




# The climate advocacy gap

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## 1 Introduction

Climate change is a problem of global scope. Despite this, in many countries, subnational actors such as state governments have led the way in adopting policies aimed at reducing greenhouse gas emissions, in particular in the USA (Kuramochi et al. 2020). State policies, in addition to directly driving emission reductions (Peng et al. 2021), can increase momentum for national-level policy—for instance, by increasing the political power of renewable energy interests (Trachtman 2019). Yet, even as some subnational governments have become climate policy leaders, others have stagnated or retrenched (Basseches et al. 2022). A key factor for climate leadership and emission reductions is the presence and power of climate advocates (Fraser and Temocin 2021, Böhler et al. 2022) to take on the continuing political clout of fossil fuel interests (Brulle et al. 2021).

Given the importance of advocacy for climate policy development, we ask how climate mitigation advocacy is distributed across US states. Specifically, we examine whether pro-climate groups—both environmental groups and clean energy interests—are concentrated where the politics are most opportune or the emissions are greatest.

While we know the distribution of public opinion across US states (Howe et al. 2015), existing work has not explored the distribution of climate advocacy across states. We present data on pro-climate groups lobbying state governments from the year 2017, newly curated using a machine learning model. The year 2017 was during a period when Republican control of federal government led to a renewed focus on achieving policy gains at the state level. We find a threefold climate advocacy gap: the representation of pro-climate groups is low (1) as a proportion of energy-related interest groups, (2) in Republican-leaning states, and (3) in states with high total carbon emissions.

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## 2 Methods

We curated our data from state government lobbying registrations collected by the National Institute on Money in State Politics (NIMSP) for the year 2017. The most influential interest groups in state politics are “repeat-players” that lobby each year, and thus are likely to be represented in any single year. We focus on pro-climate interests here since groups opposed to climate policies are more difficult to identify in a systematic way (see also SI 1a).

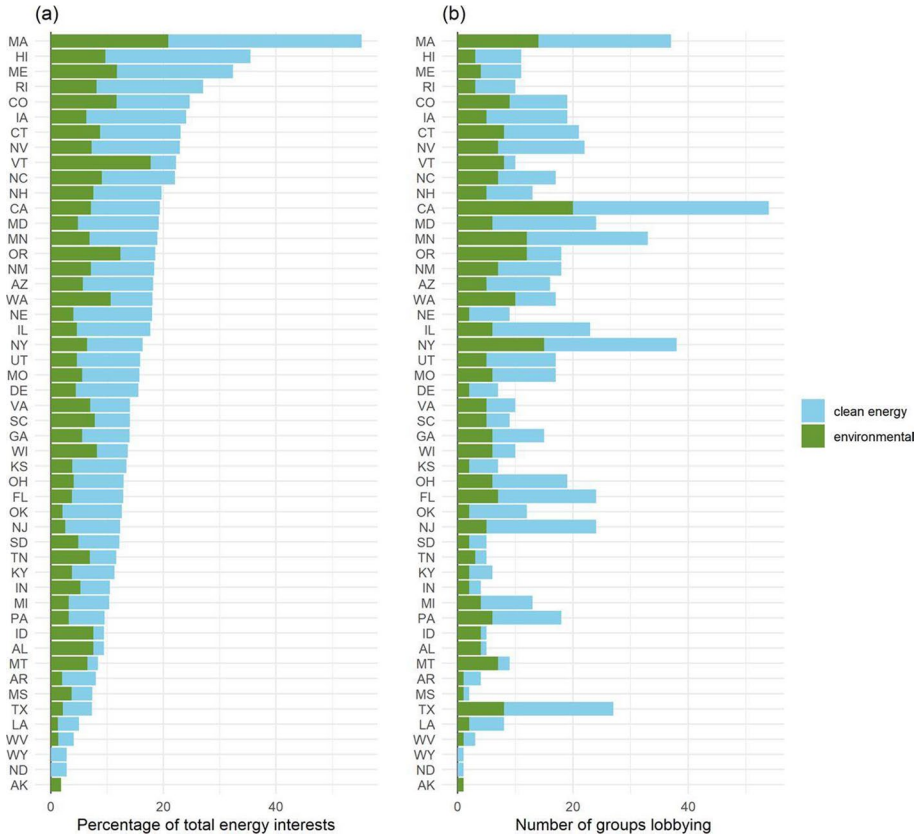
NIMSP, in most cases, does not provide additional details about the groups that lobbied outside of their names. NIMSP staffers internally coded the industry of interest groups for a portion of the sample—22% of the approximately 54,187 organizations that recorded a lobbying registration. NIMSP did not have a systematic process determining which records included industry labels. By matching interest group names with federal lobbying data from the Center for Responsive Politics (CRP), we were able to increase the percentage of records with industry labels to 26%. These data—and, more specifically, the words in interest groups’ names—served as the input to a machine learning model. We split our sample into training (80%) and test (20%) groups and used the *glmnet* package in R to fit a logistic regression model with an L1 penalty and a fourfold cross-validation on the training data. The outcome was a binary indicator for whether a group was classified by NIMSP or CRP as “pro-environmental” or “alternative energy.” The AUC in the test data was 0.83.

The model identified 1045 groups and assigned probabilities for each being “pro-environmental” or “alternative energy” based on the words in the group’s name. We then assigned research assistants to gather additional information about the groups based on web searches (see also SI 1b). Three hundred ninety-three of the 1045 groups tagged initially by the model were subsequently identified by research assistants as primarily clean energy groups or environmental groups. The 393 pro-climate groups we identified had a total of 5675 lobbying registrations in 2017. We use lobbying records versus spending because spending data is only available for a subset of states. Records and spending are highly correlated ( $\rho=0.71$ ).

While measuring the representation of fossil fuel interests in state politics was not in the scope of this study (for reasons discussed in the SI), we use data recently curated by Holyoke (2019) to broadly measure the number of groups lobbying in the sector “energy and natural resources.” Holyoke uses NIMSP data and relies on interest group names and research assistants to code groups’ economic sectors. The sectors coded by Holyoke correspond to National Association Industry Classification Codes (NAICS). The estimated number of groups by state coded by Holyoke as belonging to the “energy and natural resources” sector serves as the denominator for our analyses presented in Figs. 1, 2, and 3.

## 3 Results

Across the majority of states, we find that pro-climate groups represent a minority of energy-related interest groups (Fig. 1a). We estimate that, in most states, between zero and 10% of energy-related interest groups are environmental groups lobbying on climate mitigation. We estimate that the share of clean energy interests among energy-related groups lies on average between 5 and 15% across US states. While prior work has shown that the balance of power between pro-climate and potential anti-climate interests remains heavily

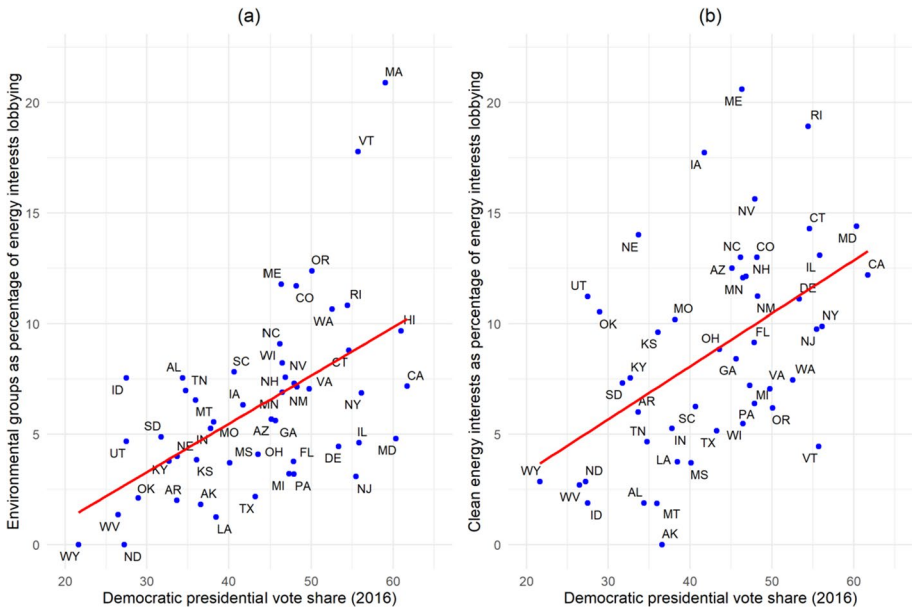


**Fig. 1** Number of environmental and clean energy groups that lobbied state governments, 2017. **a** Pro-climate interests as percentage of total number of energy interests lobbying. **b** The number of pro-climate interests lobbying

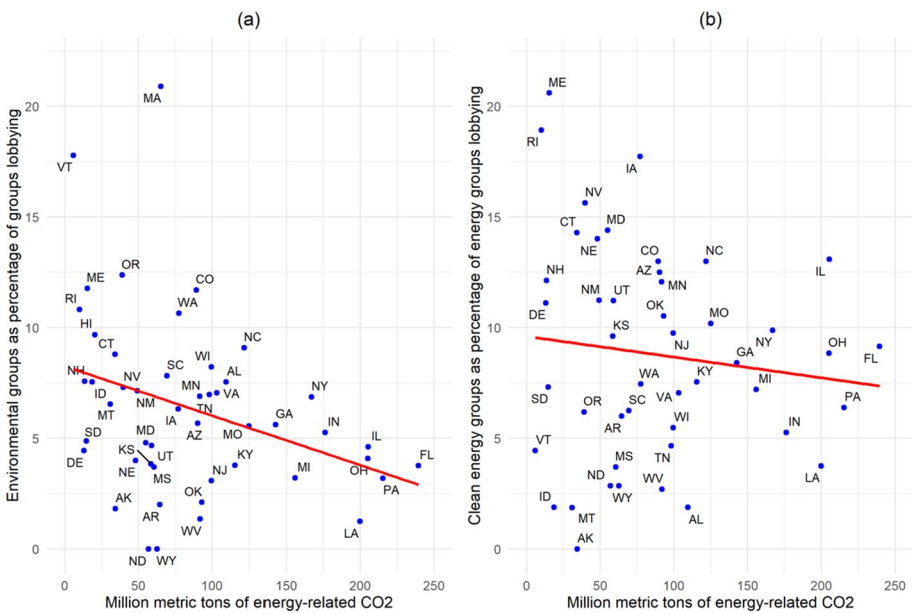
tilted toward the latter at the federal level (Brulle 2018), we demonstrate substantial imbalance also at the state level. Outliers include climate leaders such as Massachusetts, where the share of pro-climate groups among all energy interest groups is over half.

In addition, our data show a very uneven distribution of pro-climate group lobbying across US states and a strong polarization of their distribution along partisan lines. States leaning Democratic—the states that tend to adopt stronger climate policies (Trachtman 2020)—attract many more pro-climate groups than states leaning Republican. At the extreme end, California (D), New York (D), Massachusetts (D), and Minnesota (D) attracted over 30 pro-climate groups—compared to less than 5 in Indiana (R), West Virginia (R), Mississippi (R), Wyoming (R), North Dakota (R), and Alaska (R) (Fig. 1b). Democratic-leaning states also, as demonstrated by Fig. 2, feature greater lobbying from pro-climate groups as a percentage of interests in the energy sector.<sup>1</sup> Pro-climate advocacy

<sup>1</sup> We use Democratic presidential vote share to measure political lean in the main analysis. Results are robust to using composition of state legislatures to measure political lean (see Figure S12).



**Fig. 2** Pro-climate interest group lobbying and political lean. **a** Climate advocacy lobbying as a percentage of energy interests lobbying. **b** Clean energy interests lobbying as a percentage of energy interests lobbying. Outlier MA is excluded from **b**



**Fig. 3** Pro-climate interest group lobbying and carbon emissions. **a** Climate advocacy lobbying as a percentage of energy interests lobbying. **b** Clean energy interests lobbying as a percentage of energy interests lobbying. Outliers CA and TX are excluded, and outlier MA is excluded from **b**

across US states thus reflects a logic of political opportunity: advocates are concentrated where voters and governments in power are more favorable to climate policy.

We identify some important deviations from this overall pattern: Republican-leaning states with relatively high shares of clean energy interests (Fig. 2b). States like Iowa, Nebraska, Kansas, Oklahoma, and Utah—all states rich in renewable energy resources—have greater representation of clean energy interests than their politics would suggest. Here, the economic opportunity of renewable energy development creates and attracts clean energy interests, to some extent narrowing the pro-climate advocacy gap in Republican-leaning states.<sup>2</sup>

Finally, our data demonstrate lower levels of pro-climate interest group presence—particularly from environmental groups—in states with greater levels of emissions. In theory, environmental groups aiming to reduce overall emissions might focus lobbying efforts on shifting policy in states with greater emissions to reduce. However, as demonstrated by Fig. 3, we find that the representation of environmental interests is *negatively* associated with total state-level emissions (and also per capita emissions). By contrast, the representation of clean energy interests—driven to a significant degree by renewable energy resources—is similar across high-emissions and low-emissions states.

## 4 Discussion

Our finding that climate advocacy in the USA concentrates where the political opportunity is greatest—rather than where the emissions are greatest—raises important questions for research and political strategy. Future research needs to expand on our initial foray into the systematic study of climate advocacy across US states in several ways. It needs to establish time series of climate advocacy, including both pro-climate and anti-climate activities. Work on the activity of public sector unions across US states and cities offers methodological avenues to advance the systematic understanding of climate advocacy, including the use of surveys (Moe 2011; Anzia 2022). In addition, research needs to establish the distribution of climate mass mobilization through movements across US states, next to elite advocacy. Climate mass mobilization is a relatively new phenomenon in the history of US climate politics (Fisher and Nasrin 2021), but it may be an important early stage of mobilization that is followed by greater presence of climate advocates.

Our findings have some initial implications for political strategy. While the logic of political opportunity seems rational in a short to medium term, it is unclear if this is a sufficient long-term advocacy strategy for deep decarbonization of the USA. Per capita emissions are generally higher in Republican-leaning areas. In addition, in the absence of climate advocacy in Republican states, policymaker attitudes may further polarize. This would present continued challenges to future state and federal climate policy.

This raises the question of whether environmental groups might focus more resources on establishing a greater presence in Republican-leaning states, even if their engagement does not produce policy victories in the short term. Indeed, almost half of the environmental groups in the sample were affiliated with national organizations or themselves were national organizations lobbying in state politics, suggesting resources could be shifted to

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<sup>2</sup> However, the relationship between political lean and lobbying from clean energy interests as a percentage of pro-climate interests is null (see Figure S11).

other locales. The promise of this strategy, though, is tempered by the limited influence that climate advocacy by environmental groups seems to have in Republican-leaning states, given deep-seated ideological resistance to climate science and policy (Egan and Mullin 2017). The strategy also faces clear trade-offs for environmental groups between continuing to invest in more certain near-term victories in Democratic states and uncertain long-term policy change in Republican states. Lastly, there are limits to simply change the distribution of existing lobbying groups, given their stickiness (Drutman 2015). Closing the advocacy gap may thus largely hinge on creating new advocates.

The growth of clean energy interests in renewable-resource rich states represents an alternative avenue toward strengthening climate advocacy in Republican-leaning areas and developing a more even distribution of climate advocacy across US states (Meckling 2019). Indeed, clean energy opportunities have at times mobilized both voters and interest groups in Republican-leaning states (Stokes 2020). This comes, however, with the potential caveat that clean energy interests are special climate advocates. They often mobilize for technology-specific support policies, but their mobilization for overarching climate goals and economy-wide policies is more tenuous. In addition, clean energy growth has remained slow in some Republican-leaning areas, particularly in the Southeast, that lack supportive state policy environments.

Indeed, growing clean energy interests does not hinge on renewable energy resources alone—it also depends on public policies and investment (Meckling et al. 2015). In the current context, climate-related investments under the Biden administration's climate investment policies offer an important opportunity. The distribution of these investments across US states will depend on many technical and economic questions and constraints of decarbonization. But policymakers may also want to leverage them as a way to shift the landscape of climate advocacy in the medium to long-run by creating and growing clean energy interests. In times of ideological polarization, the development of economic advocacy groups represents a pragmatic approach to strengthening climate advocacy in laggard states and to begin to narrow the climate advocacy gap.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s10584-022-03381-4>.

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**Author contribution** S.T. and J.M. designed the study and guided data collection. S.T. analyzed the data, with guidance from J.M.. S.T. and J.M. wrote the article.

**Data availability** The datasets generated and/or analyzed during the current study are available in the Harvard Dataverse repository (<https://doi.org/10.7910/DVN/X7CWFQ>).

## Declarations

**Competing interests** The authors declare no competing interests.

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