Transformative Adaptation and Policy Reform: Climate Change Action in the United States

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On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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Introduction

In the late 20th century, reconstructions of the northern hemisphere's temperature revealed an unprecedented deviation in recent temperatures that contradicted a millennium-long cooling trend (Mann et al., 1999). The reconstructions, known today as the infamous hockey stick graph, helped confirm a global consensus that increased CO_2 emissions are attributable to global warming. The findings provoked a global response to the emergency. Since then, many nations have adopted new policies to curtail their carbon emissions in support of climate action.

Yet the response has been sluggish. Among large, high-income countries, the U.S. has lagged conspicuously behind. The Climate Change Performance Index, which assesses a nation's performance in meeting climate action demands, ranked the United States among some of the lowest countries in the CCPI 2024 at 57th out of 67 countries (CCPI, 2024). The poor response from the U.S. can be attributed to the tug-of-war battle between interest groups competing to influence the federal energy policy.

In the absence of strong federal leadership, states and localities responded on their own (Byrne et al., 2007). They were responding to pressure from environmental advocacies. Trade associations reacted by organizing astroturfed pseudo-movements to serve the material interest of their member companies, most of them in the fossil fuel industry. With the economic costs of delayed climate action expected to increase rapidly, advocates of climate change action need to operate efficiently to ensure success of their agendas (Goulder, 2020). Advocacies must pursue transformative federal policy change to foster effective climate action.

Review of Research

Previous research on the status of climate action in the U.S. has examined why current methods fall behind global progress and what changes are needed across connected levels of society to accelerate advancements. Shi and Moser (2021) take an in depth look into recent U.S. trends in climate action, proposing that a collective and coherent response is needed to drive transformative adaptation. Transformative adaptation, in concern to climate change action, refers to changing political and economic paradigms to redress the underlying drivers of societal vulnerability to climate change (Shi & Moser, 2021).

To guide their research, Shi and Moser (2021) assessed how public, private, and civil sectors influence changes in policy, practice, and resource allocation by asking the following questions:

> What power dynamics and relationships do these actions reflect? What mindsets and values inform these relationships and power dynamics. Who and what is valued more or less? What deeply held assumptions underlie adaptation decision making processes, and what prevents them from changing? (Shi & Moser, 2021)

In this paper, these inquiries serve as inspiration for guiding research that examines how interest groups leverage their resources and networks to advance their agendas.

Shi and Moser (2021) identify three trends that are useful in characterizing the current struggle in the U.S. for transformative climate adaptation. First is the federal government's restraint and retreat from climate adaptation policy. This can be attributed towards increasing partisanship restricting congress's ability to pass new bills on climate action. Legislation that does make it past the bipartisan barrier is viewed by Shi and Moser (2021) as only "climate proofing" our infrastructure, further driving "inequitable and unsustainable development". Work

presented in this paper will further demonstrate how advocates are working to decrease partisanship over the issue of climate change and how opposers aim to further polarize this issue.

The second trend Shi and Moser (2021) identify is increasing pressure for the reformation of industry standards. This has caused concern over the incorporation of climate conscious policies into benchmarks, requirements, and guidelines for organizations. In addition, the current volatility of federal climate action has left state and local organizations with the fear of navigating "uncharted legal waters". This paper will explore how interest groups communicate these concerns to shift policy in favor of maintaining stable success during the clean energy transition.

The last trend Shi and Moser (2021) identify is the mobilization of academic and community-based advocacies. These advocacies stemmed from civil society due to lagging federal leadership and therefore, aim to transform the type of mainstream adaptation that overlooks marginalized communities. The result of such adaptation efforts at the local scale gives way to grassroots advocacies. Research in this paper identifies how these grassroots movements build their network to gain decision making power.

The Prospects of a Carbon Tax

Interest groups in favor of transformative climate adaptation need methods that force federal leadership to act quickly while simultaneously being conscious about social and economic stability. A carbon tax, where emitters are taxed based on per ton of emissions, is one of the strongest prospects for initiating federal climate action (Morris, 2022). Carbon tax initiatives have been proposed as an efficient method to rapidly curtail carbon emissions while simultaneously supporting the economy. This not only advances climate action at the federal

level, but aims to provide long term economic stability for those expected to be most affected by the consequences of global warming.

A prominent advocate for a carbon tax is the Citizens' Climate Lobby (CCL), an advocacy that utilizes a large network of volunteers to lobby Congress. They argue that swift implementation of a carbon tax not only puts the U.S. on track to meet the globe's 1.5ºC benchmark, but also brings health benefits and economic growth (CCL, 2024). The CCL calls on research from Burrows (2021) that suggests deaths related to health issues facilitated by fossil fuel pollution are "significantly higher than previous research suggested". For instance, in 2018 alone, "exposure to particulate matter from fossil fuel emissions accounted for 18 percent of total global deaths…" (Burrows, 2021). The CCL hopes that using resources that quantify the negative health impacts of fossil fuel emissions will send a message to policy makers.

To address the concerns of inflation due to a carbon tax, the CCL proposes that a carbon tax should be entirely redistributed to Americans as a dividend (CCL, 2024). Such a dividend will support Americans in affording the increased cost of products. In response to members of congress concerned by how their constituents would fair under the carbon tax, the CCL released data suggesting "monthly carbon carbon cash back payments are enough to essentially cover the increased costs of 85% of american households, including 95% of the least wealthy 60% of Americans" (Ummel, 2020). The CCL forecasts that by 2050, a carbon tax could save Americans over $800 billion each year in economic losses caused by the increased costs of climate change (CCL, 2024). However, despite the apparent support from Americans, along with the projected health and economic benefits, a carbon tax appears to reach a roadblock in Congress.

Opposition groups in the form of trade associations and advocacies hinder carbon tax initiatives to serve their material interests by purporting ideas of economic disparity. One such

group is the American Energy Alliance (AEA), an advocacy that aims to provide education and mobilize citizens in solving energy and environmental problems (AEA, n.d.). AEA has a history of attacking policies supporting clean energy incentives and promoting Republican agendas on energy policy. In a 2021 press release, AEA supported a resolution that opposed a carbon tax, claiming that "a tax on energy is a tax on all American families, but hits the poor, seniors, and people on fixed incomes the hardest" (AEA, 2021). Based on the CCL data presented by Ummel (2020), the dividend resulting from a carbon tax would benefit the groups mentioned by AEA the most. In the lowest quintile of households based on spending, 96% would gain a surplus of cash to spend with no restriction due to the dividend (Ummel, 2020). In fact, only the wealthiest quintile of American households would be expected to be hindered by the economic effects of a carbon tax (Ummel, 2020).

The AEA has a long history of getting its funding from Koch Industries, a privately owned oil and gas conglomerate with an established presence in rightwing groups and lobbying activities in Washington D.C. (DeSmog, n.d.). In addition, former Koch lobbyists have held leadership positions within the AEA and have financially supported AEA ad campaigns. Rather than supporting the interests of concerned Americans, the AEA and similar groups serve the interests of their oil and gas benefactors, who stand to lose the most from climate action policies.

Political Polarization and Corporate Influence of Climate Action

The struggle for advocates to successfully have their policies adapted, as exemplified by the carbon tax initiative, can be attributed to political polarization fueled by opposition groups. Opposition groups like AEA, have the support of the large wealth and political power of utilities and fossil fuels companies. Advocates in favor of climate action are often less established and

less well funded. As a result, these advocates find themselves lacking the power necessary to take on their opposers and get politicians on their side.

Large, established corporations, such as Koch Industries, have strengthened political polarization around the issue of clean energy to maintain the bipartisan roadblock preventing climate action at the federal level. This was exemplified by a conflict in Kansas between Koch Industries and wind energy advocates. The wind energy advocates sought the support from Republicans who praised the benefits of wind power on the Kansas economy, but ultimately found that such Republicans feared moving away from the support of Koch (Stokes, 2020a, 2020b). In general, it was well known by Republicans that those who resisted the agendas of the Koch and the fossil fuel industry found themselves threatened by campaign funding withdrawals and in some cases, replaced by well-resourced political opponents during primaries (Stokes, 2020b). In addition to swaying politicians in support of their clean energy stance, Koch Industries funds many opposition groups to serve their interests and spread their values in the political community. Koch industries "donated more than $145 million to a network of 90 think tanks and advocacy groups from 1997 through 2018 to disparage climate science and block efforts to address climate change" (Negin, 2022). In addition, it was reported that Koch gave over $38 million to lobbying efforts during the 2018 and 2020 election cycles (Negin, 2022).

When opposition groups cannot promote their agendas through excessive wealth, they instead create a sense of false public support through astroturfing. Astroturfing is when an organization pretends to be a grassroots movement through dishonestly generating a strong sense of community approval (Stokes, 2020a). There are varying levels of astroturfing opposition groups do, some create the illusion of benefitting public interests through their websites while others strive to generate public concern throughout the community. Trade associations such as

American Petroleum Institute (API), astroturf by purporting ideas associated with clean energy movements to serve material interest. In an October 2023 press release, API opposed oil restrictions in the Gulf of Mexico by arguing such restrictions would hinder emissions goals and compromise U.S. energy security (API, 2023). The API also argued that the restrictions on oil vessels in the Gulf of Mexico would negatively impact conservation efforts and fail to comply with the Endangered Species Act. These press releases and others create a false narrative that API benefits the interests of wildlife and conservative movements rather than the oil corporations hurt by the vessel restrictions.

In 2017, a more extreme case was seen in New Orleans when city hall held a public hearing on electric service provider Entergy's request to build a new natural gas burning power plant. At the hearing, 50 people in matching bright orange shirts attended to voice the community's overwhelming support for the new power plant (Stein, 2018). However, reporters revealed that most if not all the supporters were actors paid under the table by Entergy. Some had received $60 to just attend the hearing while others were paid $200 for specific speaking roles (Stokes, 2018). The actors also claimed the job was promoted through Facebook disguised as a three hour acting gig. When the actors arrived, they were asked to sign non-disclosure agreements, instructed to avoid the media, and told not to tell anyone they were paid (Stokes, 2018).

While the Entergy hearing was an extreme case of astroturfing, journalistic efforts were able to uncover Entergy's scheme and provide public awareness on astroturf movements. Journalism has potential to be an effective method advocates of climate action are using to raise awareness to politicians about astroturf movements. DeSmog is an investigative journalism group aimed at exposing misinformation and astroturfing campaigns on climate change. They

have published databases on individuals and corporations known to spread climate disinformation. In fact, they have a special database just for identifying organizations linked to Koch Industries. To no surprise, prominent astroturfing groups, such as the American Energy Alliance, American Petroleum Institute, Americans for Prosperity, and the Heritage Foundation are found on the database (DeSmog, 2024). Astroturf movements make use of politicians' concern for public outrage. Therefore, to improve the success rate of climate adaptation, advocates need to develop methods that disrupt and expose astroturfing movements to mitigate political polarization on climate action.

Poor Inclusivity and Foresight In Climate Policy

In anticipation of the clean energy transition, new legal and regulatory frameworks are being proposed to prepare the economy in transitioning from fossil fuels. An expected impact of these reforms is the transformation of resource flows across all levels of society. Advocates and opposition groups appear to express a shared concern for the federal government's inability to engage in multilevel coordination and inclusion. As a result, interest groups fear that federal policy will result in restricted resource flows leaving their stakeholders neglected.

A prominent coalition extending the reach of local grassroots movements is the Climate Justice Alliance (CJA). The CJA advocates for their vision of a "Just Transition", where new clean energy policy puts an emphasis on regenerating and empowering communities hindered and ignored by the current climate agendas (CJA, n.d.). One of their efforts to direct federal spending towards frontline communities is through its UNITE-EJ initiative. In late 2023, the CJA via UNITE-EJ successfully received $50 million from the Environmental Protection Agency (EPA) for the CJA's constituent environmental justice groups (CJA, 2023). Providing

these communities with access to EPA grants shows how the CJA can inspire co-governance between federal institutions and communities impacted most by the climate crisis. By organizing many community based groups into one voice, the CJA serves as a role model for how advocates for clean energy can gain the support of political institutions to the same extent as well established trade associations.

Manufacturers, investors, and other market participants have raised concern with the federal government over how new industry frameworks affect profitability and resilience during the switch to clean energy. The Securities and Exchange Commission (SEC) has recently been met with conflict from trade associations over its goal to require companies to disclose Scope 3 emissions information publicly. Scope 3 emissions occur from a company's upstream and downstream activities and goods (Thornton, 2021). They are often the largest category of emissions and therefore pose a hidden risk to investors conscious about the risks associated with a company's greenhouse gas emissions. In addition to helping investors make informed decisions, Scope 3 emissions reporting is a tool intended to guide organizations to improve their resource efficiency and optimize the sustainability of their supply chains (Thornton, 2021). Manufacturers, who possess large amounts of Scope 3 emissions, are especially concerned about the costs and logistics associated with the SEC's mandate. The National Association of Manufacturers (NAM), has criticized the SEC mandate as "inflexible and infeasible" for manufacturers who rely on a well established and complex supply chain (NAM, 2024). NAM argues that the cost of compliance resulting from Scope 3 emissions is unfair for certain market scopes and sizes. They especially draw attention to small and family-owned businesses, who simply do not have the resources to adhere to climate compliant industry standards (NAM, 2024). Since the SEC mandate has been proposed, NAM has been successful at utilizing its large

network of lobbyists to express these concerns, resulting in the SEC reworking its emissions mandate. Although NAM has a history of hindering climate action, their concern for fair and just inclusion of its constituents is a shared theme among climate activists like the CJA.

Another anticipated impact of the clean energy transition is the allocation of new energy sources into the nation's electricity grid. American Clean Power (ACP) is a trade association representing a portfolio of clean energy groups. In the past, they have lobbied and petitioned the Federal Energy Regulatory Commission (FERC) to secure the future of its clean energy groups. In August, 2023 ACP petitioned the FERC to hold a technical conference on capacity accreditation. Capacity accreditation is a key factor determining an electricity systems planning and market design (ACP, 2023). Capacity accreditation policies have significant impacts on reliability, cost, fairness, accuracy, and the interaction of state and federal energy policy. As the clean energy deployment continues to grow, ACP worries that current capacity accreditation methods reflect varying regional approaches, placing the reliability of future clean electricity systems at risk (ACP, 2023). Through this petition and others, the ACP hopes to ensure that capacity accreditation techniques achieve clean energy reliability without price discrimination or preference.

Conclusion

Interest groups advocating for increased climate adaptation at the federal level face systemic barriers that empower opposition groups to block climate action policy. These barriers are fueled by the political and financial interests of the fossil fuel industry. By leveraging investigative journalism, activist groups can expose astroturfing schemes fossil fuel corporations use to maintain their agendas and create public awareness. To compete with the political and financial power of opposition groups, activists can persuade and mobilize the public to develop a network of grassroots movements. To drive climate adaptation swiftly, activist groups must recognize their shared interests with other sectors of society to foster alliances for economically sustainable and just climate policy. Through a complex approach incorporating investigative journalism, grassroots mobilization, and strategic collaboration, activist groups can strive to enact better climate change policy at the federal level.

References

ACP (2023, Aug. 22). American Clean Power. *Petition of the American Clean Power Association for Technical Conference on Capacity Accreditation*. https://s3.documentcloud.org/documents/23927204/2023-08-22-acp-capacity-accreditation-petition-final.pdf

AEA (n.d.). American Energy Alliance. About the AEA. https://www.americanenergyalliance.org/about/

API (2023, Aug. 23). American Petroleum Institute. New Analysis Finds Gulf of Mexico Restrictions Diminish Energy Security, Hinder Economic Growth. https://www.api.org/news-policy-and-issues/news/2023/10/05/new-analysis-finds-gom-restrictions-diminish-energy-security-hinder-economic-growth

Byrne, J.; Hughes, K.; Rickerson, W.; and Kurdgelashvili, L. (2007). American policy conflict in the greenhouse: Divergent trends in federal, regional, state, and local green energy and climate change policy. *Energy Policy 35*, 4555-4573. https://doi.org/10.1016/j.enpol.2007.02.028

Burrows, L. (2021, Feb. 9). *Deaths from fossil fuel emissions higher than previously thought.* Harvard John A. Paulson School of Engineering and Applied Sciences. https://seas.harvard.edu/news/2021/02/deaths-fossil-fuel-emissions-higher-previously-thought

CCL (2024). Citizens' Climate Lobby. Why Put a Price on Carbon? https://citizensclimatelobby.org/price-on-carbon/

CCPI (2024). Climate Change Performance Index. CCPI 2024: Ranking and Results. https://ccpi.org/ranking/

CJA (n.d.) Climate Justice Alliance. How We Work: Our Approach and Meta-Strategies. https://climatejusticealliance.org/how-we-work/

CJA (2023, Dec. 20). Climate Justice Alliance. Climate Justice Alliance, Members, and Partners Receive $50 Million Award From EPA to Increase Access to Federal Funds for Environmental Justice Communities. https://climatejusticealliance.org/cja-receives-50-million-thriving-communities/

DeSmog (n.d.). *American Energy Alliance.* Koch vs. Clean. https://www.kochvsclean.com/american-energy-alliance/

DeSmog (2024). Koch Network Database. https://www.desmog.com/koch-network-database/

Goulder, L.H. (2020). Timing Is Everything: How Economist Can Better Address the Urgency of Stronger Climate Policy. *Review of Environmental Economics and Policy 14,* 143-156. https://doi.org/10.1093/reep/rez014

Mann, M.E.; Bradley, R.S.; Hughes, M.K. (1999) Northern Hemisphere Temperatures During the Past Millennium: Inferences, Uncertainties, and Limitations. *Geophysical Research Letters 26 (6),* 759-762. https://doi.org/10.1029/1999GL900070

Morris, J. (2022, Jan. 11). *Carbon Pricing*. MIT Climate Portal. https://climate.mit.edu/explainers/carbon-pricing

NAM (2024, Mar. 6). National Association of Manufacturers. Worst-Case Scenario Avoided, SEC Scales Back Climate Rule in Response to Manufacturers' Concerns. https://nam.org/worst-case-scenario-avoided-sec-scales-back-climate-rule-in-response-to-manufacturers-concerns-30395/

Shi, L.; Moser, S. (2021). Transformative climate adaptation in the United States: Trends and prospects. *Science 372*. https://doi.org/10.1126/science.abc8054

Stokes, L. (2020a, Apr. 28). *How Interest Groups Shape U.S. Clean Energy Policy*. Kleinman Center for Energy Policy. https://kleinmanenergy.upenn.edu/podcast/how-interest-groups-shape-u-s-clean-energy-policy/

Stokes, L. C. (2020b). Retrenchment by a Thousand Cuts: Koch Industries and Allies Drive Polarization on Clean Energy in Kansas. *Short Circuiting Policy: Interest Groups and the Battle Over Clean Energy and Climate Policy in the American States*. (pp. 141-C6.P83). Oxford Academic. https://doi.org/10.1093/oso/9780190074258.003.0006

Thornton, A. (2021, Dec. 13) *Why Companies Should Be Required To Disclose Their Scope 3 Emissions*. Center for American Progress. https://www.americanprogress.org/article/why-companies-should-be-required-to-disclose-their-scope-3-emissions/

Ummel, K. (2020, Aug.). *2020 Household Impact Study: Financial Impact of the Energy innovation and Carbon Dividend Act on U.S. Households.* Citizens' Climate Lobby. https://citizensclimatelobby.org/household-impact-study/