Resilient Energy Economies Initiative

Full Research Proposal Template

# Summary Information

1. **Full name, title, and email address of the PI(s)**

Dr. Paasha Mahdavi; Associate Professor, UC Santa Barbara; paasha@polsci.ucsb.edu

1. **Names, titles, and affiliations of other team members (if applicable)**

Dr. Matto Mildenberger, Associate Professor, UC Santa Barbara

Dr. Dustin Tingley, Professor, Harvard University

Dr. Ranjit Deshmukh, Associate Professor, UC Santa Barbara

Dr. Cesar Martinez-Alvarez, Assistant Professor, UC Santa Barbara

Carrie Fernandes, Deputy Director, The 2035 Initiative

1. **The host institution of the project**

University of California, Santa Barbara

1. **The title of the project**

Public Opinion on Economic Transition Challenges and Opportunities in Oil Communities

1. **The proposed start and completion dates of the project**

1/1/25 - 1/1/26 (1 year)

1. **The estimated costs of the project (maximum awards will be roughly $100,000)**

Faculty salary and benefits – $10,638

Staff salary and benefits – $30,628

Survey direct costs – $45,000

Indirect costs (10%) – $13,015

**Total costs – $99,782**

1. **A one-paragraph description of the project to be posted on the REE website. This description should be consistent with the longer project description included in Section 2 of this template.**

Policymakers in oil-producing regions across the United States have developed a range of economic development strategies that have accelerated the phaseout of oil and gas production. The success of these development strategies will hinge on support from individuals in producing communities, but there is a lack of systematic, at-scale data on experiences of people living in these communities. To better understand their experiences, we will produce a high-resolution, spatially-targeted, locally-representative public opinion survey to gauge household opinions on the costs and benefits created by economic development strategies for oil and gas communities. Our survey will be deliberately targeted to households living near oil and gas facilities to determine how awareness, attitudes, and opinions vary based on respondent social, economic, and political characteristics, as well as proximity to and experience working with oil infrastructure. The data from this project will provide a more nuanced understanding of the lived experience of people in fossil fuel-relient communities and how their perceptions of job opportunities and community resilience may be impacted by different economic development strategies. This valuable information can help policymakers in these communities enact targeted policies that pave the way for a resilient energy future.

# Project description

In this section, please provide a description of the research project. This description should include the following subsections and should be no more than 4 pages, excluding any necessary references.

**What are the question(s) that the project seeks to answer and why is it important for building economic resilience in fossil communities** (no more than two paragraphs)

Policymakers in oil-producing regions across the United States have developed a range of economic development strategies in the wake of energy transition efforts that have accelerated the phaseout of oil and gas production. Proposed and enacted strategies vary widely to achieve the same goal of economic resilience, ranging from replacing oil and gas jobs with renewable jobs; early education programs to train a new workforce; industry diversification to transition-proof local economies; asset remediation and rural electrification as a source of new employment; and more experimental strategies such as developing “carbon capture corridors” or “hydrogen hubs” in place of existing oil and gas sites.

The success of these development strategies will hinge on support and buy-in from individuals in producing communities. What are public attitudes on the credibility of development strategies in creating desirable, durable jobs and community investments? How is government intervention for development strategies perceived compared to market-based approaches? And what are the perceived limitations of development strategies in addressing economic challenges? For example, can the public easily access and understand economic development strategies? To what extent are individuals aware of development plans in their communities? Each of these questions is of critical interest to policymakers, not just because of the economic impacts on communities they represent, but also the political importance of voters in fossil fuel districts (Gazmararian and Tingley 2023).

**How will the project be conducted and successfully completed (e.g., approach, data, methodologies)?**

Researchers and policymakers lack systematic, at-scale data on experiences of people on the ground that would allow them to answer these questions. Existing research largely examines socio-demographic costs and benefits as measured through administrative data (Boomhower 2019; Deshmukh et al. 2022; Kang et al. 2023; Weber et al. 2021). Studies that aim to measure community-based perceptions rely on omnibus instruments such as the American Community Survey or by mining social media posts unlikely to be representative of community experiences and preferences (Proville et al. 2022; Gong et al. 2023). While there is rigorous work on policy preferences in selected communities using precinct-level voting data and planning commission reports (Raimi et al. 2020; Partridge et al. 2022), there is a need to expand this kind of work to the national level to allow for systematic comparisons.

To better understand the experience of individuals in producing communities, we propose a high-resolution, spatially-targeted, locally-representative public opinion survey — the first of its kind at this scale — to gauge household opinions on the costs and benefits created by economic development strategies for oil communities. We aim to measure the shifting importance of the fossil fuel industry in historical energy communities and the openness of these communities towards clean energy futures and new economies. The resulting survey data from this project will provide a more nuanced understanding of the lived experience of people living in fossil fuel-relient communities and how their perceptions of job opportunities and community resilience may be impacted by economic development strategies. We see this as valuable information for policymakers in these communities to enact targeted policies — with the support of their constituents — that pave the way for a resilient energy future.

Our survey will be deliberately targeted to households living near oil and gas facilities (wells, refineries, processing and storage) to determine how awareness, attitudes, and opinions vary based on respondent social, economic, and political characteristics, as well as proximity to and experience working with oil infrastructure.

Recent advances in survey sampling and analysis provide new opportunities for researchers to gather spatially high-resolution data on attitudes and preferences of people living within precise geographic boundaries. We will employ a “mail-to-web” survey sampling technique, which involves sending invitation mailers to randomly selected addresses within target geographics, based on geo-coded public data on facilities (HIFLD Open Data) and our existing access to proprietary data on oil-well coordinates from Rystad Energy (Deshmukh et al. 2022). These mailers invite residents to log into a web portal to complete a compensated survey, which we will administer on the Qualtrics platform. This approach follows best-practice in public opinion research (Yan, Kalla, and Broockman 2018), and builds on our team’s previous use of high-spatial-resolution survey methods to study attitudes around Public Safety Power Shutoffs (Mildenberger et al. 2022). We propose sending 50,000 mailers to achieve a roughly 2,000-respondent sample that is representative of households in census blocks with oil and gas facilities in the 24 U.S. states that collectively produce over 99% of oil and gas (EIA 2024a).

In addition to general questions about awareness and perceptions of economic development strategies, our survey will ask a series of questions about attitudes towards employment opportunities proposed by different development strategies. These include investing in renewable energy jobs; employment related to well capping and related activities (Hu and Tingley 2022); early education workforce development (National Academies 2023); and retraining programs for mid-career workers (Look et al. 2023). Following our previous work, we plan to explore whether these opportunities are seen as benefiting local workers and unions, whether jobs are long-lasting, and whether they pay well (Gazmararian and Tingley 2023).

A parallel set of questions will explore considerations of job status. Are jobs in renewables, environmental remediation, or non-energy sectors viewed positively, or do traditional extraction jobs carry higher status in these communities? For younger respondents, we will explore the viability of shifting into “mid-transition” jobs on decarbonizing or decommissioning fossil assets (Grubert and Hastings‐Simon 2022), compared to full-scale shifts to clean energy jobs in solar, wind, batteries, and EV manufacturing.

We will also test the effects of different messaging approaches on policy support using vignettes and framing experiments embedded in the survey. For example, we will test how respondents’ policy perceptions are affected by providing information in simple terms (e.g., “jobs programs” and “new power plants”) versus frames that list specific economic development plans. We also plan to probe the extent to which people in producing communities perceive the need for *any* kind of transitional strategy, or whether this support relies on providing information about the economic challenges posed by transition risks, such as declining production rates or higher future costs due to national climate policies.

We then plan to assess which attributes and combinations of economic development policies garner greater support. Building on our prior research using conjoint survey experiments for assessing policy support (Bergquist, Mildenberger, and Stokes 2020), we aim to ask respondents to choose between two choice bundles with randomized policy content across at least five dimensions of a hypothetical economic development strategy. These include: type of job program proposed (*no program, general retraining, renewables-focused training, remediation-focused training*); business focus (*no focus, general diversification, service/tourism investment, renewables investment, oil-related transition investment*); location (*no change, relocation*); level of government involvement (*minimal, local only, state only, federal only, combined*); and funding source (*no identified funding, oil industry, non-oil local business, state government, federal government*). These all-in-one conjoint modules allow for measuring the marginal impact of different policy components on support for economic development policy, while also allowing for measurement of how different choice dimensions vary in relative importance.

This design allows for subgroup analysis by randomizing on different blocks of interest. For both the vignette experiment and the conjoint experiment, we will randomize treatments on production-growth regions versus non-growth regions. This will be done at the county level, by binning counties into productive versus non-productive basins, based on the EIA’s drilling productivity classification as of June 2024 (EIA 2024b), and then randomizing treatments within each of the two bins in the online survey platform to achieve balance (Cavaille 2019). This would allow for comparisons across households in growth regions, like the Bakken, Niobrara/DJ, Permian, and Appalachia/Marcellus basins, versus non-growth regions, like the San Joaquin, Barnett, North Slope, and onshore Western Gulf basins.

We will analyze the survey data in two ways. The first will be a descriptive analysis of the broad trends in support for different economic development strategies, including perceptions of employment opportunities and job status, as well as general attitudes on respondent communities’ economic resilience and openness towards clean energy futures and new economies. The second will be a regression analysis framework to assess the treatment effects of the framing and vignette experiments and the conjoint experiment. In both parts, we will analyze national and subnational trends, as well as the growth/non-growth regions subgroup analysis. We will also explore heterogeneity in the results across respondent characteristics, including proximity to oil infrastructure and employment in the oil industry, as well as age, gender, income, partisanship, education, and other demographic information collected at the end of the survey instrument.

We will adhere to strict ethical standards that include informed consent (provided in both the mailer and the online survey landing page) and data storage protocols to maintain the anonymity of respondents. Upon completion of the project and publication of the report, we will deposit the code and anonymized data in publicly-available online repositories (Code Ocean, Github).

**How will the research outcome(s) directly inform local, state, or federal policymakers or other decision makers seeking to build economic resilience in fossil fuel-dependent communities? If the project is community-engaged, how will the PI(s) ensure that the engagement will result in community benefit?**

To ensure that our work directly benefits community members, we will invite community partners to provide continuous input through the duration of the project. This will allow the framework and findings to be grounded by different communities’ priorities. We will recruit at least five Community Advisory Board Members from community-based organizations representing a broad range of demographics, geographies, and oil trajectories. The latter is to ensure we have diversity in organizations from production-growth states like Texas and New Mexico, production-decline states like California, and those in between like Pennsylvania and onshore Louisiana.

The role of the Community Advisory Board will be to provide feedback on the research and survey design, including the accessibility of our survey instrument to different audiences and the general applicability of questions to properly gauge the most salient aspects of existing and planned economic development strategies. We will also engage with the Board at the end of the project to present our overall findings, and to promote distribution of our report and policy brief to their communities and peer organizations in other communities. Members will be compensated for their efforts.

Our survey results will have actionable contributions to the policymaking process. For example, if our survey finds that a majority of individuals support renewable energy investments in oil communities, but only if they are paired with union-backed job training programs, then policymakers can use this information to design more popular economic development strategies. Alternatively, if our survey shows that strategies focused on oil well remediation are supported by younger voters, but not by older voters, policymakers can judge for themselves whether to include these components in policies based on their constituency makeup. Separately, results from our survey’s vignette experiments can guide campaigns on how to better inform households about the content and goals of economic development strategies that are not currently accessible and understandable by members of the community. Finally, we hope that the results of this survey will be used to craft development strategies that are both effective in driving economic resilience and durable in maintaining long-term political support.

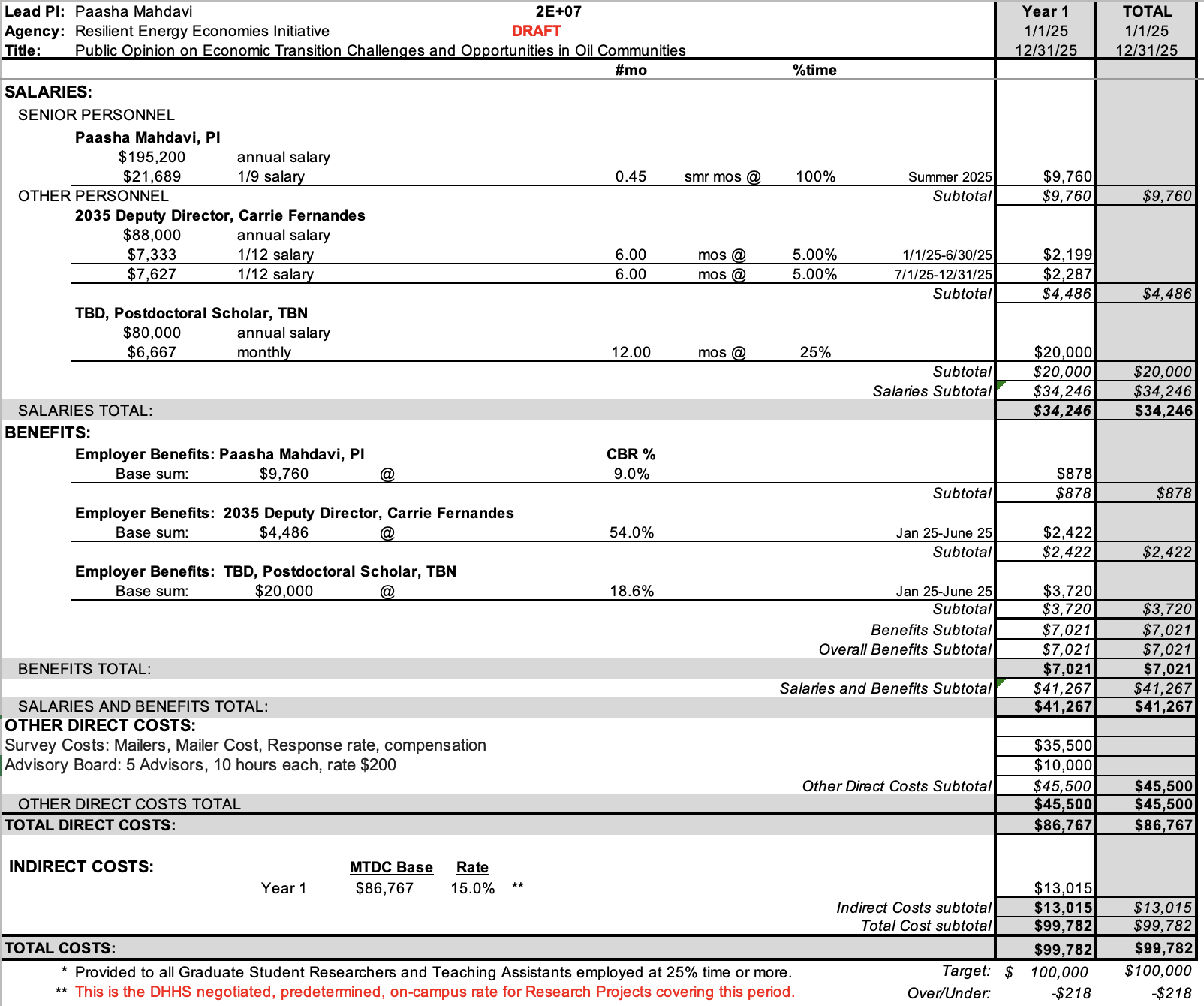
# Major tasks and timeline

**The preferred grant performance period is 12 to 18 months, or longer if necessary. The starting date is flexible, but applicants are urged to target a completion date no later than April 1, 2026. Please provide below a list of the project’s major tasks and a proposed timeline for completing those tasks. This section should be a maximum of one page.**

| *Task* | *Jan* | *Feb* | *Mar* | *Apr* | *May* | *Jun* | *Jul* | *Aug* | *Sep* | *Oct* | *Nov* | *Dec* |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Recruit Community Advisory Board |  |  |  |  |  |  |  |  |  |  |  |  |
| Design survey instrument |  |  |  |  |  |  |  |  |  |  |  |  |
| Establish sampling frame |  |  |  |  |  |  |  |  |  |  |  |  |
| Solicit feedback and convene Community Advisory Board |  |  |  |  |  |  |  |  |  |  |  |  |
| Field mail-to-web survey |  |  |  |  |  |  |  |  |  |  |  |  |
| Analyze survey data |  |  |  |  |  |  |  |  |  |  |  |  |
| Deliverables: Policy brief and final report |  |  |  |  |  |  |  |  |  |  |  |  |
| Deliverables: Disseminate findings + policy outreach |  |  |  |  |  |  |  |  |  |  |  |  |

# Budget information

Please provide here, or attach separately, the proposed budget, with a breakout of funds allocated to all major tasks and expenses. The REE research budget is capped, so please make every effort to constrain your budget to help enable the funding of additional scholarship. Note that indirect costs are capped at 15 percent. Final budgets will be prepared in partnership with the finance and administration team from the prime grantee (Resources for the Future).



# Outputs and engagement strategy

**Because this project aims to not only develop new knowledge, but also to build a community of practice so that this knowledge spreads quickly, it is important for grantees to engage with, and help strengthen, this community. As such, grantees will be expected to participate in the community on an ongoing basis, including making every effort to attend REE convenings. These convenings will serve to build a community of practice among scholars, practitioners, and policymakers and to disseminate knowledge on the areas of study. Funding will be available to ensure grantees can participate in these convenings.**

**Grant recipients will be expected to prepare a summary for policymakers with input from REE project PIs, which will be published on the REE website. These summaries will highlight the most important policy-relevant takeaways from their work. Grantees may also be asked to participate in briefings with policymakers to discuss the results of their work and the policy implications. Scholars are encouraged to pursue publications in other forums independently, such as in peer-reviewed journals, books, or popular media outlets.**

**Please provide any additional information on other expected outputs and a description of how the project team plans to engage with key decisionmakers to disseminate key insights.**

In addition to the REE convenings and community briefings, the project will directly inform policymakers through a standalone report and a policy briefing summarizing the results of the survey findings directly distributed to surveyed communities, policymakers, and a wide public audience. Independent of these deliverables and the timeline of activities given above, we aim to publish our findings in peer-reviewed articles in political science and general-interest science journals.

We will also draw upon *The 2035 Initiative*’s communication strategy detailed below to help disseminate our work to a network of policymakers, journalists, industry leaders, and researchers, and increase the accessibility of our research for non-academic audiences:

*Bringing academic findings into the public sphere.* To maximize our reach and influence, we write press releases, author op-eds, and coordinate with journalists to broadcast our findings. As a result, our research regularly makes national [headlines](https://www.2035initiative.com/commentary). We are published in a variety of [news outlets](https://www.2035initiative.com/public-writing), and our faculty are regularly [interviewed](https://www.2035initiative.com/interviews-1) on global news channels and radio programs. In addition to the policy briefing above, we will also release a short, plain-language brief that outlines the key findings of each academic article we publish based on the results from this project. We have found that this lets advocates, policymakers, and other stakeholders learn from our research without spending hours reading technical academic writing. Examples of these briefs can be found on our [website](https://www.2035initiative.com/policy-briefs).

### *Sharing diverse stories from the climate movement through A Matter of Degrees. The 2035 Initiative* is a production partner for the popular climate podcast [*A Matter of Degrees*](https://www.degreespod.com/). With nearly one million downloads, the show stands out for its deep research, high-quality production, and accessible explanations. Episodes relevant to this project include: clean energy workforce and education programs; the “prestige” factor for oil and gas jobs; the implications of the energy transition for tribal communities; and debt securitization as a solution for coal plant retirements to minimize cost burdens on communities. [Gizmodo](https://gizmodo.com/here-are-10-of-the-best-climate-change-podcasts-out-rig-1845397380/slides/4), [Grist](https://grist.org/fix/media/2020-was-the-year-climate-podcasts-went-mainstream-here-are-our-favorites/), [Variety](https://variety.com/2022/digital/news/podcasts-climate-crisis-change-sustainable-living-1235219350/) and [WIRED](https://link.wired.co.uk/view/60995759efe06710262561faesu0l.ld/1d92d996) have all listed the show as a top climate podcast.

*Visiting policymakers and workshops.* We host leading environmental policy scholars and policymakers each year for one-week visits. During their stays, visiting policymakers engage with faculty, guest teach, and give a public lecture. *The 2035 Initiative* also hosts a speaker series featuring 1-2 public research talks per quarter, and seminars for current students.

# Additional information

**Please provide here, or attach separately, any additional information that may be necessary to evaluate this proposal (e.g., letters of support, detailed description of community engagement plans).**

*Additional Qualifications of the Research Team*

*Measuring public opinion and attitudes with innovative, high spatial resolution data collection*. Our team has extensive experience leading large-scale national and international data collection and experimental projects on climate change, natural resources management, extractive industries, and policy support. For example, our faculty have helped develop high-impact, public-facing interactive web tools for climate opinion maps in the [US](https://climatecommunication.yale.edu/visualizations-data/ycom-us/) and [Canada](https://climatecommunication.yale.edu/visualizations-data/ccom/). The PI co-led the first cross-national survey of public attitudes in Europe towards methane regulations in the oil sector (Bergquist and Mahdavi, 2023). The PI and two co-PIs have also conducted a first-of-its-kind survey of climate attitudes of 20,026 individuals in 56 small island developing states and territories, showcasing the team’s ability to survey hard-to-reach populations in climate-impacted communities (Mildenberger et al. 2024).

*Researching the social impact of policies in oil and gas regions*. In addition, the team has published research on evaluating the economic impacts for various supply-side policies to limit California’s oil production (Deshmukh et al. 2022), and measures for mitigating emissions from flaring and venting from oil and gas facilities (Calel and Mahdavi 2020).

Co-PI Deshmukh contributed to a [study](https://zenodo.org/record/4707966) for the California Governor’s Office with support from CalEPA that examined policies to phase out in-state oil extraction to meet carbon neutrality goals. Additionally, the PI and co-PIs provided case assistance on CA-AB 631, passed last year, to enhance penalties on firms in noncompliance with existing oil regulations.

We also assisted State Assemblymember Gregg Hart (D-Santa Barbara) on recently passed legislation to plug California’s roughly 40,000 idle wells (CA-AB 1866), and are currently providing an impact evaluation on setback requirements from CA-SB 1137 (Deshmukh, Mahdavi et al. 2024). The latter will culminate in a public easy-to-use map on the health, labor, and social impacts of living within 3200 feet of an oil well in California: <https://emlab-ucsb.shinyapps.io/ca_oi_extraction_setbacks/> (note: still in development).

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