have not kept pace with changes in the broader market, or even inflation.<sup>9</sup> And the Donald Trump Administration has tried to walk back a 2016 regulation allowing the Bureau of Land Management (BLM) to set new royalty rates higher than the statutory 12.5% minimum.<sup>10</sup> Thus, Interior has chosen to tie its own hands to keep minimum bids and royalty rates artificially low, benefitting private oil and gas companies at the expense of American taxpayers and the global climate.<sup>11</sup>

These artificially low bids and royalty rates fail to fully compensate the American public for the social costs of fossil fuel production related to climate change, air quality impacts, earthquakes induced by fracking and injection wells, fragmentation of wildlife habitat, use and contamination of vast quantities of fresh water, and public health and safety risks.<sup>12</sup> Current royalty rates do not even account for the economic value of methane, a potent greenhouse gas, wasted through leaks, intentional venting, or flaring.<sup>13</sup>

### III. The Proposed Reforms

In outlining her social welfare maximization proposal, Professor Hein takes seriously—perhaps more seriously than Interior—the agency’s role as steward of the nation’s public lands for the benefit of current and future generations.<sup>14</sup> The crux of Professor Hein’s agency reform proposal is that

Interior has broad discretion to interpret its statutory mandate to set fossil fuel royalty rates as incorporating principles of social welfare maximization.<sup>15</sup>

Under the Mineral Leasing Act, royalty rates are to provide a “fair market value” to the taxpayer.<sup>16</sup> Reviewing a series of federal statutes, legislative history, relevant case law, and Interior regulations, Professor Hein convincingly argues that the term “fair market value” need not simply refer to the value of the extracted resources, but also may reasonably include option value, or “informational value of delaying irreversible decisions.”<sup>17</sup> In other words, the law does not require Interior to ignore the long-term negative consequences of fossil fuel development in setting royalty rates.

Professor Hein proposes a series of reforms to rationalize the federal fossil fuel leasing process and optimize future production.<sup>18</sup> First, Interior should conduct a programmatic review of its fossil fuel leasing programs, including a comprehensive cost-benefit analysis.<sup>19</sup> As detailed below, we believe that this type of programmatic action alone—if *conducted properly*—would lead Interior to the inevitable conclusion that new fossil fuel leasing activities must cease. Professor Hein further suggests: (1) technical adjustments to royalty rates to recoup some of the environmental and social costs of production, such as the adoption of existing federal Social Cost of Carbon and Social Cost of Methane protocols,<sup>20</sup> (2) requirements for energy substitution analysis and consideration of climate effects during NEPA alternatives analysis,<sup>21</sup> (3) eliminating royalty rate reductions and loopholes,<sup>22</sup> and (4) bidding reforms to promote competitiveness.<sup>23</sup>

At their core, Professor Hein’s reforms would require Interior to adopt a socially optimal definition of fair market value, ensuring that any future fossil fuel leasing on federal lands—if any—would be required to have a net positive benefit to the American people.

### IV. The Realities of the Climate Crisis

Unfortunately, the current state of the climate crisis makes it impossible for the United States to keep global warming limited to levels recommended by scientists while leasing new fossil fuels. Indeed, if Interior were to properly implement Hein’s concept of maximizing social welfare in its decisions, it would necessarily conclude that new fossil fuel leasing must be halted, and existing leases must be phased out. Federal fossil fuels emit a significant portion of global greenhouse gas emissions,<sup>24</sup> and allowing new leasing could

and Gas Leasing Program and Formal Adoption of the Council on Environmental—Quality’s Guidance for Greenhouse Gas Emissions and Climate Change Impacts (2016), [http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/case-documents/2016/20160120\\_docket-none\\_petition.pdf](http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/case-documents/2016/20160120_docket-none_petition.pdf).

7. See Hein, *supra* note 1, at 13.

8. *Id.*

9. *Id.*

10. See U.S. Dep’t of Interior, Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision of Certain Requirements, 83 C.F.R. 3160 (2018), <https://www.govinfo.gov/content/pkg/FR-2018-09-28/pdf/2018-20689.pdf> (purporting to rescind Barack Obama-era rule, which clarified BLM’s authority to set royalty rates at or above 12.5%) (hereinafter “2018 Methane Rescission Rule”).

11. According to Hein, many states set royalty rates on state lands at between 15 to 20 percent, and private royalty rates in states like Oklahoma and Texas are often above 20 percent. See Hein, *supra* note 1, at 17.

12. See generally Concerned Health Prof’ls of NY & Physicians for Soc. Responsibility, *Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking (Unconventional Gas and Oil Extraction)* (5th ed. 2018) (hereinafter *Fracking Compendium*).

13. In yet another regulatory giveaway to the fossil fuel industry, the Trump Administration has tried to rescind the Obama Administration’s moderate attempt to reduce methane emissions. 2018 Methane Rescission Rule, *supra* note 10. Wildearth Guardians and a coalition of environmental groups have challenged the 2018 Methane Rescission Rule in federal court. *Sierra Club v. Zinke*, No. 3:18-cv-05984 (N.D. Cal. filed Sept. 28, 2018).

14. Hein, *supra* note 1, at 6.

15. *Id.* at Part III.

16. 30 U.S.C. §201(a)(1).

17. Hein, *supra* note 1, at 33-36.

18. See *id.* at 10-11.

19. *Id.* at 7.

20. *Id.* at 18-20.

21. *Id.* at 31-32.

22. *Id.* at 31.

23. *Id.* at 31-32.

24. Greenhouse gases include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. See U.S. EPA,

use up all of the United States' remaining carbon budget to keep warming below 2.0°C.<sup>25</sup> Furthermore, the dramatic increase in projected impacts between warming of 1.5°C and 2.0°C described in the Intergovernmental Panel on Climate Change's (IPCC's) recent special report should compel action to limit warming to 1.5°C.<sup>26</sup> Thus, Interior must stop new leasing and phase out existing federal fossil fuel leases to limit the consequences of climate change.

The U.S. role in the global climate crisis is undeniable. The United States is the largest historic carbon emitter in the world<sup>27</sup> and the second largest current carbon emitter in the world.<sup>28</sup> As of 2014, emissions from federal fossil fuels were approximately 23.0% of the United States' carbon emissions.<sup>29</sup> If federal greenhouse gas emissions were their own country, they would be ranked 5th globally.<sup>30</sup> And, the U.S. entrenchment in fossil fuels is increasing. As Hein notes, the United States is now the world's largest producer of crude oil and natural gas,<sup>31</sup> and the third largest producer of coal.<sup>32</sup>

The Paris Agreement, of which the United States is still a part of until 2020,<sup>33</sup> commits countries to "[h]olding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels."<sup>34</sup> This commitment has given rise to the concept of carbon budgeting, where remaining global carbon emis-

sions are calculated based on the 1.5°C and 2°C warming limits.<sup>35</sup> Apportioning this global carbon budget by country provides the United States with a finite range of allowable carbon emissions.<sup>36</sup>

To date, our world has already experienced approximately 1.0°C of global warming above pre-industrial levels.<sup>37</sup> This means that our world can experience no more than 0.5°C of additional warming. According to the IPCC, "[g]lobal warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate."<sup>38</sup> Put another way, the world has 12 years to cut global greenhouse gas emissions by 45% from 2010 levels and must zero out emissions by 2050 in order to limit warming to 1.5°C.<sup>39</sup>

Limiting warming to the limits outlined by the Paris Agreement is critical.<sup>40</sup> Even allowing warming of 2.0°C above pre-industrial levels, as compared to 1.5°C, will expose 10 million more people to flooding as a result of sea level rise, greatly increase habitat loss for all species, kill off more than 99% of coral reefs, reduce fisheries, limit agricultural yields, and leave several million more people susceptible to poverty.<sup>41</sup>

Unfortunately, greenhouse gas emissions from unleased federal oil, gas, and coal could push the United States beyond a carbon budget tailored to limit warming to 2.0°C.<sup>42</sup> For example, a 2015 report estimates that potential emissions from unleased federal fossil fuels equal 319 to 450 gigatons (Gt) of carbon dioxide equivalent (CO<sub>2</sub>e).<sup>43</sup> The U.S. carbon budget has been calculated as between 85 to 356 Gt of CO<sub>2</sub>e based on a 2.0°C warming limit.<sup>44</sup> Keeping global warming to 1.5°C will require even further reductions to this budget.

In addition, already-leased federal fossil fuels could by themselves consume the United States' remaining carbon budget.

*Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 66496, 66497 (Dec. 15, 2009), <https://www.govinfo.gov/content/pkg/FR-2009-12-15/pdf/E9-29537.pdf>.

25. Ecoshift Consulting, *The Potential Greenhouse Gas Emissions From U.S. Federal Fossil Fuels* 1, 3 (2015), <http://www.ecoshiftconsulting.com/wp-content/uploads/Potential-Greenhouse-Gas-Emissions-U-S-Federal-Fossil-Fuels.pdf>.

26. IPCC, *SPECIAL REPORT: GLOBAL WARMING OF 1.5°C, SUMMARY FOR POLICYMAKERS*, 1,6, 9-11 (2018), <https://www.ipcc.ch/sr15/> (hereinafter IPCC SR15, *SUMMARY FOR POLICYMAKERS*).

27. Justin Gillis & Nadja Popovich, *The U.S. Is the Biggest Carbon Polluter in History. It Just Walked Away From the Paris Climate Deal*, N.Y. TIMES, June 1, 2017, <https://www.nytimes.com/interactive/2017/06/01/climate/us-biggest-carbon-polluter-in-history-will-it-walk-away-from-the-paris-climate-deal.html>.

28. Global Carbon Atlas, CO<sub>2</sub> Emissions, "Chart View," <http://www.globalcarbonatlas.org/en/CO2-emissions> (last visited Feb. 11, 2019).

29. U.S. GEOLOGICAL SERV., *FEDERAL LANDS GREENHOUSE GAS EMISSIONS AND SEQUESTRATION IN THE UNITED STATES: ESTIMATES FOR 2005-14* at 1, 8 (2018).

30. The Wilderness Society, *Federal Lands Emissions Accountability Tool*, <https://www.wilderness.org/articles/article/federal-lands-emissions-accountability-tool> (last visited Feb. 10, 2019).

31. EIA, *Crude Oil Production*, *supra* note 4; EIA, *Petroleum & Natural Gas Production*, *supra* note 4.

32. See KELLY TROUT & LORNE STOCKMAN, *OIL CHANGE INTERNATIONAL, DRILLING TOWARD DISASTER: WHY U.S. OIL AND GAS EXPANSION IS INCOMPATIBLE WITH CLIMATE LIMITS* 5 (2019), <http://priceofoil.org/content/uploads/2019/01/Drilling-Towards-Disaster-Web-v3.pdf>.

33. See Valerie Volcovici, *U.S. Submits Formal Notice of Withdrawal From Paris Climate Pact*, REUTERS, Aug. 4, 2018, <https://www.reuters.com/article/us-climate-usa-paris/u-s-submits-formal-notice-of-withdrawal-from-paris-climate-pact-idUSKBN1AK2FM>. To date, 20 states have also independently committed to uphold the terms of the Paris Agreement. U.S. Climate Alliance, Michigan Governor Gretchen Whitmer Joins Climate Alliance, Feb. 4, 2019, <https://www.usclimatealliance.org/publications/2019/2/4/michigan-governor-gretchen-whitmer-joins-us-climate-alliance>.

34. United Nations Climate Change, *Paris Agreement*, Art. II, Section 1(a), [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf).

35. The concept of assessing fossil fuel reserves within a global carbon budget has been discussed in depth in two Oil Change International reports. The first report, released in 2016, calculated a worldwide carbon budget by determining the maximum level of greenhouse gas emissions allowable based on the Intergovernmental Panel on Climate Change's (IPCC's) recommended warming limits of 2°C and 1.5°C. See Greg Mutitt et al., *The Sky's the Limit*, OIL CHANGE INTERNATIONAL 1, 12 (2016), [http://priceofoil.org/content/uploads/2016/09/OIL\\_the\\_skys\\_limit\\_2016\\_FINAL\\_2.pdf](http://priceofoil.org/content/uploads/2016/09/OIL_the_skys_limit_2016_FINAL_2.pdf). The second report, released in January 2019, builds upon the first report and focuses on the United States' current entrenchment in oil and gas that will lead to carbon burst in the near future. See TROUT & STOCKMAN, *supra* note 32, at 1, 3.

36. See generally Ecoshift, *supra* note 25.

37. IPCC SR15, *SUMMARY FOR POLICYMAKERS*, *supra* note 26, at 6.

38. *Id.*

39. *Id.* at 14.

40. It should be noted that adhering to the emissions reduction commitments stemming from the Paris Agreement (26% to 28% below 2005 levels) would not be enough to limit warming to 1.5 or 2.0°C. Jeffery Greenblatt & Max Wei, *Assessment of the Climate Commitments and Additional Mitigation Policies of the United States*, 6 NATURE CLIMATE CHANGE 1, 1 (2016). See also TROUT & STOCKMAN, *supra* note 32, at Preface.

41. *Id.* at 9-11.

42. Ecoshift, *supra* note 25, at 2 (finding that "The potential emissions from unleased federal fossil fuels are incompatible with any U.S. share of global carbon limits that would keep emissions below scientifically advised levels.").

43. *Id.* at 3.

44. *Id.* at 4 (citing Michael Raupach et al., *Sharing a Quota on Cumulative Carbon Emissions*, 4 NATURE CLIMATE CHANGE 873, 874 (2014)).

With the United States having failed to take any significant action to limit GHG emissions since 2015 and “leased federal fossil fuels represent[ing] 30 to 43 Gt CO<sub>2</sub>e,”<sup>45</sup> this amount could easily consume the United States’ existing carbon budget based on a 1.5°C warming limit.

Indeed, reports have found that the world’s *currently operating* fields and mines could fully exhaust carbon budgets based on a 1.5°C warming limit.<sup>46</sup> And even if production were to stop in all of these fields, rapid expansion of U.S. oil and gas production from already leased lands is set to consume half the global oil and gas budget by 2030.<sup>47</sup> The bottom line is, if we want to keep the United States’ contribution to global climate change in line with levels recommended by the IPCC, we cannot allow new coal or oil and gas leasing on federal lands.

In sum, while Professor Hein presents a moderate, cautious approach to reform, the climate crisis demands much more. However, if Interior were to honestly evaluate the social welfare costs of fossil fuel leasing as Hein suggests, in the current climate crisis this would compel a dramatic and much-needed end to new federal leasing activities and phaseout of existing leases.

## V. The Political Challenge

Professor Hein focuses on agency-level reforms that would not require congressional action, likely a wise choice given political gridlock in Washington. Professor Hein, however, underestimates the political challenge of implementing technical reforms through Interior staff. Past practice suggests that, to the extent that substantial discretion remains with agency staff, it will generally be exercised on behalf of the agency’s fossil fuel industry ‘clients,’ not the American people. Professor Hein notes that “potential regulatory agency ‘capture’” may have contributed to the agency’s past non-competitive leasing practices,<sup>48</sup> but largely ignores the implications of this for implementation of needed reforms.<sup>49</sup>

While an honest accounting of social welfare should lead to radical changes in the federal fossil fuel programs, we unfortunately doubt Interior’s ability to make such an accurate accounting, which could jeopardize the agency’s historically close relationship with the fossil fuel industry. Thoughtfully designed regulatory reforms along the lines suggested by Professor Hein could still lead to marginal reductions in federal leasing. But unless Interior can be relied upon to fully and accurately account for the social costs of its fossil fuel programs, the impacts of the proposed reforms will remain modest. Instead, to stop future federal fossil fuel leasing activities—as needed to avoid catastrophic climate change—a clear top-down policy mandate is likely needed. We must “keep it in the ground.”

## VI. Conclusion

In *Maximizing Social Welfare in Federal Energy Leasing*, Professor Hein accurately assesses various deficiencies in the federal fossil fuel leasing program, which is inefficient, outdated, and generally fails to account for climate change and the impacts of horizontal drilling and multi-stage fracking. Under its existing statutory mandates, Interior should be considering social welfare in its leasing decisions, and Hein’s proposed reforms are a step in the right direction. To that end, increasing minimum bids and royalty rates should marginally reduce production on federal lands. Ultimately, however, the climate crisis demands a much more robust policy response. Since further development of new fossil fuel resources is incompatible with averting catastrophic climate change, the long-term negative consequences of future leasing undoubtedly outweigh any short-term economic benefits. There is simply no net social benefit to continued federal fossil fuel leasing. We must keep it in the ground.

45. *Id.* at 3.

46. Greg Mutitt et al., *supra* note 35, at 6. The report focuses on “developed reserves” from oil and gas fields and coal mines that are already operating. *Id.* at 17.

47. TROUT & STOCKMAN, *supra* note 32, at 21. Oil Change International arrives at this conclusion by assessing “core shale & discovered conventional reserves” or “reserves that are already discovered and evaluated, and already leased to a company in most cases, but for which no final development decision has yet been made.” *Id.* at 18.

48. Hein, *supra* note 13, at 35 n.182.

49. Exemplifying its capture by fossil fuel industries, BLM continued to process oil and gas drilling permits during the government shutdown in December 2018 and January 2019, while shuttering public-serving functions such as responses to Freedom of Information Act requests. *See e.g.*, Cooper Mc-Kim, *Favoritism or Economics: Oil and Gas Permitting During the Shutdown*, WYOMING PUBLIC MEDIA, Jan. 25, 2019, <https://www.wyomingpublicmedia.org/post/favoritism-or-economics-oil-and-gas-permitting-during-shutdown#stream/0>.