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## Prioritizing Proximity in Phasing Out Oil and Gas Extraction

Wyatt G. Sassman

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## Article

### Prioritizing Proximity in Phasing Out Oil and Gas Extraction

WYATT G. SASSMAN

*To avoid the most catastrophic impacts of climate change, most of the world's oil and gas reserves must remain in the ground. In the United States, this would require a dramatic phaseout of oil and gas extraction nationwide over the coming decades. How could we accomplish this? While recent legal scholarship emphasizes the importance of a just transition away from oil and gas extraction, little work has been done to navigate the legal, political, and equity hurdles associated with phasing out oil and gas extraction.*

*This Article seeks to start this conversation by offering one way to approach phaseouts of oil and gas extraction in the United States: prioritize phasing out extraction closest to people. This intuitive approach builds on the success of frontline communities in California and Colorado advocating for statewide setbacks that prioritize regulating oil and gas extraction closest to their communities. Among other virtues, this advocacy has successfully drawn the connection between the localized harms of oil and gas extraction on communities of color and low-income communities to the larger climate impacts of continued oil and gas extraction.*

*This Article argues that phaseout policies should follow these communities' lead and articulates several priorities for doing so: (1) stopping new extraction closest to people, (2) monitoring continued extraction closest to people, (3) plugging and reclaiming wells closest to people, and (4) matching proximity-based phaseouts with decarbonization programs. This approach to managing the decline of oil and gas extraction in the United States places such policies on the strongest footing against legal challenges while also targeting the roots of political support for extraction by reducing local dependency and supporting communities that have borne the direct impacts of fossil fuel extraction.*

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# Prioritizing Proximity in Phasing Out Oil and Gas Extraction

WYATT G. SASSMAN\*

## INTRODUCTION

In 2021, the United Nations Secretary-General reflected that the latest Intergovernmental Panel on Climate Change (IPCC) report “must sound the death knell for coal and fossil fuels, before they destroy our planet.”<sup>1</sup> Among other findings, the report emphasized that “[g]lobal warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO<sub>2</sub> and other greenhouse gas emissions occur in the coming decades.”<sup>2</sup> Limiting warming to 1.5°C is generally regarded as a crucial threshold for avoiding the most catastrophic impacts of climate change.<sup>3</sup> Since roughly the Industrial Revolution, combustion of fossil fuels has been the primary source of human greenhouse gas emissions, responsible for about sixty-four percent of total human-caused greenhouse gas emissions since 1750 and about eighty-six percent over the last ten years.<sup>4</sup> As such, any realistic pathway for avoiding catastrophic climate change requires a near-complete reduction of emissions from fossil fuels.<sup>5</sup> Yet global fossil

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<sup>1</sup> Press Release, U.N. Secretary-General, Secretary-General Calls Latest IPCC Climate Report ‘Code Red for Humanity’, Stressing ‘Irrefutable’ Evidence of Human Influence, U.N. Press Release SG/SM/20847 (Aug. 9, 2021), <https://press.un.org/en/2021/sgsm20847.doc.htm>.

<sup>2</sup> *Climate Change 2021: The Physical Science Basis*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE [IPCC] 14 (2021), [https://report.ipcc.ch/ar6/wg1/IPCC\\_AR6\\_WGI\\_FullReport.pdf](https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf).

<sup>3</sup> See, e.g., Lauren Sommer, *This Is What the World Looks Like if We Pass the Crucial 1.5-Degree Climate Threshold*, NPR (Nov. 8, 2021, 5:15 AM), <https://www.npr.org/2021/11/08/1052198840/1-5-degrees-warming-climate-change> (“By limiting the planet’s warming to 1.5 degrees Celsius, or 2.7 degrees Fahrenheit, by 2100, the hope is to stave off severe climate disruptions that could exacerbate hunger, conflict and drought worldwide.”); Chris Mooney et al., *We Looked at 1,200 Possibilities for the Planet’s Future. These Are Our Best Hope.*, WASH. POST (Dec. 1, 2022, 6:00 AM), <https://wapo.st/3uooisc> (calling “limiting the Earth’s warming to 1.5 degrees Celsius” the “world’s most important climate goal”).

<sup>4</sup> *Climate Change 2021: The Physical Science Basis*, *supra* note 2, at 80 (“Of the total anthropogenic CO<sub>2</sub> emissions, the combustion of fossil fuels was responsible for about 64% ± 15%, growing to an 86% ± 14% contribution over the past 10 years. The remainder resulted from land-use change.”); *id.* at 101 (“Fossil fuel combustion for energy, industry and land transportation are the largest contributing sectors on a 100-year time scale (*high confidence*).”).

<sup>5</sup> See J. Mijin Cha et al., *Environmental Justice, Just Transition, and a Low-Carbon Future for California*, 50 ENV’T L. REP. 10216, 10217 (2020) (“Achieving these goals will not be possible without substantially decreasing, if not outright ceasing, the extraction and use of fossil fuels, even with advances in sequestration technology.”).

fuel use has exploded recently, growing eight-fold since 1950 and doubling since 1980.<sup>6</sup> Even as solar power has become the cheapest way to generate electricity in human history,<sup>7</sup> fossil fuel demand is as high as it has ever been and projected to increase in the short term.<sup>8</sup> These projections, combined with the urgency of the climate crisis, have focused attention on policies intended to reduce overall emissions from fossil fuels by limiting extraction.<sup>9</sup> Policies targeted at restricting fossil fuel emissions by phasing down extraction have been characterized as the “only fail-safe way to stop climate breakdown.”<sup>10</sup> That’s why the Secretary-General urged in 2021 to “end all new fossil fuel exploration and production” or else the “1.5°C goal will fall quickly out of reach.”<sup>11</sup> The most recent IPCC report concluded that the goal may have already fallen out of reach unless we make deep cuts to existing fossil fuel infrastructure.<sup>12</sup>

The urgency of this task only highlights the scope of the challenge. For example, a fifty-fifty shot at avoiding 1.5 degrees of warming and the most catastrophic impacts of climate change requires that about sixty percent of the world’s known oil and gas reserves remain in the ground.<sup>13</sup> To achieve this, modeling suggests that oil and gas extraction across the world must generally peak in the next few years and decline “rapidly” by 2050.<sup>14</sup> For the United States, this would mean sharp declines in oil and gas production over the next two decades and the likely abandonment of costly projects that would extend fossil fuel use beyond then, such as liquefied gas export terminals.<sup>15</sup>

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<sup>6</sup> Hannah Ritchie et al., *Fossil Fuels*, OUR WORLD IN DATA, <https://ourworldindata.org/fossil-fuels> (last visited Feb. 2, 2023).

<sup>7</sup> See Simon Evans, *Solar Is Now “Cheapest Electricity in History,” Confirms IEA*, CARBON BRIEF (Oct. 13, 2020, 8:37 AM), <https://www.carbonbrief.org/solar-is-now-cheapest-electricity-in-history-confirms-iea>.

<sup>8</sup> See, e.g., Press Release, S&P Glob., S&P Global Commodity Insights Releases Its Latest 2023 Energy Outlook (Dec. 12, 2022), <https://press.spglobal.com/2022-12-12-S-P-Global-Commodity-Insights-Releases-its-Latest-2023-Energy-Outlook> (“Once again, demand for all fossil fuels will increase in 2023, which points to a global CO<sub>2</sub> emissions rise despite continued attention paid to climate and the energy transition.”).

<sup>9</sup> See Dan Welsby et al., *Unextractable Fossil Fuels in a 1.5 °C World*, 597 NATURE 230, 230–31 (2021) (describing limiting extraction policies around the world).

<sup>10</sup> Jason Hickel, *What Would It Look Like if We Treated Climate Change as an Actual Emergency?*, CURRENT AFFS. (Nov. 15, 2021), <https://www.currentaffairs.org/2021/11/what-would-it-look-like-if-we-treated-climate-change-as-an-actual-emergency>.

<sup>11</sup> Press Release, U.N. Secretary-General, *supra* note 1.

<sup>12</sup> See *Synthesis Report of the IPCC Sixth Assessment Report (AR6): Summary for Policymakers*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE [IPCC] 20 (2023), [https://report.ipcc.ch/ar6syr/pdf/IPCC\\_AR6\\_SYR\\_SPM.pdf](https://report.ipcc.ch/ar6syr/pdf/IPCC_AR6_SYR_SPM.pdf) (“Projected CO<sub>2</sub> emissions from existing fossil fuel infrastructure without additional abatement would exceed the remaining carbon budget for 1.5°C (50%) (high confidence).”).

<sup>13</sup> Welsby et al., *supra* note 9, at 231.

<sup>14</sup> *Id.* at 230.

<sup>15</sup> *Id.* at 231 (“This has important implications for US liquefied fossil methane gas exports, with prospects of low utilization rates of infrastructure, and limited prospect for future additional liquefaction capacity.”).

Implementing restrictions on oil and gas production in the United States at this speed and scale presents serious challenges legally, politically, and as a matter of equity.

Legally, phasing out oil and gas extraction requires navigating a tangle of state regulatory authority and private property rights that vary across jurisdictions.<sup>16</sup> Politically, the United States in recent years has deepened its commitment to oil and gas extraction as a central pillar of national domestic and foreign policy,<sup>17</sup> particularly through the export of liquefied gas,<sup>18</sup> while complex dynamics of dependency align the extractive industry with many governments of states and localities where extraction occurs.<sup>19</sup> Oil and gas extraction disproportionately harms communities of color and low-income communities across the country,<sup>20</sup> but poorly planned phaseouts can also exacerbate inequality through instability in energy costs and loss of income in those communities that depend on extraction.<sup>21</sup>

How, then, do you phase out oil and gas extraction in the United States?<sup>22</sup> While legal scholars have emphasized the importance of a just transition for energy communities, they have done less work theorizing how to overcome the legal, political, and equitable issues around phasing out oil and gas extraction.<sup>23</sup> Beyond legal scholarship, academics and policy advocates have identified a variety of strategies focused on national or global

<sup>16</sup> See *infra* Section IV.A (discussing legal challenges to state-law reforms in California).

<sup>17</sup> See, e.g., Zach Schonfeld, *Biden Advisor Calls Investor Refusal to Ramp Up Shale Drilling “Un-American,”* HILL (Dec. 11, 2022, 4:34 PM), <https://thehill.com/policy/energy-environment/3771025-biden-adviser-calls-investor-refusal-to-ramp-up-shale-drilling-un-american/> (quoting President Biden energy advisor Amos Hochstein as calling opposition to domestic drilling “un-American”).

<sup>18</sup> For example, the Biden administration’s agreement to provide Europe with gas after Russia’s invasion of Ukraine contemplates the EU “ensuring stable demand” for imported American liquefied gas through 2030. Press Release, White House, Joint Statement Between the U.S. and the European Commission on European Energy Security (Mar. 25, 2022), <https://www.whitehouse.gov/briefing-room/statements-releases/2022/03/25/joint-statement-between-the-united-states-and-the-european-commission-on-european-energy-security/>.

<sup>19</sup> See Wyatt G. Sassman, *The Legal Foundations of Extractive Power*, 71 UCLA L. REV. (forthcoming 2024), available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4387964](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4387964) (describing how legal structures enabling extraction also create the social and political conditions for continued extraction in communities).

<sup>20</sup> See generally Tim Donaghy & Charlie Jiang, *Fossil Fuel Racism: How Phasing Out Oil, Gas, and Coal Can Protect Communities*, GREENPEACE 18–19 (2021), <https://www.greenpeace.org/usa/wp-content/uploads/2021/04/Fossil-Fuel-Racism.pdf> (describing disproportionate impacts of oil and gas extraction).

<sup>21</sup> See *infra* Section I.C.

<sup>22</sup> Here, I am talking about state and private land, not federal land. An important line of work focuses on phasing out extraction on federal land.

<sup>23</sup> For work on transitions, see, for example, Craig Holt Segall, *Just Transitions for Oil and Gas Communities*, 39 VA. ENV’T L.J. 177, 200–04 (2021); Ann M. Eisenberg, Essay, *Transitions in Energy Communities*, 12 GEO. WASH. J. ENERGY & ENV’T L. 103, 105–06 (2021); Cha et al., *supra* note 5, at 10218–19. Other work discusses legal issues either at a very high level of generality, see David M. Driesen, *Phasing Out Fossil Fuels*, 38 NOVA L. REV. 523, 532 (2014), or at a broader scale than phasing out extraction itself, see Karl S. Coplan, *Fossil Fuel Abolition: Legal and Social Issues*, 41 COLUM. J. ENV’T L. 223, 246–69 (2016) (discussing some legal issues, but at a larger scale than phasing out extraction).

interventions.<sup>24</sup> The strategies include reducing federal subsidies,<sup>25</sup> implementing national bans on exploration and exports,<sup>26</sup> ratifying international treaties to cap and reduce global production,<sup>27</sup> denying or placing quotas on permits to extract,<sup>28</sup> banning products that use fossil fuels,<sup>29</sup> and nationalizing the oil and gas industry.<sup>30</sup> Some of these strategies have taken hold in the states; for example, California has started denying permits for oil and gas extraction and is among many states that have made commitments to phase out gasoline-fueled cars as part of its larger climate policies.<sup>31</sup> But, by and large, these strategies focus at the national and

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<sup>24</sup> One recent and notable exception is Mark Paul and Lina Moe's work identifying restrictive supply-side policies that, for example, highlights the value of "prioritiz[ing] the phasing out of polluting activities in communities that have faced injustices under the current fossil fuel extractive economy." MARK PAUL & LINA MOE, CLIMATE AND CMTY. PROJECT, AN ECONOMIST'S CASE FOR RESTRICTIVE SUPPLY SIDE POLICIES: TEN POLICIES TO MANAGE THE FOSSIL FUEL TRANSITION 26 (2023), [https://www.climateandcommunity.org/\\_files/ugd/d6378b\\_6f4e6bc38aa74051ac435c1fe9d96624.pdf](https://www.climateandcommunity.org/_files/ugd/d6378b_6f4e6bc38aa74051ac435c1fe9d96624.pdf). This Article supplements Paul & Moe's work by going into more detail on the benefits of and support for this approach.

<sup>25</sup> See HOLLY JEAN BUCK, ENDING FOSSIL FUELS: WHY NET ZERO IS NOT ENOUGH 155 (2021).

<sup>26</sup> *Id.* at 146.

<sup>27</sup> *Id.* at 149–52; see also Damian Carrington, *What Is the Fossil Fuel Non-Proliferation Treaty?*, GUARDIAN (Nov. 11, 2022, 9:12 AM), <https://www.theguardian.com/environment/2022/nov/11/what-is-the-fossil-fuel-non-proliferation-treaty> ("a proposed treaty to explicitly stop the expansion of fossil fuel exploitation and manage a just transition away from coal, oil and gas to clean energy").

<sup>28</sup> BUCK, *supra* note 25, at 159–66.

<sup>29</sup> *Id.* at 148–49.

<sup>30</sup> *Id.* at 167–75; see also, e.g., Robert Pollin, *Nationalize the U.S. Fossil Fuel Industry to Save the Planet*, AM. PROSPECT (Apr. 8, 2022), <https://prospect.org/environment/nationalize-us-fossil-fuel-industry-to-save-the-planet/>; Kate Aronoff, *A Moderate Proposal: Nationalize the Fossil Fuel Industry*, NEW REPUBLIC (Mar. 17, 2020), <https://newrepublic.com/article/156941/moderate-proposal-nationalize-fossil-fuel-industry>.

<sup>31</sup> See Associated Press, *California Oil Regulators Deny New Fracking Permits*, AP NEWS (July 10, 2021), <https://apnews.com/article/227a506338794c1afb8f68e3ba3e12dc> (quoting a California oil and gas regulator as denying fracking permits "[i]n the face of the effects of the climate emergency" and noting California's larger goal to phase out oil production by 2045); Press Release, Off. of Governor Gavin Newsom, Governor Newsom Announces California Will Phase Out Gasoline-Powered Cars & Drastically Reduce Demand for Fossil Fuel in California's Fight Against Climate Change (Sept. 23, 2020), <https://www.gov.ca.gov/2020/09/23/governor-newsom-announces-california-will-phase-out-gasoline-powered-cars-drastically-reduce-demand-for-fossil-fuel-in-californias-fight-against-climate-change/> (describing the California governor's executive order to require "sales of all new passenger vehicles to be zero-emission by 2035" as part of a larger climate policy). Several other states have also set deadlines for phasing out the sale of combustion cars. See Adam Willis, *Gov. Moore Supports California Deadline Phasing Out the Sale of New Gas-Powered Cars by 2035*, BALT. BANNER (Mar. 13, 2023, 11:21 PM), <https://www.thebaltimorebanner.com/politics-power/local-government/electric-car-requirement-WJQU5XEQCBGFBA5LVFQYRPTQ7I/> (Maryland); Alysha Palumbo, *Sales of New, Gas-Powered Cars Won't Be Allowed in Massachusetts by 2035*, NBC10 BOS. (Aug. 26, 2022, 11:47 PM), <https://www.nbcboston.com/news/local/sales-of-new-gas-powered-cars-wont-be-allowed-in-massachusetts-in-2035/2818583/> (Massachusetts); Steven Rodas, *N.J. Will Now Target 100% Clean Energy, Require All-Electric Cars by 2035, Murphy Says*, NJ.COM (Feb. 17, 2023, 7:48 AM), <https://www.nj.com/news/2023/02/nj-will-now-target-100-clean-energy-require-all-electric-cars-by-2035-murphy-says.html> (New Jersey); Brett Marsh, *New York Is the Latest State to Ban Sales of New*

international level and risk exacerbating inequality by, for example, focusing on absolute reductions rather than how and where phaseouts should occur.<sup>32</sup>

This Article directs attention to an alternative approach advanced by frontline communities. To the extent there has been any progress toward phasing out extraction, it has been led by low-income communities and communities of color living near oil and gas extraction. Opposition from these communities has emphasized the direct impacts of extraction on their lives and advocated for increased setbacks (a mandatory distance between oil and gas facilities and communities) and monitoring nearby. In many cases, communities link their local struggle with broader movements for climate justice, making explicit connections between the localized harm of extraction and harm to the climate.<sup>33</sup>

In this Article, I argue that this advocacy offers an important guide for how to phase out oil and gas extraction across the United States. Focusing on extraction's proximity to people tailors phaseout policies to where extraction's impacts are most clear and where legal authority is at its most defensible. Combining this advocacy with a parallel focus on directing investment to communities living closest to extraction provides an effective model for mitigating some of the potential impacts of phasing out extraction on low-income communities and communities of color while targeting the roots of political dependence on extraction. For these reasons, prioritizing proximity offers a strong pathway for leading the phaseout of oil and gas extraction in the United States.

The Article makes this argument in four parts. In Part I, I draw out why phasing out extraction is necessary and why policies focused only on reducing demand for oil and gas are insufficient. Part II provides a brief overview of ongoing grassroots advocacy in California and Colorado that serves as the guide for an approach to phaseouts that prioritize proximity. Part III articulates four ways to prioritize proximity when phasing out oil and gas extraction: stop new extraction closest to people, monitor existing extraction closest to people, plug and reclaim wells closest to people, and match phaseouts with targeted decarbonization programs. These priorities combine policies successfully advanced by frontline communities to stop extraction with policies focused on investing in these communities. This

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*Gas-Powered Vehicles by 2035*, GRIST (Oct. 7, 2022), <https://grist.org/transportation/new-york-state-bans-sales-new-gas-powered-cars-2035/> (New York); David Stevens, *Oregon, Washington Join California in Banning Gas-Powered New Vehicles Starting in 2035*, OPB (Dec. 20, 2022, 2:39 PM), <https://www.opb.org/article/2022/12/20/oregon-washington-ban-gas-powered-vehicles-2035-joining-california/> (Oregon and Washington). Federal standards are also expected to drive the transition to electric vehicles. Coral Davenport, *E.P.A. Is Said to Propose Rules Meant to Drive Up Electric Car Sales Tenfold*, N.Y. TIMES (Apr. 9, 2023), <https://www.nytimes.com/2023/04/08/climate/biden-electric-cars-epa.html>.

<sup>32</sup> As noted above, Paul & Moe's work is notable for highlighting issues of inequality and proximity in phaseout policies. See PAUL & MOE, *supra* note 24, at 26.

<sup>33</sup> See *infra* Part II (describing the success of California's frontline communities in linking harms from extraction in their communities with California's broader policy goals).



combination—“stopping the bad” and “building the new”—reflects principles of a just transition led by those frontline communities most affected by extraction.<sup>34</sup> Part IV argues that prioritizing proximity offers several benefits over other approaches. Specifically, I argue that prioritizing proximity when phasing out extraction puts policies on the strongest legal footing, undermines the roots of political support for continued extraction by targeting dependency on extraction within communities, and supports a just transition by focusing efforts to build sustainable communities in places most heavily affected by extraction.

### I. WHY PHASE OUT EXTRACTION?

One threshold response to policies targeting extraction is an argument that such policies are not necessary, or even effective, in lowering greenhouse emissions. Often critics present this argument as a contrast between “supply-side” and “demand-side” climate policies, where policies seeking to reduce the overall supply of fossil fuels (such as restrictions on extraction) are compared against policies aimed at reducing demand for fossil fuels (such as promoting electrification).<sup>35</sup> The United States has focused almost exclusively on demand-side approaches to climate policy, and demand-side approaches have historically dominated climate policy debates.<sup>36</sup> Why focus on phasing out extraction? This Part provides a brief explanation, focusing first on the climate impacts, then on more localized environmental and community impacts of extraction, and finally on extraction’s role in perpetuating inequality.

#### A. *Climate Harms*

As noted in the introduction, policy makers and advocates have increasingly focused on reducing the extraction of fossil fuels generally, and oil and gas specifically, to avoid catastrophic climate change. This increased focus on supply-side policies makes sense for at least two reasons.

First, this increased focus on supply-side policies has helped correct misperceptions about the relationship between supply-side and demand-side approaches. For example, one common criticism of supply-side policies is

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<sup>34</sup> See, e.g., CLIMATE JUST. ALL., JUST TRANSITION PRINCIPLES 3 (2018), [https://climatejusticealliance.org/wp-content/uploads/2018/06/CJA\\_JustTransition\\_Principles\\_final\\_hi-rez.pdf](https://climatejusticealliance.org/wp-content/uploads/2018/06/CJA_JustTransition_Principles_final_hi-rez.pdf) (“We must build [a] visionary economy that is very different than the one we now are in. This requires stopping the bad while at the same time as building the new.”).

<sup>35</sup> See BRIAN C. PREST, RES. FOR THE FUTURE, PARTNERS, NOT RIVALRY: THE POWER OF PARALLEL SUPPLY-SIDE AND DEMAND-SIDE CLIMATE POLICY 1 (2022), [https://media.rff.org/documents/Report\\_22-06.pdf](https://media.rff.org/documents/Report_22-06.pdf) (explaining supply-side and demand-side policies).

<sup>36</sup> See *id.* (“Historically, policymakers have overwhelmingly focused on demand-side measures. For example, in the United States, the Obama administration primarily pursued demand-side policies such as fuel economy standards and power plant regulations but did relatively little to directly reduce the production of fossil fuels.”).

that they will induce “leakage,” where reducing supply in a place like the United States will prompt higher prices and, in turn, increased production elsewhere.<sup>37</sup> But “leakage” like this is not limited to supply-side measures; fluctuations in pricing and demand can also prompt changes in emissions, such as when people consume more oil and gas as prices decrease in response to lower demand.<sup>38</sup> From this macroeconomic perspective, the problem is viewing a supply- or demand-side policy approach in isolation—as has been the experience in U.S. climate policy.<sup>39</sup> Instead, matching supply- and demand-side policies would likely result in the most effective emissions reductions with the least price volatility.<sup>40</sup> Other studies argue that matching supply- and demand-side policies also offers political benefits, including easier international coordination in managing the decline of fossil fuels.<sup>41</sup> In this sense, the recent increased focus on supply-side measures corrects a misguided imbalance in U.S. climate policy.

Second, relying solely on demand-side policies is not working fast enough. The international community and the United States specifically have relied almost exclusively on demand-side climate policies.<sup>42</sup> Yet demand for oil and gas is increasing in some circumstances, and in any event is not decreasing fast enough across the board to meet either global or national emissions targets.<sup>43</sup> This is not to say that demand-side policies are unimportant.<sup>44</sup> Rather, the point is that recent reliance on these policies to the exclusion of supply-side measures has not been effective. Given the urgency of the climate crisis, we should be leveraging all tools available to reduce emissions.

Three additional reasons emphasize why targeting extraction is important from a climate perspective.

First, the early stages of oil and gas production—namely, extraction and transportation—can cause huge emissions on their own, and the overall scope of emissions from these stages is largely unknown. For example, a

<sup>37</sup> See *id.*

<sup>38</sup> *Id.* at 7 (demonstrating how “under a demand-only approach, [leakage] occurs through increased foreign consumption”).

<sup>39</sup> See *id.* at 1.

<sup>40</sup> See *id.* at 2 (arguing that “when both types of policies are pursued in parallel, their individual weaknesses become synergies, mitigating leakage”).

<sup>41</sup> See Fergus Green & Richard Denniss, *Cutting with Both Arms of the Scissors: The Economic and Political Case for Restrictive Supply-Side Climate Policies*, 150 CLIMATIC CHANGE 73, 73, 79–81 (2018) (discussing the “political advantages” of supply-side policy, including “the superior potential to mobilise public support for supply-side policies, the conduciveness of supply-side policies to international policy cooperation, and the potential to bring different segments of the fossil fuel industry into a coalition supportive of such policies”).

<sup>42</sup> See PREST, *supra* note 35, at 1.

<sup>43</sup> See generally Welsby et al., *supra* note 9, at 230 (“After decades of growth [the] rate of production and use [of fossil fuels and specifically oil and gas] will need to reverse and decline rapidly to meet internationally agreed climate goals.”).

<sup>44</sup> See generally PREST, *supra* note 35 (arguing that demand- and supply-side policies should be used in parallel).

leak from one gas well in Pennsylvania was not caught for thirteen days and “effectively erased the emissions gains from about half the [electric vehicles] sold” in the United States in 2021.<sup>45</sup> To emphasize the scale of these leaks, one study suggests methane leaks from gas wells in the Permian Basin in Texas erased nearly all emissions benefits of transitioning from coal to gas for electricity generation.<sup>46</sup> While these kinds of emissions are the subject of new regulations in the United States,<sup>47</sup> the scope and scale of these leaks is still largely unknown because of the large geographic scope of oil and gas infrastructure. While it is technically possible to reduce emissions from the extraction and transport of oil and gas, substantial implementation problems make it unlikely that we will resolve those emissions in the timeline needed to avoid catastrophic climate change.

Second, it is not currently feasible to mitigate emissions from fossil fuel combustion. Carbon capture and storage technology remains prohibitively expensive and speculative. Despite extensive policy support for roughly a decade, every project has failed to achieve its goals and these projects often generate more emissions operating than they capture from fossil-fuel combustion.<sup>48</sup> Carbon storage also presents a variety of concerns, including risks to human and environmental health.<sup>49</sup> As with emissions from extraction and transport, there are no signs that technology can and will be effective on a timeline to avoid the worst impacts of climate change. From the ground to the smokestack, the difficult and speculative nature of mitigating greenhouse gas emissions from oil and gas, combined with the urgency of the climate crisis, undercuts the practical feasibility of mitigation.

Third, climate justice demands that the United States lead the world in phasing out oil and gas extraction.<sup>50</sup> At their most basic, principles of climate justice hold that those most responsible for climate change must take on most responsibility for mitigating emissions and supporting those adapting to a warmer and more dangerous world. The United States is responsible for the most greenhouse gas emissions of any country in modern human history

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<sup>45</sup> Aaron Clark, *Giant Methane Leak Tops List of Worst US Climate Disasters in 2022*, BLOOMBERG (Dec. 13, 2022, 6:00 AM), <https://www.bloomberg.com/news/articles/2022-12-13/us-gas-leak-at-equitrans-well-in-pennsylvania-adds-climate-pressure>.

<sup>46</sup> Benjamin Storrow, *Methane Leaks Erase Some of the Climate Benefits of Natural Gas*, E&E NEWS (May 5, 2020), <https://www.scientificamerican.com/article/methane-leaks-erase-some-of-the-climate-benefits-of-natural-gas/> (citing Yuzhong Zhang et al., *Quantifying Methane Emissions from the Largest Oil-Producing Basin in the United States from Space*, 6 SCI. ADVANCES, Apr. 24, 2020, at 4).

<sup>47</sup> See, e.g., Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review, 87 Fed. Reg. 74702, 74704 (Dec. 6, 2022) (to be codified at 40 C.F.R. pt. 60) (proposing to “strengthen, update, and expand” existing greenhouse gas and other emissions standards for oil and gas sources).

<sup>48</sup> Heather Payne, *Chasing Squirrels in the Energy Transition*, 52 ENV'T L. 237, 239 (2022).

<sup>49</sup> *Id.*

<sup>50</sup> See Greg Muttitt & Sivan Kartha, *Equity, Climate Justice and Fossil Fuel Extraction: Principles for a Managed Phase Out*, 20 CLIMATE POL'Y 1024, 1033 (2020).

and remains one of the highest per-capita emitters.<sup>51</sup> Moreover, the United States is not as reliant on oil and gas extraction for its social and economic welfare, particularly as it seeks to shift toward manufacturing renewable energy infrastructure and exporting oil and gas.<sup>52</sup> In addition to the practical necessity of reducing emissions, the United States also has a moral responsibility to lead the world in phasing out oil and gas extraction.

### B. *Environmental and Community Harms*

In addition to climate impacts, oil and gas extraction imposes a wide range of environmental and health impacts (among others) on nearby communities. Researchers have extensively documented these impacts since the rise of fracking and the movement of oil and gas extraction into communities across the country.<sup>53</sup>

For example, oil and gas extraction has been associated with a huge range of negative health impacts in nearby communities, including adverse birth outcomes, respiratory disease, cardiovascular disease, anxiety, depression, sleep disorders, cancer, and self-reported skin and breathing problems.<sup>54</sup> Most prominently, modern oil and gas extraction results in localized toxic air pollution that causes health impacts ranging from headaches and bloody noses to low birth weights and higher rates of cancer.<sup>55</sup>

Air pollution from oil and gas extraction also contributes to regional air pollution, such as ozone.<sup>56</sup> More generally, oil and gas extraction is an industrial activity that causes a broad range of localized pollution and disruption from, for example, heavy truck traffic and increased noise and

<sup>51</sup> See Simon Evans, *Analysis: Which Countries Are Historically Responsible for Climate Change?*, CARBON BRIEF (Oct. 5, 2021, 6:00 AM), <https://www.carbonbrief.org/analysis-which-countries-are-historically-responsible-for-climate-change/> (concluding that the United States “is responsible for the largest share of historical emissions” and is one of the top “cumulative per-capita” emitters).

<sup>52</sup> Cf. Muttitt & Kartha, *supra* note 50, at 1032 (“Our fourth principle then is that extraction be reduced fastest where the social costs of doing so are the least. . . . [T]his notion of lowest social cost of transition has two dimensions: firstly where dependence on extraction for providing employment or public revenues is lowest, and secondly where financial or institutional capacity to absorb and overcome transitional difficulties is the greatest.”).

<sup>53</sup> See, e.g., PHYSICIANS FOR SOC. RESP. & CONCERNED HEALTH PROS. OF N.Y., *COMPENDIUM OF SCIENTIFIC, MEDICAL, AND MEDIA FINDINGS DEMONSTRATING RISKS AND HARMS OF FRACKING AND ASSOCIATED GAS AND OIL INFRASTRUCTURE* 1–3, 5–7, 9–10 (8th ed. 2022), <https://psr.org/wp-content/uploads/2022/04/compendium-8.pdf>.

<sup>54</sup> Adam Mayer et al., *Understanding Self-Rated Health and Unconventional Oil and Gas Development in Three Colorado Communities*, 34 *SOC’Y & NAT. RES.* 60, 61–62 (2021) [hereinafter Mayer et al., *Understanding Self-Rated Health*] (collecting sources).

<sup>55</sup> See, e.g., David J.X. Gonzalez et al., *Upstream Oil and Gas Production and Ambient Air Pollution in California*, 806 *SCI. TOTAL ENV’T*, Feb. 1, 2022, at 1–2 (collecting studies detailing these effects and finding, based on thirteen years’ worth of air monitoring data, increased pollution near upstream oil and gas production); PHYSICIANS FOR SOC. RESP. & CONCERNED HEALTH PROS. OF N.Y., *supra* note 53, at 233.

<sup>56</sup> See Congmeng Lyu et al., *Evaluating Oil and Gas Contributions to Ambient Nonmethane Hydrocarbon Mixing Ratios and Ozone-Related Metrics in the Colorado Front Range*, 246 *ATMOSPHERIC ENV’T*, Feb. 1, 2021, at 2.

light levels.<sup>57</sup> In addition, modern drilling techniques associated with fracking have concentrated industry activity onto large-scale industrial sites that accommodate dozens of wells in a small space, amplifying these impacts on those who live and work nearby.<sup>58</sup>

Oil and gas extraction is also associated with a wide range of economic and political impacts on nearby communities. While increased extraction can provide some short-term benefits, including increased employment and tax revenue, these benefits are often not equally shared across communities.<sup>59</sup> The boom-bust cycles of oil and gas development also promote economic volatility in communities that see these benefits.<sup>60</sup> Oil and gas extraction can also displace other economic activities over time, leading to economic underdevelopment and overreliance on extraction.<sup>61</sup> Both real and perceived dependence tends to build political support for continued extraction within communities, creating cycles of dependence.<sup>62</sup> Legal structures around extraction also empower the extractive industry over communities, fragmenting social and political relationships within communities where extraction occurs.<sup>63</sup> In this sense, researchers have observed that oil and gas extraction near communities “can reduce the quality of life by causing unwanted changes in social and physical environments, as well as eroding sense of community and important social relationships.”<sup>64</sup>

### C. *Inequality*

Still another reason to phase out extraction is that the impacts of extraction disproportionately impact communities of color and low-income communities. Historically, oil and gas extraction near locations where people live and work has reinforced the legacy of redlining, concentrating

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<sup>57</sup> Mayer et al., *Understanding Self-Rated Health*, *supra* note 54, at 62.

<sup>58</sup> See Wyatt Sassman, *Communities of Extraction*, LAW & POL. ECON. PROJECT: LPE BLOG (Mar. 3, 2022), <https://lpeproject.org/blog/communities-of-extraction/> (describing this dynamic in Colorado); see also PHYSICIANS FOR SOC. RESP. & CONCERNED HEALTH PROS. OF N.Y., *supra* note 53, at 31, 44, 52, 74, 91, 93 (“[E]xtraction methods (collectively known as ‘fracking’) take place on clustered multi-well pads where individual wellbores extend vertically down into the shale formation and then turn horizontally, tunneling through the shale in various directions . . . as far as two miles underground.”).

<sup>59</sup> See Mayer et al., *Understanding Self-Rated Health*, *supra* note 54, at 61.

<sup>60</sup> *Id.* at 62; Adam Mayer et al., *Reaping Rewards, or Missing Out? How Neoliberal Governance and State Growth Machines Condition the Impacts of Oil and Gas Development on Local Well-Being*, 92 SOCIO. INQUIRY 733, 734 (2022) [hereinafter Mayer et al., *Reaping Rewards*] (noting that the costs and benefits of oil and gas extraction are not uniformly distributed).

<sup>61</sup> Adam Mayer & Stephanie Malin, *How Should Unconventional Oil and Gas Be Regulated? The Role of Natural Resource Dependence and Economic Insecurity*, 65 J. RURAL STUD. 79, 80, 83 (2019).

<sup>62</sup> *Id.* at 80–81.

<sup>63</sup> See Mayer et al., *Understanding Self-Rated Health*, *supra* note 54, at 62; see also Mayer et al., *Reaping Rewards*, *supra* note 60, at 734–35.

<sup>64</sup> Mayer et al., *Understanding Self-Rated Health*, *supra* note 54, at 62.

extraction's impacts on communities of color.<sup>65</sup> For example, federal authorities redlined regions around Los Angeles where oil and gas extraction occurred, concentrating the impacts of oil and gas extraction on the city's communities of color for generations.<sup>66</sup> The legacy of these actions remains visible, with one recent study showing oil and gas pollution from 2005 to 2019 disproportionately impacted racially and socioeconomically marginalized Californians.<sup>67</sup> Notably, the areas of the highest oil and gas production in Los Angeles County had over 2.4 times as many Black residents compared to the statewide population during this time period.<sup>68</sup>

There is evidence that similar dynamics are developing elsewhere after the rise of fracking.<sup>69</sup> Fracking gave drillers substantially more discretion in where to locate their well pads, and both early studies and prominent examples show drillers shifting operations and infrastructure into communities of color and low-income communities.<sup>70</sup> Industry also wields asymmetric power over communities when negotiating rights to use their land or to access oil and gas, and studies from the fracking boom show how these dynamics resulted in drilling shifting to poor people who, for example, needed income or could not afford legal support to push back on the industry in negotiations.<sup>71</sup> These features push the localized environmental and social impacts into vulnerable communities of color and low-income communities, further exacerbating legacies of inequality and environmental injustice. These trends support broader findings that, similar to other industrial activities, oil and gas production from extraction to combustion disproportionately impacts communities of color and low-income communities.<sup>72</sup>

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<sup>65</sup> See Daniel G. Cumming, *Black Gold, White Power: Mapping Oil, Real Estate, and Racial Segregation in the Los Angeles Basin, 1900–1939*, 4 ENGAGING SCI. TECH. & SOC'Y 85, 86, 97–98 (2018).

<sup>66</sup> See *id.* at 97–98.

<sup>67</sup> David J.X. González et al., *Temporal Trends of Racial and Socioeconomic Disparities in Population Exposures to Upstream Oil and Gas Development in California*, GEOHEALTH, Mar. 2023, at 1, 12 (“In this longitudinal study, we found that racially and socioeconomically marginalized people had disproportionately high exposure to oil and gas development activities across California between 2005 and 2019.”).

<sup>68</sup> *Id.*

<sup>69</sup> See Adrienne C. Kroepsch et al., *Environmental Justice in Unconventional Oil and Natural Gas Drilling and Production: A Critical Review and Research Agenda*, 53 ENV'T SCI. & TECH. 6601, 6604 (2019).

<sup>70</sup> See generally *id.* One prominent example of this effect in Colorado was a driller's decision to move a controversial project from its initial location next to a school serving a primarily white community to a second location next to a school serving a low-income community of color. See Megan Jula, *Parents Didn't Want Fracking Near Their School. So the Oil Company Chose a Poorer School, Instead.*, MOTHER JONES (Apr. 17, 2018), <https://www.motherjones.com/environment/2018/04/an-oil-company-faced-pushback-about-fracking-near-a-charter-so-it-moved-next-to-a-low-income-public-school/>.

<sup>71</sup> Stephanie A. Malin et al., *The Right to Resist or a Case of Injustice? Meta-Power in the Oil and Gas Fields*, 97 SOC. FORCES 1811, 1813–14 (2019).

<sup>72</sup> See Donaghy & Jiang, *supra* note 20, at 7, 18, 23.

Yet communities of color and low-income communities are also vulnerable to potential negative impacts from the transition away from fossil fuels. For example, low-income communities and communities of color tend to spend a larger portion of their household income on energy costs.<sup>73</sup> Rising energy costs associated with the transition away from fossil fuels can therefore disproportionately impact low-income communities and communities of color. Similarly, low-income communities tend to be more vulnerable to increases in gasoline prices because they spend a larger portion of their income on transportation costs.<sup>74</sup> For these reasons, volatility in energy prices also presents a greater risk to these communities.

These vulnerabilities emphasize the importance of designing policy interventions to account for disparate forms and avenues of inequality implicated by the energy transition. Because communities of color and low-income communities bear the heaviest burdens of extraction, these communities would benefit the most from phasing out extraction. It is important, however, to match phaseout policies with other policies intended to mitigate potential negative impacts on communities stemming from the transition.

## II. GRASSROOTS ADVOCACY AND SETBACKS

Most of the progress on regulating extraction has its roots in grassroots and community-based organizing. The familiar but complex power dynamics around oil and gas extraction, from national geopolitical ambitions to state and local dependency, make coordinated or top-down policy movement on oil and gas extraction rare. Rather, policy change has been the result of grassroots leadership breaking through at the state and local level, often in the context of broader statewide climate goals.

California's recent legislation imposing setbacks on oil and gas wells is a prominent example. In September 2022, California adopted Senate Bill 1137.<sup>75</sup> The legislation prohibits California's oil and gas regulatory agency

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<sup>73</sup> See *Energy Burden: What Is It and How Renewables Can Help*, CLIMATE REALITY PROJECT (Mar. 10, 2020), <https://www.climatealityproject.org/blog/energy-burden-what-it-and-how-renewables-can-help> (noting that the percentage of household income that goes toward energy costs is “three times higher” among low-income communities, 64% higher in African American households than white households, and 24% higher in Latino households than white households).

<sup>74</sup> See, e.g., Adam Gabbatt, “I Can’t Move My Car”: Americans Struggle as Vehicle Expenses Rise, *GUARDIAN* (Mar. 13, 2022, 1:00 PM) <https://www.theguardian.com/us-news/2022/mar/13/us-car-vehicle-expenses-rise> (noting that “the current increase in gas prices will disproportionately affect those already struggling” because “[l]ower-income households are forced to devote a larger share of their budget to transportation than wealthier households”); Yonah Freemark, *What Rising Gas and Rent Prices Mean for Families with Low Incomes*, *URB. INST.: URB. WIRE* (Mar. 17, 2022), <https://www.urban.org/urban-wire/what-rising-gas-and-rent-prices-mean-families-low-incomes>.

<sup>75</sup> S.B. 1137, 2022 Leg., 2021–22 Sess. (Cal. 2022) (codified at CAL. PUB. RES. CODE §§ 3280–3291) (enacted Sept. 16, 2022, suspended 2023); see Amy Moas, *California Declares an End*

from approving new oil and gas operations within 3,200 feet of a “sensitive receptor,” which is defined to include homes, schools, businesses, community centers, and healthcare facilities.<sup>76</sup> The legislation also imposes monitoring, testing, and notice requirements on oil and gas operations already within 3,200 feet of sensitive receptors, providing important information to communities and regulators.<sup>77</sup>

Although S.B. 1137 remains on hold pending a referendum backed by the oil industry,<sup>78</sup> its initial passage represents a breakthrough of longstanding grassroots advocacy as part of a broader climate package endorsed by the governor. California is a prominent oil- and gas-producing state, and over two million Californians live within a mile of an operating oil and gas well—mostly people of color.<sup>79</sup> Advocates have worked for years to bring attention to the health impacts of extraction in these communities, and in particular to highlight that California imposed no setback on oil and gas operations while other oil- and gas-producing states did.<sup>80</sup> Many communities pursued setbacks at the local level, laying the groundwork for pushes in the state legislature.<sup>81</sup> Setback bills raised in the legislature often

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to *Toxic Neighborhood Drilling*, GREENPEACE (Sept. 16, 2022), <https://www.greenpeace.org/usa/victories/california-declares-an-end-to-toxic-neighborhood-drilling/> (characterizing the bill as “a decade in the making,” and summarizing the lead-up to its passage). On February 3, 2023, the California Secretary of State certified that S.B. 1137’s opponents submitted enough signatures to delay the law from going into effect and to put a referendum on the ballot in November 2024. *Referendum Challenging Setbacks for New Oil Wells in California Qualifies for 2024 Ballot*, KCET (Feb. 7, 2023) [hereinafter KCET], <https://www.kcet.org/news-community/referendum-challenging-setbacks-for-new-oil-wells-in-california-qualifies-for-2024-ballot>. The referendum process “has been tainted amid reports of petition circulators telling ‘blatant lies’ to secure signatures.” Gabriel Grief, *A New Battleground in Big Oil’s War on Drilling Setbacks*, LEGAL PLANET (Mar. 23, 2023), <https://legal-planet.org/2023/03/23/a-new-battleground-in-big-oils-war-on-drilling-setbacks/>. See also Hollin Kretzman, Commentary, *Newsom Could Stop Unsafe Oil Drilling Before the 2024 Referendum. Here’s How*, CAL MATTERS (Mar. 3, 2023), <https://calmatters.org/commentary/2023/03/newsom-oil-drilling-law-referendum/> (noting “deceptive signature gathering behind the referendum” and offering alternatives for implementing S.B. 1137’s goals).

<sup>76</sup> CAL. PUB. RES. CODE § 3280 (West 2022). There are exceptions for health and safety emergencies, actions required by a court order, and for plugging wells. *Id.* §§ 3281(a), 3281.5.

<sup>77</sup> See *id.* §§ 3283, 3286.

<sup>78</sup> KCET, *supra* note 75; Grief, *supra* note 75.

<sup>79</sup> Eliza D. Czołowski et al., *Toward Consistent Methodology to Quantify Populations in Proximity to Oil and Gas Development: A National Spatial Analysis and Review*, 125 ENV’T HEALTH PERSPS., Aug. 2017, at 086004-1, 086004-3 to -6.

<sup>80</sup> See Liza Gross, *Oil Industry Moves to Overturn Historic California Drilling Protection Law*, INSIDE CLIMATE NEWS (Oct. 10, 2022), <https://insideclimatenews.org/news/10102022/oil-industry-california-drilling-protection-law> (“The newly enacted law represents a hard-won victory for groups that have worked for years to protect communities from the growing list of health problems linked to living near oil and gas drilling . . . .”); Emma Newburger, *California Lawmakers Move to Ban New Oil Wells Within 3,200 Feet of Homes and Schools*, CNBC (Sept. 1, 2022, 11:49 AM), <https://www.cnn.com/2022/09/01/california-moves-to-ban-new-oil-wells-within-3200-feet-of-homes.html> (quoting a climate law attorney’s statement: “[p]assage of this monumental bill is a tribute to the tireless frontline communities who have fought for their lives against fossil fuel polluters for years”).

<sup>81</sup> See Jade Wolansky, Legislative Review, *Quiet Suffocation: California Oil and Gas Production Near Communities of Color Is a Public Health Crisis*, 52 U. PAC. L. REV. 387, 392–93 (2021) (collecting local setbacks in California).



stalled because they lacked support of moderate Democrats.<sup>82</sup> S.B. 1137 was included in a larger package of bills intended to advance California's role as a leader on climate because of "a 'monumental effort'" by grassroots communities to elevate the issue.<sup>83</sup> Notably, S.B. 1137 is one aspect of California's larger approach to climate policy, which includes other tools raised in the literature such as denying permits and phasing out gasoline-powered cars.<sup>84</sup>

Grassroots communities have fueled similar advocacy in Colorado. The explosive growth of drilling throughout residential areas in Colorado prompted communities to go to the ballot box to regulate the industry.<sup>85</sup> Longmont, Colorado, for example, passed a moratorium on oil and gas drilling in its community by ballot measure. Communities also advanced a statewide 2,500-foot setback by ballot measure in 2016, supported by then-U.S. Representative Jared Polis.<sup>86</sup> Despite the community's support of the ballot measure, Polis unilaterally withdrew it as part of a political compromise with then-Governor John Hickenlooper.<sup>87</sup> In 2018 communities again placed a setback measure on the ballot, but this failed in the face of opposition from Polis, who was then running for governor, and the industry.<sup>88</sup> Grassroots organizing persisted against continued opposition, including the Colorado Supreme Court declaring Longmont's and other municipalities' drilling moratoria unconstitutional.<sup>89</sup> Political pressure

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<sup>82</sup> See, e.g., Press Release, CEJA Action, Coalition Supporting SB 467 Vows to Continue Fight for Setbacks (Apr. 14, 2021), <https://ceja-action.org/2021/04/14/coalition-supporting-sb-467-vows-to-continue-fight-for-setbacks/>.

<sup>83</sup> Gross, *supra* note 80 (quoting a community advocate).

<sup>84</sup> See *supra* note 31; see also Press Release, Off. of Governor Gavin Newsom, Governor Newsom Signs Sweeping Climate Measures, Ushering in New Era of World-Leading Climate Action (Sept. 16, 2022), <https://www.gov.ca.gov/2022/09/16/governor-newsom-signs-sweeping-climate-measures-ushering-in-new-era-of-world-leading-climate-action>.

<sup>85</sup> See Ryan Maye Handy, *Ballot Initiative Would Give Colorado Cities More Oil and Gas Control*, COLORADOAN (Feb. 24, 2014, 5:56 PM) <https://www.coloradoan.com/story/news/local/2014/02/24/ballot-initiative-would-give-colo-cities-more-oil-and-gas-control/5792569> (describing 2014 ballot measure).

<sup>86</sup> Jennifer Yachnin, *Congressman Pulls Back from Direct Role in Anti-Fracking Fight*, E&E NEWS (Apr. 17, 2015, 7:05 AM), <https://www.eenews.net/articles/colo-congressman-pulls-back-from-direct-role-in-anti-fracking-fight/> ("During the last election cycle, Polis generated controversy in the Centennial State by publicly supporting and helping fund a pair of ballot initiatives that would have amended the state's constitution to restrict—though not outright ban—fracking at new oil and gas wells in the state.").

<sup>87</sup> See *id.*; see also Hickenlooper, *Polis Announced Fracking Compromise*, COLO. PUB. RADIO (Aug. 4, 2014, 6:01 PM), <https://www.cpr.org/2014/08/04/hickenlooper-polis-announce-fracking-compromise>.

<sup>88</sup> See Umair Irfan, *A Major Anti-Fracking Ballot Measure in Colorado Has Failed*, VOX (Nov. 7, 2018, 9:10 AM), <https://www.vox.com/2018/11/5/18064604/colorado-election-results-fracking-proposition-112> (discussing Proposition 112 and noting that "Democratic candidate for Colorado governor, Jared Polis, opposes the measure").

<sup>89</sup> *City of Longmont v. Colo. Oil & Gas Ass'n*, 369 P.3d 573, 577 (Colo. 2016); *City of Fort Collins v. Colo. Oil & Gas Ass'n*, 369 P.3d 586, 594 (Colo. 2016); see also Michael Wines, *Colorado Court Strikes Down Local Bans on Fracking*, N.Y. TIMES (May 2, 2016), <https://www.nytimes.com/2016/05/03/us/colorado-court-strikes-down-local-bans-on-fracking.html>.

ultimately resulted in legislation called Senate Bill 19-181.<sup>90</sup> While S.B. 19-181 compromised on many community demands, it nevertheless paved the way for Colorado's regulatory agency to impose a 2,000-foot setback on oil and gas activity in the state.<sup>91</sup>

Colorado communities have continued to lead the way on monitoring extraction as well. One central conflict in Colorado involved the state's approval of the industry's decision to move a fracking project from next to a school serving primarily white children to a school serving primarily low-income Latino children.<sup>92</sup> In response to community opposition, the state agreed to place an air monitor next to the school.<sup>93</sup> The air monitor picked up elevated levels of toxic air pollutants associated with oil and gas extraction, but the state then moved the air monitor to another location without notifying the community.<sup>94</sup> With academic partners, the community has continued to press for air monitoring at the school despite the state's continued inaction.<sup>95</sup>

### III. PRIORITIZING PROXIMITY

Grassroots advocacy that prioritizes extraction's proximity to communities provides a model for phasing out extraction in a way that cuts through idiosyncratic obstacles in the United States. Drawing on those successes, this Part highlights central priorities of phaseout policies that prioritize proximity.

#### A. *Stop New Extraction Closest to People*

An initial priority should be imposing a setback that prohibits new oil and gas activities within a certain distance of where people live and work. For purposes of phasing out oil and gas extraction, setbacks can create a baseline by limiting new extraction and prohibiting the expansion of existing oil and gas activity near communities. While fundamentally an incremental

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<sup>90</sup> S.B. 19-181, 2019 Leg., Reg. Sess. (Colo. 2019) (enacted Apr. 16, 2019).

<sup>91</sup> See Mark Jaffe, *Colorado Draws 2,000-Foot Statewide Oil and Gas Drilling Setback. But It Comes With a Big "However,"* COLO. SUN (Sept. 24, 2020, 8:14 PM), <https://coloradosun.com/2020/09/24/2000-foot-oil-and-gas-setback-colorado> (describing the Colorado state regulator's decision to impose a 2,000-foot setback).

<sup>92</sup> See Jula, *supra* note 70 (describing the decision to approve this project); Julie Turkewitz, *In Colorado, a Fracking Boom and a Population Explosion Collide*, N.Y. TIMES (May 31, 2018), <https://www.nytimes.com/2018/05/31/us/colorado-fracking-debates.html>.

<sup>93</sup> See Michael Elizabeth Sakas, *Safety Fears Hang in the Air After a Benzene Spike at a Greeley School with a Neighboring Oil and Gas Well*, COLO. PUB. RADIO (July 30, 2020, 7:48 AM), <https://www.cpr.org/2020/07/30/safety-fears-hang-in-the-air-after-a-benzene-spike-at-a-greeley-school-with-a-neighboring-oil-and-gas-well/>.

<sup>94</sup> *See id.*

<sup>95</sup> Michael Elizabeth Sakas, *Greeley District Officials Reject an Offer to Continue Air Monitoring at a School Where a Spike in Toxic Chemicals Was Detected*, COLO. PUB. RADIO (Feb. 24, 2022, 2:07 PM), <https://www.cpr.org/2022/02/24/greeley-bella-romero-academy-rejects-air-monitoring/> (describing the school district rejecting a plan for air monitoring partnership with Colorado State University).

step, an effective setback can be a keystone around which a larger phaseout policy can be built.

### 1. *Protective Setbacks*

An effective setback should be sufficiently protective in three ways.

First, the setback should impose a distance that reflects research on the health and environmental impacts of oil and gas extraction. Setbacks have been an increasingly important focus as fracking pushes extraction closer to where people live and work.<sup>96</sup> One persistent criticism across contexts is that drilling and other setbacks did not reflect then-growing research on the health and environmental effects of extraction on nearby communities. For example, public health researchers have long emphasized that there is insufficient scientific support to show that Colorado's setbacks are protective of nearby communities.<sup>97</sup> In 2019, a study commissioned by the Colorado public health agency found that existing setbacks (then 500 feet) were not protective.<sup>98</sup> Since then, a growing consensus of health studies shows adverse health effects as far as 1.24 miles (6,561 feet) from an oil or gas well—in particular, increased risks of cancer and neurological underdevelopment in children.<sup>99</sup> States have increasingly adopted larger setback requirements, with Colorado imposing a 2,000-foot setback in 2020 and California a 3,200-foot setback in 2022.<sup>100</sup> A setback should adequately protect communities consistent with the best available information on health impacts. And, as discussed in more detail below, aligning policies with the science makes the phaseout more legally defensible.<sup>101</sup>

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<sup>96</sup> See Irfan, *supra* note 88 (characterizing a ballot measure imposing a larger setback in Colorado as a “hugely divisive issue”); see also Alexandra Tempus, *Moving Away from Fossil Fuel: The Escalating Push for Setbacks from Drilling Sites*, SALON (July 26, 2020, 12:20 PM), [https://www.salon.com/2020/07/26/moving-away-from-fossil-fuel-the-escalating-push-for-setbacks-from-drilling-sites\\_partner](https://www.salon.com/2020/07/26/moving-away-from-fossil-fuel-the-escalating-push-for-setbacks-from-drilling-sites_partner).

<sup>97</sup> See Roxana Z. Witter et al., *The Use of Health Impact Assessment for a Community Undergoing Natural Gas Development*, 103 AM. J. PUB. HEALTH 1002, 1004–05 (2013) (“There are no published peer-reviewed studies documenting that these current regulatory set-back distances from wells to residences,” which was 350 feet for high density areas, “are sufficient to protect the public from chemical exposures.”).

<sup>98</sup> ED CARR ET AL., ICF, FINAL REPORT: HUMAN HEALTH RISK ASSESSMENT FOR OIL & GAS OPERATIONS IN COLORADO, at xx–xxi (2019), <https://www.fcgov.com/oilandgas/files/20191017-cdphe-healthimpactsstudy.pdf>; John Frank, *Potential for Short-Term Health Impacts from Colorado Oil and Gas Drilling Leads to Calls for Temporary Halt in Permits*, COLO. SUN (Oct. 17, 2019, 1:19 PM), <https://coloradosun.com/2019/10/17/oil-and-gas-drilling-health-impacts-colorado> (“The new findings . . . raise questions about whether the state’s current 500-foot buffer between homes and drilling operations is large enough to protect public health . . .”).

<sup>99</sup> E.g., Cassandra J. Clark et al., *Unconventional Oil and Gas Development Exposure and Risk of Childhood Acute Lymphoblastic Leukemia: A Case-Control Study in Pennsylvania, 2009–2017*, 130 ENV'T HEALTH PERSPS., Aug. 2022, at 087001-1.

<sup>100</sup> See Moas, *supra* note 75 (noting California’s setback); Jaffe, *supra* note 91 (noting Colorado’s setback).

<sup>101</sup> See *infra* Section IV.A.

Second, any setback should be broad enough to cover most, if not all, places where people live and work. California, for example, imposed a setback from all “sensitive receptor[s]”: a broad term defined to include homes, schools, businesses, community centers, and healthcare facilities.<sup>102</sup> Colorado, by contrast, initially imposed different setbacks for homes (500 feet), multifamily dwellings, and other “high-occupancy” buildings such as healthcare facilities and schools (1,000 feet), before extending the setback to 2,000 feet for each category.<sup>103</sup> The Colorado setback does not generally cover where people work, whereas California’s includes businesses.<sup>104</sup> An effective setback should cover all places where people could be exposed to demonstrated harm from oil and gas extraction.

Protective setbacks could cover substantial areas of oil and gas activity but would not necessarily foreclose oil and gas production in a state.<sup>105</sup> For example, California’s 3,200-foot setback—the largest in the country—covers roughly twenty-seven percent of wells in the state, with roughly a third of these being older, idle wells that are no longer producing oil and gas.<sup>106</sup> From 2020 to 2021, just over ten percent of new wells were approved in what would be that setback distance.<sup>107</sup> Notably, over two million Californians live within 3,200 feet of a well, and over seventy percent of that number are non-white Californians.<sup>108</sup> In this way, protective setbacks can have potentially huge health and equity benefits with relatively narrow and targeted impacts on overall oil and gas extraction.

Third, setbacks should only include exceptions that are more protective for nearby communities. Existing setbacks have been undermined by

<sup>102</sup> CAL. PUB. RES. CODE § 3280(b)–(c) (West 2022).

<sup>103</sup> Compare COLO. CODE REGS. § 404-1:604(a)(1), (3), (6) (2019) (amended 2021) (covering initial setbacks), with COLO. CODE REGS. § 404-1:604(b) (2023) (covering modern setbacks).

<sup>104</sup> Compare COLO. CODE REGS. §§ 404-1:100, 404-1:604(b) (2023) (covering residences and “high occupancy” buildings but not businesses), with CAL. PUB. RES. CODE § 3280(b)–(c)(6) (West 2022) (covering businesses).

<sup>105</sup> For example, the Colorado Oil & Gas Conservation Commission issued a report concluding that the 2016 ballot measure that would have imposed 2,500-foot setbacks from buildings could have impacted roughly 20% of land in oil- and gas-producing parts of the state. COLO. OIL & GAS CONSERVATION COMM’N, 2500’ MANDATORY SETBACK FROM OIL AND GAS DEVELOPMENT 10 (2016), [https://cogcc.state.co.us/documents/library/Technical/Miscellaneous/Init\\_78\\_Proposed\\_2500ft\\_Setback\\_Assessment\\_Report\\_20160527.pdf](https://cogcc.state.co.us/documents/library/Technical/Miscellaneous/Init_78_Proposed_2500ft_Setback_Assessment_Report_20160527.pdf). The ballot measure included setbacks from a wide range of water resources in addition to setbacks from where people live and work, substantially expanding the measure’s impact (from roughly 20% to 90% of lands statewide, according to the agency report) and leading to misleading claims about the effect of setbacks from homes specifically. See, e.g., John Aguilar, *Colorado Oil and Gas Ballot Initiative Would Bar Extraction on More Than 80 Percent of Non-Federal Land, State Regulators Say*, DENVER POST (July 10, 2018, 6:00 AM), <https://www.denverpost.com/2018/07/10/colorado-oil-gas-ballot-initiative/> (“Initiative 97 would establish the minimum setback of oil and gas wells to 2,500 feet—from the current 500 feet for homes and 1,000 feet for schools. Industry advocates warn that would decimate the state’s oil and gas sector . . .”).

<sup>106</sup> Kyle Ferrar, *Implications of a 3,200-foot Setback in California*, FRACTRACKER ALL. (Apr. 6, 2022), <https://www.fractracker.org/2022/04/implications-of-a-3200-foot-setback-in-california>.

<sup>107</sup> *Id.*

<sup>108</sup> *Id.*

extensive exceptions that make them little more than administrative hurdles for drillers.<sup>109</sup> One particularly pernicious exception allows oil and gas extraction to occur within the setback zone with the nearby property owner's consent. For example, one study concluded that Pennsylvania's decision in 2012 to increase its setback from 200 feet to 500 feet "did not significantly alter how wells were sited in relation to nearby buildings" because of the setback's exceptions, including where operators got the consent of landowners.<sup>110</sup> Securing this consent can implicate asymmetrical power dynamics between industry and community members.<sup>111</sup> Likewise, exceptions that rely primarily on the consent of the property owner sidestep renters, who would face the primary impacts of the activity. Colorado's setbacks require "informed consent" and includes some protections for renters, but they do not create any structural protections for landowners against industry wealth and power.<sup>112</sup> California, by contrast, only authorizes activity within the setback zone where necessary to respond to a health, safety, or environmental threat, comply with a court order, or plug and abandon a well.<sup>113</sup> This alternative approach more closely aligns with public health protections and aligns the setback with broader goals of phasing out extraction rather than, for example, imposing more procedure on continued extraction.

## 2. *Prioritizing Setbacks*

Imposing setbacks on oil and gas operations is an effective first priority in phasing out oil and gas extraction for at least two reasons.

First, setbacks can be imposed through either local or state authority, aligning them with grassroots power.<sup>114</sup> While local government bans or moratoria can run into conflicts with state authority over oil and gas extraction, setbacks can fit more naturally within local governments' zoning and land use powers.<sup>115</sup> Likewise, local governments can be more responsive

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<sup>109</sup> See Drew R. Michanowicz et al., *The Effect of Pennsylvania's 500 ft Surface Setback Regulation on Siting Unconventional Natural Gas Wells near Buildings: An Interrupted Time-Series Analysis*, 154 ENERGY POL'Y, July 2021, at 1–2, 6 (discussing numerous exceptions to setbacks that various states have allowed).

<sup>110</sup> *Id.* at 1.

<sup>111</sup> See Malin et al., *supra* note 71, at 1813 (describing some of the power asymmetries in negotiations between community members and oil and gas developers in the context of leasing).

<sup>112</sup> COLO. CODE REGS. § 404-1:604(a)(4) (2023) (requiring "informed consent from all Building Unit owner(s) and tenant(s)").

<sup>113</sup> CAL. PUB. RES. CODE § 3281 (West 2023).

<sup>114</sup> Bruce M. Kramer, *The State of State and Local Governmental Relations as It Impacts the Regulation of Oil and Gas Operations: Has the Shale Revolution Really Changed the Rules of the Game?*, 29 J. LAND USE & ENV'T L. 69, 71 (2013) (noting that "sub-state unit regulation of oil and gas operations are neither new nor revolutionary" and citing examples "over eighty-five years old").

<sup>115</sup> See ETHAN N. ELKIND & TED LAMM, BERKELEY CTR. FOR L., ENERGY & THE ENV'T, LEGAL GROUNDS: LAW AND POLICY OPTIONS TO FACILITATE A PHASE-OUT OF FOSSIL FUEL PRODUCTION IN

to grassroots organizing around the impacts of extraction, although dependency on resource extraction can complicate this picture. Where local governments have imposed setbacks, these successes can both motivate continued grassroots organizing and support statewide policies. Statewide setbacks, in turn, can help overcome the effects of localized dependency on extraction and provide a level of certainty and management to the overall phaseout of extraction.

Second, setbacks are an incremental step. They allow for continued extraction from existing facilities, and how strong setbacks support a phaseout depends on other structural features, such as their exceptions. As noted above, uncoordinated bans on extraction could have disproportionate impacts on communities of color and low-income communities.<sup>116</sup> Imposing setbacks can set expectations on continued extraction around where people live and work, and when designed effectively, can create a baseline from which regulators and communities can manage the decline of oil and gas extraction.

#### B. Monitor Continued Extraction Closest to People

The next priority should be monitoring extraction closest to where people are. Despite the growing consensus on health impacts of living near oil and gas facilities, the scale and nature of leaks from facilities near communities are understudied. This is in part because of a general lack of publicly accessible, continuous monitoring of oil and gas activity. In some circumstances, operators may install leak-detection or other monitoring technology, but there is often no requirement to make that information public or that this technology include continuous monitoring for health and environmental impacts.<sup>117</sup>

The problem is worse among older, “idle” wells that are no longer producing oil and gas but have not been fully plugged. These undetected leaks can cause serious health harm. For example, in May 2022 a researcher discovered wells leaking about 400 feet from homes in Bakersfield, California, when he heard an “audible hiss” coming from underneath a barrel

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CALIFORNIA 31 (2020), <https://www.law.berkeley.edu/wp-content/uploads/2020/04/Legal-Grounds.pdf> (noting that “policymakers would ground any setback rule or other measure to limit oil and gas operations in public health and environmental imperatives” that sit at the “core of the government’s police power authority”); *see also, e.g.*, *City of Longmont v. Colo. Oil & Gas Ass’n*, 369 P.3d 573, 577 (Colo. 2016) (declaring local government’s moratoria on drilling unconstitutional).

<sup>116</sup> *See supra* Section I.C.

<sup>117</sup> *See, e.g.*, John Herrick, *Benzene Spike Detected Near Greeley Elementary School*, COLO. INDEP. (Nov. 25, 2019), <https://www.coloradoindependent.com/2019/11/25/benzene-bella-romero-oil-gas> (noting that the state “review[ed] additional air monitoring data collected by Extraction,” the well operator, that was never made public).

that covered an idled well.<sup>118</sup> Subsequent monitoring showed extremely high levels of methane in the air—levels high “enough to trigger an explosion” if someone had lit a match.<sup>119</sup> Residents from the nearby homes had been suffering from fatigue, headaches, and nausea, likely caused by the leaks, that their doctors could not explain.<sup>120</sup> And, as noted above, these undetected leaks also have devastating impacts on the climate.<sup>121</sup> Incidents like these highlight the general lack of monitoring and enforcement around leaks and other emissions from oil and gas facilities.

As such, policies should prioritize monitoring oil and gas infrastructure within any setback, including wells, pipelines, and other infrastructure. Monitoring requirements should be designed to protect the nearby communities in at least three ways.

First, policies should require continuous monitoring of air pollutants that impact nearby communities’ health, such as toxic air pollutants, volatile organic compounds, and ozone precursors. This kind of monitoring technology is readily available and already imposed under some oil and gas regulations.<sup>122</sup> Such requirements should be uniform for any existing infrastructure near communities.

Second, policies should ensure that monitoring data is available to the public. Even when continuous monitoring is required at oil and gas facilities, operators may not be required to share data with the public.<sup>123</sup> A central benefit of monitoring extraction within the setback is to bring to light possible risks to nearby community members, and publicizing monitoring information would provide important support for that goal.

Finally, monitoring should be matched with leak detection and remote shut-off systems. As in the Bakersfield example, leaks from old wells

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<sup>118</sup> Nathan Solis, *California Oil Regulator Confirms Methane Leak at Idle Oil Wells in Bakersfield*, L.A. TIMES (May 22, 2022, 10:46 AM), <https://www.latimes.com/california/story/2022-05-22/california-oil-regulator-reports-methane-leak-at-idle-oil-well-in-bakersfield>.

<sup>119</sup> Cresencio Rodriguez-Delgado, *Discovery of Methane Leaks in California Community Is Just “the Tip of the Iceberg,” Advocates Worry*, PBS (July 8, 2022, 3:47 PM), <https://www.pbs.org/newshour/nation/officials-discovered-methane-leaks-near-homes-in-california-some-fear-it-could-be-widespread>.

<sup>120</sup> *Id.*

<sup>121</sup> *See supra* Section I.A.

<sup>122</sup> *See, e.g.*, CAL. PUB. RES. CODE § 3283(a)(2)(A) (West 2023) (“The leak detection and response plan shall include a continuously operating emissions detection system designed to provide for rapid detection of target chemical constituents to identify leaks before emissions impact the surrounding communities.”); *see also* U.S. GOV’T ACCOUNTABILITY OFF., GAO-21-189SP, SCI. & TECH. SPOTLIGHT: AIR QUALITY SENSORS (2020).

<sup>123</sup> *See* Herrick, *supra* note 117 (noting the operator’s monitoring data that was only reviewed by the state); Jennifer Hijazi, *Community Air Monitoring Is an “Inevitable” Issue for Industry*, BLOOMBERG L. (Dec. 8, 2021, 6:00 AM), <https://news.bloomberglaw.com/environment-and-energy/community-air-monitoring-is-an-inevitable-issue-for-industry> (“Advocates are pushing for better air monitoring around facility ‘fencelines’ and in pollution-burdened neighborhoods to fill gaps they say are left by environmental agencies’ lax enforcement and spotty self-reporting from the companies themselves.”).

present some of the most serious health and climate impacts.<sup>124</sup> As with continuous monitoring, leak detection and remote shut-off technologies are occasionally required at oil and gas facilities.<sup>125</sup> These requirements should be imposed on all facilities within a setback to ensure the setback is protective. California, for example, requires all operating wells within its setback to install continuously operating leak detection systems intended to stop dangerous leaks.<sup>126</sup>

These requirements impose costs on developers who operate oil and gas infrastructure near communities, but this increased cost supports the overall goal of phasing out extraction near communities. It straightforwardly encourages the industry to close those facilities before closing others farther from communities. It also provides an important foundation for the next recommendation: to prioritize plugging and remediating infrastructure near communities. Moreover, monitoring will help fill important gaps in our understanding of how these operations impact nearby communities. The oil and gas industry has benefited from underregulation of extraction near communities, and it makes sense for the industry to help bear some additional cost to help fill that gap.

### C. Plug and Reclaim Wells Closest to People

The third priority should be plugging and remediating wells closest to people. Once a well is drilled and producing oil and gas, there are regulated procedures for safely closing the well, generally referred to as plugging and abandonment.<sup>127</sup> Once a well is plugged and abandoned, there are additional requirements for the industry to “reclaim” the site by remediating damage to the landscape. The idea is that, once a company no longer wants to operate a well, the company bears the burden of making the site safe and returning it to roughly its original condition.<sup>128</sup>

There are, however, various reasons why a company will avoid bearing these costs. For example, the boom-bust nature of the oil and gas industry may mean that a company will not want to plug a well so that it can access it in the near future, even if it is not profitable to produce from the well now.<sup>129</sup> Or the company may simply not want to pay for plugging and

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<sup>124</sup> See Solis, *supra* note 118; Jeff Turrentine, *Millions of Leaky and Abandoned Oil and Gas Wells Are Threatening Lives and the Climate*, NAT'L RES. DEF. COUNCIL (July 26, 2021), <https://www.nrdc.org/stories/millions-leaky-and-abandoned-oil-and-gas-wells-are-threatening-lives-and-climate>.

<sup>125</sup> See 49 C.F.R. § 192.935 (2021).

<sup>126</sup> CAL. PUB. RES. CODE § 3283(a)(2) (West 2023).

<sup>127</sup> See, e.g., COLO. CODE REGS. § 404-1:101 (2023) (defining “Plugging and Abandonment”).

<sup>128</sup> See *id.* at § 404-1:211 (describing plugging and abandonment requirements in Colorado).

<sup>129</sup> See Kyle Ferrar, *Idle Wells Are a Major Risk*, FRACTRACKER ALL. (Apr. 3, 2019), <https://www.fractracker.org/2019/04/idle-wells-are-a-major-risk> (“Wells are left idle for two main reasons: either the cost of plugging is prohibitive, or there may be potential for future extraction when oil and gas prices will fetch a higher profit margin.”).



abandonment, and it may do the bare minimum to keep the well technically active as long as it can to avoid this cost.<sup>130</sup> As such, not all wells that have functionally stopped producing oil and gas have been plugged, abandoned, and reclaimed—these “idle” wells, like those that were leaking in Bakersfield, are no longer producing oil and gas for sale but have not been plugged and abandoned.<sup>131</sup>

These incentives create dangerous conditions where a company may go through bankruptcy or otherwise stop operating while its less-profitable wells are unplugged. Unattractive to any other producers, these “orphan wells” often then become the state’s responsibility.<sup>132</sup> Most oil- and gas-producing states require the industry to put up funds to help cover the cost of plugging orphaned wells.<sup>133</sup> Generally, though, states collect nowhere near enough money to cover the potential costs of cleaning up orphaned wells in their jurisdictions.<sup>134</sup> As such, these wells are a major source of financial and pollution risk. There has been a strong push in federal and state policy to fund the plugging of orphaned wells. For example, the Biden administration recently dedicated \$560 million to states for this purpose.<sup>135</sup> Likewise, Colorado has required increased bonds and other financial assurances to provide money for plugging wells.<sup>136</sup>

In this sense, plugging wells provides both immediate health and environmental benefits as well as opportunities for investment with wide political support. These resources should first be directed toward plugging and remediating wells closest to where people are.

This proposal works naturally with a setback in several ways. First, the setback creates an easily administrable process for directing support for plugging and remediation activities within the area. A well-designed setback

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<sup>130</sup> *See id.*

<sup>131</sup> *Id.* (“Idle wells are oil and gas wells which are not in use for production, injection, or other purposes, but also have not been permanently sealed.”).

<sup>132</sup> *See Plugging Orphan Wells Across the United States*, ENV’T DEF. FUND, <https://www.edf.org/orphanwellmap> (last visited Apr. 13, 2023) (defining “orphan” wells as “oil and gas wells that are inactive, unplugged, and have no solvent owner of record”); *see also* Daniel Raimi et al., *Decommissioning Orphaned and Abandoned Oil and Gas Wells: New Estimates and Cost Drivers*, 55 ENV’T SCI. & TECH. 10224, 10225, 10228–29 (2021).

<sup>133</sup> *See Plugging Orphan Wells Across the United States*, *supra* note 132.

<sup>134</sup> *See, e.g.*, Nick Bowlin, *Colorado Works on an Oil and Gas Well Cleanup Guarantee, but Doubts Loom*, HIGH COUNTRY NEWS (Jan. 13, 2023), <https://www.hcn.org/articles/energy-industry-colorado-works-on-an-oil-and-gas-well-cleanup-guarantee-but-doubts-loom> (noting the state’s estimate that “Colorado has about \$4.6 billion in well plugging costs” from orphan wells).

<sup>135</sup> Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, § 40601, 135 Stat. 429, 1080–83 (2021); *see also* Heather Richards, *Biden Admin Deploys \$560M to Clean Up Orphaned Oil Wells*, E&E NEWS (Aug. 25, 2022, 4:10 PM), <https://www.eenews.net/articles/biden-admin-deploys-560m-to-clean-up-orphaned-oil-wells>.

<sup>136</sup> *See* Bowlin, *supra* note 134; An Act Concerning Measures to Address Orphaned Wells in Colorado, and, in Connection Therewith, Creating the Orphaned Wells Mitigation Enterprise, 2022 Colo. Sess. Laws 2323, 2325.

will expressly identify how permits for these operations in a setback can be approved, and any support mechanisms could be built into that process.

Second, prioritizing plugging and reclamation within the setback supports public health. Matching these policy features further emphasizes the larger policy goal of protecting the health and welfare of communities near extraction, which has important legal consequences discussed further in Part IV.

Third, focusing support within a setback helps avoid a perverse incentive for operators to drill where they expect support for the costs of plugging and remediation. New drilling would be prohibited within the setback, so financial or other support for plugging and remediation would be focused on phasing out existing infrastructure.

Finally, promoting plugging and reclamation within a setback supports industry workers. While not identical, plugging and reclamation operations can make use of many of the skills workers have from drilling and other aspects of the oil and gas industry.<sup>137</sup> Phasing out extraction can present a threat to those workers' employment and can politically divide communities whose members rely on income from working in that industry.<sup>138</sup> Supporting plugging and reclamation as a central part of phaseout policies can help offset impacts that phasing out extraction would have on these workers. When matched with broader policies supporting these workers, plugging and reclamation can play an important role in transitioning this workforce beyond extraction. Moreover, directing that support to plugging and reclamation close to communities can provide a visible link between those workers' skills and their role in building the community's future beyond oil and gas extraction.

#### D. Match Phaseouts with Decarbonization Programs

A final priority should be aligning phaseout policies with decarbonization policies, such as policies encouraging home weatherization, community-based renewable energy, and electrification of homes and transportation. Similar to focusing on plugging and reclamation near communities, prioritizing these programs toward communities impacted by extraction can help mitigate potential impacts of the transition while

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<sup>137</sup> See DANIEL RAIMI ET AL., RES. FOR THE FUTURE, GREEN STIMULUS FOR OIL AND GAS WORKERS: CONSIDERING A MAJOR FEDERAL EFFORT TO PLUG ORPHANED AND ABANDONED WELLS 16 (2020), [https://media.rff.org/documents/Raimi\\_et\\_al\\_-\\_Abandoned\\_Wells.pdf](https://media.rff.org/documents/Raimi_et_al_-_Abandoned_Wells.pdf) (“Oil and gas workers carry out a wide range of tasks, and many jobs are highly specialized. In many cases, recently unemployed energy workers possess the skills required to plug wells and restore surface sites.”); Erika Bolstad, *In Slumping Energy States, Plugging Abandoned Wells Could Provide an Economic Boost*, STATELINE (Sept. 23, 2020), <https://stateline.org/2020/09/23/in-slumping-energy-states-plugging-abandoned-wells-could-provide-an-economic-boost/>.

<sup>138</sup> See *supra* Section I.B.

establishing a close connection between the phaseout of extraction and the new energy economy.

A wide range of decarbonization programs are already intended to target communities that rely on fossil fuel extraction, including oil and gas extraction, and communities of color and low-income communities overburdened by pollution. For example, the Inflation Reduction Act has funding for local solar and home electrification in disadvantaged communities.<sup>139</sup> The Act also provides funding for locating projects in “energy communities” in an attempt to encourage investment in communities most impacted by the transition away from fossil fuels.<sup>140</sup> These concepts parallel similar state policies intended to direct the benefits of the energy transition to communities most impacted by the fossil fuel economy.<sup>141</sup>

Nevertheless, there is substantial uncertainty about how, and whether, federal and state funding will flow to communities.<sup>142</sup> Few programs expressly define criteria regarding which communities are eligible for programs and therefore leave substantial discretion to federal or state agencies tasked with implementing the programs.<sup>143</sup> In particular, early analysis suggests that the term “energy communities” is poorly defined and will not necessarily ensure money flows to affected communities.<sup>144</sup>

Policies focused on phasing out extraction should help direct this money to communities where extraction occurs. This could be done in a variety of ways, but the principal goal should be to prioritize support to communities close to oil and gas activity. A setback can serve as a clear guide for navigating that question, but it need not be a limiting feature. For example, many communities where extraction occurs may already qualify for these programs under preexisting categories.<sup>145</sup> Oil and gas activity within a setback zone could be a way to elevate communities for prioritized support, for example. The important distinction would be to ensure that the qualification process

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<sup>139</sup> Inflation Reduction Act of 2022, Pub. L. No. 117-169, § 13103, 136 Stat. 1818, 1921–23 (codified at 26 U.S.C. § 48); see Hannah Perls, *Breaking Down the Environmental Justice Provisions in the 2022 Inflation Reduction Act*, HARV. L. SCH. ENV'T & ENERGY L. PROGRAM (Aug. 12, 2022), <https://eelp.law.harvard.edu/2022/08/ira-ej-provisions>.

<sup>140</sup> Perls, *supra* note 139.

<sup>141</sup> *Id.*

<sup>142</sup> *Id.*

<sup>143</sup> *Id.*

<sup>144</sup> See DANIEL RAIMI & SOPHIE PESEK, RES. FOR THE FUTURE, WHAT IS AN “ENERGY COMMUNITY”? ALTERNATIVE APPROACHES FOR GEOGRAPHICALLY TARGETED ENERGY POLICY 1 (2022), [https://media.rff.org/documents/Report\\_22-12\\_AxXwJqy.pdf](https://media.rff.org/documents/Report_22-12_AxXwJqy.pdf).

<sup>145</sup> Weld County, Colorado, for example, has extensive oil and gas wells near its communities and qualifies at the county level as a disproportionately impacted community under state definitions. See *Colorado EnviroScreen*, COLO. DEP'T OF PUB. HEALTH & ENV'T (Aug. 2022), [https://teeo-cdphe.shinyapps.io/COEnviroScreen\\_English/](https://teeo-cdphe.shinyapps.io/COEnviroScreen_English/) (an environmental justice mapping tool ranking Weld County in the eightieth percentile of “most burdened” counties in Colorado, based on factors including its populace’s environmental exposure, sensitivity (health and age), and demographics, among others).

works at a level of detail to capture the setback zone and oil and gas activity within it; mapping and categorization methods that operate at a county or even census block level may not be sensitive enough to capture differences within communities where oil and gas extraction occurs.<sup>146</sup>

Prioritizing decarbonization programs in communities impacted by oil and gas advances at least two goals.

First, these programs can help offset potentially disproportionate costs stemming from phasing out production. As noted above, communities of color and low-income communities are disproportionately harmed by extraction and are particularly vulnerable to volatility in energy and gasoline prices.<sup>147</sup> Industry and governments often leverage this vulnerability to support continued extraction.<sup>148</sup> These arguments are generally overblown, as rising domestic extraction has not kept household energy prices or gasoline prices stable. A 2021 Department of Energy report, for example, predicted that gas prices would increase “considerabl[y]” from around \$2 per million British thermal units (MMBtu) to over \$8/MMBtu by 2025 if the United States banned fracking.<sup>149</sup> The United States has not banned fracking, of course, but gas prices rose anyway to over \$8/MMBtu by 2022.<sup>150</sup> The takeaway is that domestic production alone, even at record levels, cannot protect against volatility in energy prices for consumers, particularly those most vulnerable.

However, electrification and weatherization can help protect against volatility. While electricity pricing has its own problems, including its reliance on fossil fuel inputs, it is generally more stable than oil and gas prices.<sup>151</sup> Transitioning transportation and home usage from oil and gas sources to electricity could also help protect consumers from volatility. Likewise, weatherization, distributed renewable energy generation, and

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<sup>146</sup> As an example, census block GEOID 081230010041 in Evans, Colorado (within Weld County) qualifies as disproportionately impacted under several federal and state standards and is in close proximity to oil and gas extraction, but it does not clearly reflect where oil and gas activity occurs within the census block. *See id.* (using coordinates 40.380035, -104.684662). Directing decarbonization benefits through a setback along with a mapping tool could help target those benefits to those within a community most directly affected by oil and gas extraction.

<sup>147</sup> *See supra* Section I.C.

<sup>148</sup> *See* U.S. DEP’T OF ENERGY, ECONOMIC AND NATIONAL SECURITY IMPACTS UNDER A HYDRAULIC FRACTURING BAN 41–42 (2021), <https://www.energy.gov/sites/prod/files/2021/01/f82/economic-and-national-security-impacts-under-a-hydraulic-fracturing-ban.pdf>.

<sup>149</sup> *Id.* at 26.

<sup>150</sup> *Henry Hub Natural Gas Spot Price*, U.S. ENERGY INFO. ADMIN. (Feb. 1, 2023), <https://www.eia.gov/dnav/ng/hist/rngwhhdm.htm> (showing the August 2022 Gas Spot Price to be \$8.81/MMBtu).

<sup>151</sup> *See* Max Baumhefner, *Fight Fascists & Save Money: Go Electric*, NAT’L RES. DEF. COUNCIL (Aug. 30, 2022), <https://www.nrdc.org/experts/max-baumhefner/fight-fascists-save-money-electric> (“While gas prices fluctuate due to events over which we have no control, electricity prices are inherently more stable because electricity is produced from a diverse mix of largely domestic energy sources. Electricity prices also are more stable because the power industry is regulated.”).

other improvements could reduce overall costs by making home energy use and transportation more efficient.

Second, matching phaseout policies with decarbonization investments demonstrates a visible and meaningful commitment to a just transition. As explained in the next Part, because these communities have suffered the primary impacts of fossil fuel extraction, they should be prioritized in the transition to a more sustainable, renewable energy future. By letting setbacks and phaseout policies guide these investments, we create a clear connection between the past and future of this transition that can support a just transition more broadly.

#### IV. BENEFITS OF PRIORITIZING PROXIMITY

Two central commitments of a just transition are to “fight the bad” and “build the new.”<sup>152</sup> This framework emphasizes that a just transition demands linking any policies shutting down extractive infrastructure with a vision for building new relationships between people, energy, and the environment. The priorities above reflect this pairing, matching policies for phasing out extraction near communities with policies for building new relationships around repairing and sustaining communities. This Part argues that this approach helps overcome legal, political, and equitable barriers presented by other phaseout policies.

##### A. *Strengthens Legal Foundation*

One primary challenge to any policy focused on extraction is the argument that state and local governments have limited legal authority to regulate the extraction of oil and gas. This frequently manifests as a constitutional argument that regulating extraction effectively seizes private property, in this case the property interest in oil and gas itself, without compensation. These “takings” arguments appear frequently in response to any form of regulating extraction. For example, Chevron and several other companies argue that a California agency’s decision to deny a permit for extraction is unconstitutional.<sup>153</sup> Likewise, opponents of S.B. 1137 argue that imposing the setback creates a taking risk for California.<sup>154</sup> Potential exposure to these takings claims can chill regulation of oil and gas extraction

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<sup>152</sup> See *How We Work: Our Approach and Meta-Strategies*, CLIMATE JUST. ALL., <https://climatejusticealliance.org/how-we-work/> (last visited Apr. 13, 2023).

<sup>153</sup> See John Cox, *Chevron Sues Newsom over Fracking Ban*, BAKERSFIELD.COM (Mar. 18, 2022), [https://www.bakersfield.com/news/article\\_a2efd696-a6cf-11ec-9e1d-b31bc7ba9757.html](https://www.bakersfield.com/news/article_a2efd696-a6cf-11ec-9e1d-b31bc7ba9757.html) (noting Chevron’s takings claim and highlighting similar lawsuits by a prominent oil- and gas-producing county in California and an industry group).

<sup>154</sup> John Cox, *Oil Industry Hopes to Put Contentious Setbacks Law Before California Voters*, BAKERSFIELD.COM (Oct. 14, 2022), [https://www.bakersfield.com/news/article\\_7158540e-4be9-11ed-a83a-2f0256e41779.html](https://www.bakersfield.com/news/article_7158540e-4be9-11ed-a83a-2f0256e41779.html) (“The bill’s opponents contend the law exposes the state to legal claims that it constitutes an unconstitutional taking of private property.”).

even at the state level. At the local level, where the impacts of extraction are most severe, potential exposure to takings claims from regulated producers can present an existential threat to underfunded municipal governments.<sup>155</sup>

One central strength of focusing on proximity is that state and local regulatory authority is arguably at its apex when dealing with public health and safety, particularly in the takings context.<sup>156</sup> State and local governments' regulatory "police power" has historically focused on protecting the health and safety of communities.<sup>157</sup> This general power underlies the ability to, for example, zone industrial land uses away from where people live and work or regulate "nuisances" that pollute communities.<sup>158</sup> When a state or local government regulates property within the historic contours of its "police power," the Supreme Court has held that such regulation is not a taking even if it diminishes the property's value.<sup>159</sup>

Focusing on proximity tailors regulation of extraction to where its health and safety impacts are most severe and well-established. As explained above, protective setbacks should be designed to reflect the latest research on the impacts of oil and gas extraction on nearby communities.<sup>160</sup> A growing consensus in this research has demonstrated that the closer people are to an oil or gas well, the more severe the health and safety risks.<sup>161</sup> Phaseout policies rooted in this demonstrated health and safety risk hew most closely to the traditional "police power" of state and local governments to protect their communities. It is for this reason that, as Jade Wolansky has explained, the California setback's emphasis on public health and welfare likely protects it from industry challenge.<sup>162</sup> In addition, the incremental nature of a setback also helps protect phaseout policies by tailoring the

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<sup>155</sup> In Colorado, the industry wielded this effect by proposing a constitutional amendment to undermine support for a setback measure on the ballot. *See Amendment 74: Everything You Need to Know About the Colorado Ballot Question*, COLO. SUN, <https://coloradosun.com/amendment-74-explained> (last visited Apr. 8, 2023) ("[C]ouple it with the setback proposal to push oil and gas drilling away from neighborhoods, parks, lakes and streams, and the state could be on the hook for billions in compensation to oil and gas companies.").

<sup>156</sup> *See, e.g., Kramer, supra note 114*, at 74 ("Litigation involving the application of zoning ordinances to oil and gas operations for several decades was merely a subset of general zoning and/or land use litigation."); Alan Romero, *Local Regulation of Mineral Development in Wyoming*, 10 WYO. L. REV. 463, 482 (2010) ("Setback and fencing requirements are traditional, common instances of such valid local regulation.").

<sup>157</sup> *See ELKIND & LAMM, supra note 115*, at 31.

<sup>158</sup> *Id.*

<sup>159</sup> *See Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1030 (1992) (explaining how regulations that reflect "background principles of nuisance and property law" will not result in a takings claim).

<sup>160</sup> *See supra* Subsection III.A.1.

<sup>161</sup> *See, e.g., PHYSICIANS FOR SOC. RESP. & CONCERNED HEALTH PROS. OF N.Y., supra note 53*, at 91, 104 ("Researchers in Colorado have documented that air pollution increased with proximity to drilling and fracking operations and was sufficiently high to raise cancer risks in some cases." (citing Lisa M. McKenzie et al., *Ambient Nonmethane Hydrocarbon Levels Along Colorado's Northern Front Range: Acute and Chronic Health Risks*, 52 ENV'T SCI. & TECH. 4514 (2018))).

<sup>162</sup> Wolansky, *supra note 81*, at 397.

extractive activity targeted by the regulation.<sup>163</sup> In this way, phaseout policies grounded in proximity are on stronger legal footing against common industry challenges than more generalized approaches.

### B. *Targets Dependency*

A second benefit of these priorities is that they target the root of political support for continued extraction by seeking to reduce local reliance on the oil and gas industry while supporting workers and communities in the transition. As noted above, political support for extraction often stems from a real or perceived dependence among communities on extraction.<sup>164</sup> Matching phaseouts with targeted investments to communities impacted by extraction could help undermine both these real and perceived senses of dependence on extraction.

Investments in plugging and remediating wells and decarbonization could also help diversify the local economy, both in the short term through supporting energy workers and the long term by potentially opening space for economic activity displaced by extraction. And, similar to electrification protecting communities against volatility in energy prices,<sup>165</sup> so too can shifting away from extraction protect communities from the boom-bust cycles that undermine community development. Because political support also comes from perceptions of dependence, emphasizing the geographic connection between phasing out extracting and investing in decarbonization could also help undermine political support for extraction.

Undermining local support for continued extraction would support decarbonization programs more broadly. In this sense, prioritizing proximity offers a strong starting point for phasing out extraction that places the policies on strong legal footing while laying the foundation for broader political support for the move away from fossil fuels.

### C. *Builds the New*

Separate from supporting decarbonization generally, prioritizing proximity in phaseout policies supports a just transition in several senses. First, it follows the lead of frontline communities. As environmental justice literature has emphasized for years, communities are generally in the best position to know what interventions work best for them.<sup>166</sup> Communities at

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<sup>163</sup> Romero, *supra* note 156, at 483 (noting that setback “requirements do not prevent mineral extraction, but merely help to buffer the extraction from other uses and thereby reduce the adverse impacts on other uses”).

<sup>164</sup> See Mayer & Malin, *supra* note 61, at 80.

<sup>165</sup> Baumhefner, *supra* note 151.

<sup>166</sup> See, e.g., Shalanda H. Baker, *Anti-Resilience: A Roadmap for Transformational Justice Within the Energy System*, 54 HARV. C.R.-C.L. L. REV. 1, 43 (2019) (“there is no singular approach to energy policy, and . . . energy stakeholders, particularly the most vulnerable, are best positioned to create frameworks that unburden them”).

the frontlines of oil and gas extraction have consistently and successfully called for setbacks, linking the harms that extraction forces onto their communities with both broader movements for climate justice and the frustratingly abstract debates around emissions reductions.<sup>167</sup> These priorities build on those successes.

Second, these priorities seek to direct transformative investment to communities most impacted by extraction. Because the primary harms of extraction are localized, proximity is a helpful tool for navigating mismatches between who benefits from extraction and who bears its most serious impacts.

Third, the priorities seek to make explicit, both in policy and geography, the links between phasing out extraction and the transition to the renewable energy economy. Paralleling the insight that demand-side and supply-side policies work better together,<sup>168</sup> these priorities emphasize how matching policies focused on phasing out extraction with investments in repairing and decarbonizing communities help overcome some of the legal and political barriers to the larger policy goal of phasing out extraction nationwide.

#### CONCLUSION

Phasing out extraction of oil and gas in the United States is at once a necessary yet seemingly impossible task. From the traditional state and federal perspectives of climate policy, the problem seems intractable: oil and gas extraction is now a central pillar of federal policy, while many oil- and gas-producing states are politically and economically aligned with extraction. Even if the political will materialized, nationwide or statewide phaseouts would face legal challenges and could end up deepening inequality and disproportionately impacting communities of color and low-income communities. This Article has sought to highlight that grassroots advocacy around setbacks in Colorado and California has identified a pathway for phasing out oil and gas extraction in the United States. Focusing on proximity to guide phaseout policies and investments places phaseout policies on strong legal and political footing. For this reason, this grassroots advocacy around setbacks should inform broader policy discussions about how to achieve phaseouts of oil and gas extraction and avoid the most catastrophic impacts of climate change.

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<sup>167</sup> See *supra* Part II.

<sup>168</sup> See *supra* Section I.A.



