

Written Testimony of

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Committee on Science, Space and Technology
Subcommittee on Investigations and Oversight

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Chairman McCormick, Ranking Member Sykes, and Honorable Members of the Committee,

Thank you for the opportunity to testify before the House Subcommittee on Investigations and Oversight. My name is Ashley Nunes. I am a Senior Research Associate at Harvard Law School and an Associate in the Department of Economics at Harvard College. Prior to this, I was a Research Scientist at the Massachusetts Institute of Technology (MIT), and a Research Staff Member at the Science and Technology Policy Institute (which was established by Congress to inform policy decisions of the White House Office of Science and Technology Policy). I also spent over a decade primarily executing policy analysis for the Department of Transportation and the Department of Defense.

My work prior to and during my tenure at Harvard scrutinizes the economic effectiveness of public policies. I am particularly interested in understanding and documenting what the unintended consequences of climate and energy policies may be. This interest is motivated by a simple economic reality: there's no such thing as a free lunch. Every public policy has a cost even if the policy may appear to be cost free. Over two decades, my colleagues and I have enumerated these costs, highlighting the critical mineral challenges associated with the clean energy transition¹, the negative impact that vehicle electrification may have on emissions reductions efforts², and the lack of climate specific benefits that are realized from legislation explicitly aimed at addressing climate change³.

Today, I will speak to these issues as they relate to the Justice40 initiative. As this committee is aware, under Executive Order 14008 (the Climate Crisis Executive Order), former President Joseph Biden set a goal that 40 percent of overall federal benefits - specifically those associated with clean energy, climate, housing, workforce development, and other programs – be directed towards disadvantaged communities (DAC)⁴. The 'Justice40 Initiative' was a critical part of the Administration's so-called 'advancement' of environmental and economic justice and reflected the President's belief that his actions would help secure an equitable economic future for all Americans⁵. According to the White House, the initiative was based on, "extensive engagement and feedback from environmental justice communities during the president's campaign"⁶.

That inequities exist across America is indisputable. According to data from the Census Bureau, there were over 36 million people living in poverty across the United States in 2023. Some of these individuals experience greater exposure to harmful vehicle emissions, some are more likely to be burdened by high housing costs, while others spend a larger portion of their earnings on energy expenditures⁷. But these inequities are hardly unique to the United States. Similar challenges confront numerous other developed

¹ Woodley, Lucas, et al. "Climate Impacts of Critical Mineral Supply Chain Bottlenecks for Electric Vehicle Deployment." *Nature Communications*, vol. 15, no. 1, 9 Aug. 2024. *Nature*, <https://doi.org/10.1038/s41467-024-51152-9>.

² Nunes, Ashley, et al. "Re-thinking Procurement Incentives for Electric Vehicles to Achieve Net-zero Emissions." *Nature Sustainability*, vol. 5, no. 6, 4 Apr. 2022, pp. 527-32. *Nature*, <https://doi.org/10.1038/s41893-022-00862-3>.

³ Loris, Nick, et al. "Cost-effectiveness of Climate Regulations Depends on Non-climate Benefits." *Arxiv*, 2025.

⁴ "Tackling the Climate Crisis at Home and Abroad." *Federal Register*, 1 Feb. 2021, www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad. Accessed 17 June 2025

⁵ "Justice40." The White House, 2024, [bidenwhitehouse.archives.gov/environmentaljustice/justice40/](https://www.bidenwhitehouse.archives.gov/environmentaljustice/justice40/). Accessed 16 June 2025.

⁶ Green, Miranda. "Can Biden's Justice40 plan deliver a fairer environment for people of color?" *The Guardian*, 2 June 2021. *The Guardian*, www.theguardian.com/us-news/2021/jun/02/biden-justice40-plan-environmental-justice. Accessed 16 June 2025.

⁷ Popovich, Natalie, et al. "Identifying Disadvantaged Communities in the United States: An Energy-oriented Mapping Tool That Aggregates Environmental and Socioeconomic Burdens." *Energy Research & Social Science*, vol. 109, Mar. 2024, p. 103391. *ScienceDirect*, <https://doi.org/10.1016/j.erss.2023.103391>.

economies. What is unique to the United States is the arbitrary – and sometimes concerning – way in which the Biden administration sought to redirect federal assistance programs to disadvantaged communities.

As I detail below, a review of Biden-era documents raises questions about the viability of the Justice40 initiative and the ability of agencies to implement the initiative.

DAC and Categories of Burden

The Biden administration defines disadvantaged communities as those that, “have been historically marginalized and overburdened by pollution and underinvestment in housing, transportation, water and wastewater infrastructure, and health care⁸.” In November 2022, the White House Council on Environmental Quality (CEQ) released the Climate and Economic Justice Screening Tool (CEJST) tool, which assists federal agencies in identifying these communities. Generally, a community is considered disadvantaged if households in that community a) earn less than 200 percent of the federal poverty level, and b) meet the criterion for at least one category of burden (of which there are several)⁹.

Some of these (sub)categories may – from the vantage point of the previous Administration – be defensible. For example, the ‘Projected wildfire risk’ category reflects evidence that climate change creates warmer, drier conditions which can amplify wildfire risk. However, harm caused by wildfires are not intrinsically tied to climate change as non-climate factors are more prominent drivers of wildfire risk¹⁰. Humans are responsible for starting most wildfires, and the wildfires started by humans spread faster, are more destructive¹¹, and impact an area far greater than that affected by lightning fires (which are linked to climate change (although the nature of that link is debated))¹². Isolating climate-change driven wildfires as one criterion for dispensing federal benefits ignores the preeminent driver of wildfires themselves.

A larger concern is that the Biden Administration failed to demonstrate, 1) whether the benefits being proposed were efficacious, and 2) whether the benefits being proposed were cost-effective. The latter point is particularly relevant given the federal government’s current fiscal condition. Government debt currently accounts for over 125 percent of nominal gross domestic product and although the United States has carried debt since its inception, the accumulation of this debt has risen sharply since the mid 2000s¹³. It costs the federal government over \$700 billion to maintain that debt which represents over 15 percent of the total federal spending in fiscal year 2025. Put simply, if Washington is going to spend

⁸ “Tackling the Climate Crisis at Home and Abroad.” Federal Register, 1 Feb. 2021, www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad. Accessed 17 June 2025.

⁹ Climate and Economic Justice Screening Tool.” Climate and Economic Justice Screening Tool, edgi.gov/data-archiving.github.io/j40-cejst-2/en/#3/33.47/-97.5. Accessed 17 June 2025.

¹⁰ Joosse, Tess. “Human-sparked wildfires are more destructive than those caused by nature.” Science, 8 Dec. 2020. Science, www.science.org/content/article/human-sparked-wildfires-are-more-destructive-those-caused-nature. Accessed 17 June 2025.

¹¹ Mietkiewicz, Nathan, et al. “In the Line of Fire: Consequences of Human-Ignited Wildfires to Homes in the U.S. (1992–2015).” Fire, vol. 3, no. 3, 7 Sept. 2020, p. 50. MDPI, <https://doi.org/10.3390/fire3030050>.

¹² Hantson, Stijn, et al. “NH010-07 Human-ignited fires spread faster and kill more trees in Californian forests.” American Geophysical Union, 8 Dec. 2020. American Geophysical Union, agu.confex.com/agu/fm20/meetingapp.cgi/Paper/765573.

¹³ “What is the national debt?” Fiscal Data, fiscaldata.treasury.gov/americas-finance-guide/national-debt/. Accessed 19 June 2025.

hard earned tax dollars on programs like Justice40, it is crucial that such spending yield maximal returns for the taxpayer. As I elaborate upon below, the structure of Justice40 suggests otherwise.

While CEJST provides a standardized framework for targeting federal resources, its structure, criteria for qualification, and lack of agency specific guidance raise important questions about the effectiveness of the program. The program pays lip service to (or neglects entirely) important nuances inherent to addressing complex problems which subsequently impacts the program's ability to guide cost-effective public investment. To illustrate my point, I use the CEJST tool to identify states and communities within those states that meet the program's criterion for 'category of burden.' For my testimony, I focus on three such categories: vehicle emissions, housing burden, and energy burden¹⁴.

Vehicle Emissions

One prominent focus of the Biden administration – and consequently Justice40 - was vehicle emissions. This focus reflects longstanding concerns over internal combustion engine vehicle-related pollution. CEJST encompasses this concern by accounting for inhalable particulate matter, amount of diesel exhaust, and the number of vehicles on major roads (all of which represent proxies for vehicle emissions). The CEJST identifies over 6,894 communities across 46 states that meet the burden threshold for vehicle emissions and warrant action under Justice40.

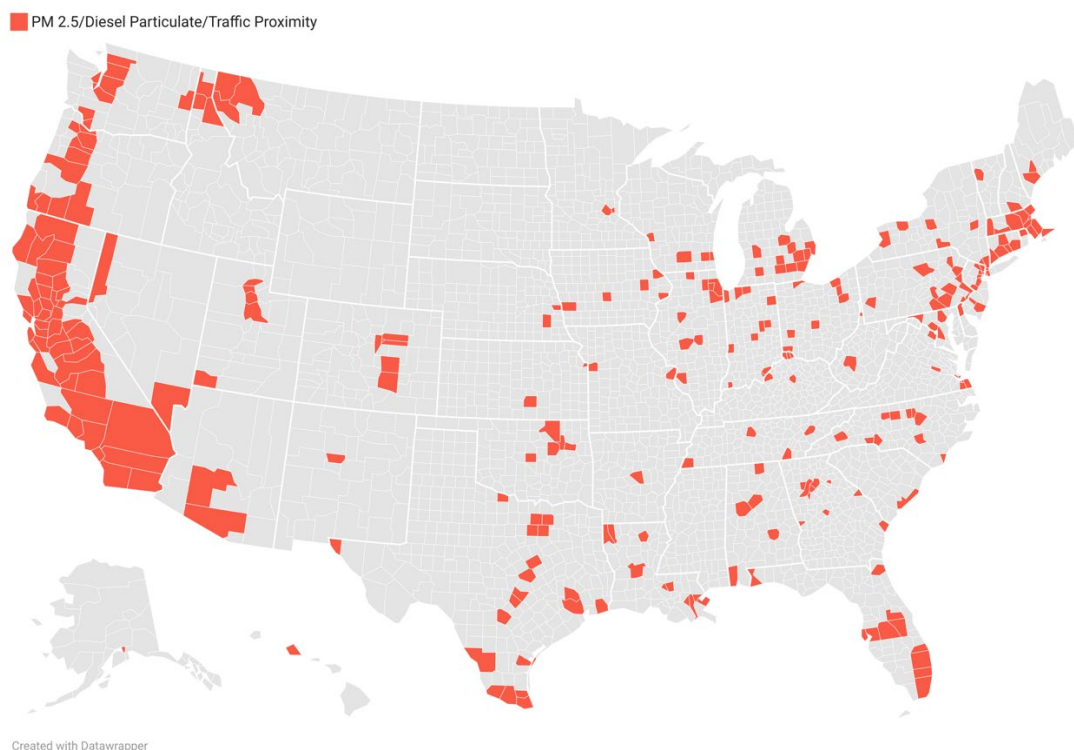


Figure 1: Distribution of DACs affected by PM2.5 in the air, diesel particulate matter exposure, and/or traffic proximity and volume

¹⁴ I do so as these categories provide clear examples of instances where the policy solution embraced by the Biden Administration was, 1) ineffective or, 2) unclear as no solution was proposed at all. The latter point is particularly important as it delegated the responsibility for ensuring 'justice' directly to agencies.

Focus on vehicle emissions reflects their unique contribution^{15,16}. The transportation sector is the largest greenhouse gas (GHG) contributor and emissions from the transportation sector have steadily increased since the late 1990s despite significant government spending on programs that promote emissions reductions^{17,18}. The solution proposed by President Biden as well as some state governments was to – by regulatory fiat – effectively mandate electrification. By combining statewide bans on the sale of internal combustion engine vehicles (ICEV) with stringent tailpipe emissions standards finalized by the Environmental Protection Agency¹⁹, the President sought to aggressively increase electric vehicle (EV) adoption.

However, electrification is problematic for low-income households because these households, a) cannot afford EVs, despite generous federal and state incentives, and b) live in dense urban housing which limits access to dedicated vehicle recharging infrastructure. The latter point is particularly important as – consistent with the framework of Justice40 – over \$2.5 billion was allocated for building EV charging infrastructure in low- and moderate-income communities²⁰. The Charging and Fueling Infrastructure Discretionary Grant Program was marketed as a way to ensure, “equitable and widespread EV adoption takes hold²¹.” But it is far to impractical – and far too costly – to ensure that every household in these communities can access dedicated charging facilities. The consequence is low-income households queuing up to recharge their vehicles compared to wealthier households who do so from the comfort of their homes (owing to having private garages). In this way, adherence to Justice40 framework exacerbates – not lessens – the nationwide inequities.

Moreover, even if charging facilities were ubiquitous, electrification is hardly a silver bullet for tempering emissions. Although EVs can offer – particularly when reliant on renewable energy – a more favorable emissions profile, the intermittency of renewable energy (particularly solar and wind power) makes reliance on alternative energy sources (i.e., fossil fuels), necessary. So do range concerns inherent to EV battery technology which invariably explains why the majority of EVs are purchased as secondary or tertiary vehicles^{22,23}. Because households put fewer miles on secondary (and tertiary) vehicles, EVs

¹⁵ U.S. Department of Transportation. “Climate Action.” *U.S. Department of Transportation*, 13 Jan. 2023, <https://www.transportation.gov/priorities/climate-and-sustainability/climate-action>.

¹⁶ United States Environmental Protection Agency. “Carbon Pollution from Transportation.” *United States Environmental Protection Agency*, 19 May 2022, <https://www.epa.gov/transportation-air-pollution-and-climate-change/carbon-pollution-transportation>.

¹⁷ Woodley, Lucas, Vasco Santos, and Ashley Nunes. “Which state is the cleanest of them all? Pricing long run heterogeneity in carbon abatement costs across America.” *Journal of Cleaner Production*. no. 467 (2024): 142885. <https://doi.org/10.1016/j.jclepro.2024.142885>.

¹⁸ United States Environmental Protection Agency. “Sources of Greenhouse Gas Emissions.” *United States Environmental Protection Agency*, 18 Apr. 2023, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>.

¹⁹ “Biden-Harris Administration Proposes Strongest-Ever Pollution Standards for Cars and Trucks to Accelerate Transition to a Clean-Transportation Future.” *EPA*, Environmental Protection Agency, 12 Apr. 2023, www.epa.gov/newsreleases/biden-harris-administration-proposes-strongest-ever-pollution-standards-cars-and-trucks

²⁰ Khalil, Ashraf. \$2.5B in Grants for EV Chargers Aim at Underserved US Areas, *AP News*, 15 Mar. 2023, www.apnews.com/article/electric-vehicles-charging-stations-biden-environment-dec5ff2374c4006303d11875291803c9

²¹ “Biden-Harris Administration Opens Applications for First Round of \$2.5 Billion Program to Build EV Charging in Communities & Neighborhoods Nationwide.”, U.S. Department of Transportation Federal Highway Administration, 14 Mar. 2023, www.highways.dot.gov/newsroom/biden-harris-administration-opens-applications-first-round-25-billion-program-build-ev-charging-in-communities-and-neighborhoods-nationwide

²² Davis, Lucas W. “Electric Vehicles in Multi-Vehicle Households.” *Applied Economics Letters*, 1 June 2022, pp. 1–4., <https://doi.org/10.1080/13504851.2022.2083563>

²³ Xing, Jianwei, et al. “What Does an Electric Vehicle Replace?” *Journal of Environmental Economics and Management*, vol. 107, May 2021, p. 102432., <https://doi.org/10.1016/j.jeem.2021.102432>

must stay on the road for upwards of at least 10 years to deliver an emissions benefit (compared to gasoline vehicles). There is little evidence this is happening today.

What is clear is that EV adoption comes at high cost to the taxpayer. This is particularly true of California which has a sizable emissions footprint, has invested heavily in electrification but received – in return for its investment – marginal emissions reductions (see Appendix: Table 1)²⁴. These efforts detract from more-cost effective pathways that maximize emissions reductions per federal dollar spent²⁵.

Housing Burden

Housing cost burden, as defined by CEJST, is the “share of households that are both earning less than 80 percent of Housing and Urban Development’s Area Median Family Income and are spending more than 30 percent of their income on housing costs.” Put simply, this category includes households whose earnings are disproportionately low but whose expenditure on housing costs is disproportionately high (as defined by the CEJST). The CEJST identifies 6,480 such communities across all 50 states (see Figure 2 for an overview of where these communities are located).

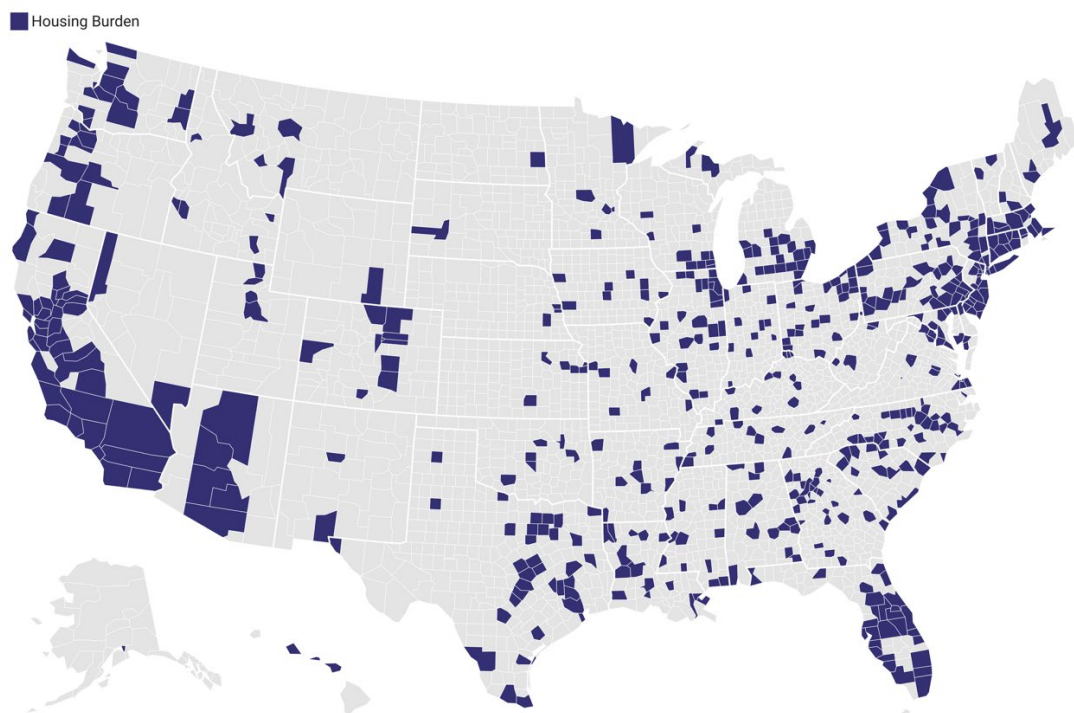


Figure 2: Distribution of DACs affected by housing burden

Housing costs have – in recent years – seen significant increases. This is as true in coastal markets as it is in metro areas long considered to be more affordable alternatives²⁶. A common solution is to provide

²⁴ Asimow, Naomi G., et al. "Sustained Reductions of Bay Area CO2 Emissions 2018–2022." *Environmental Science and Technology*, vol. 58, no. 15, 4 Apr. 2024, pp. 6586–94. ACS Publications, <https://doi.org/10.1021/acs.est.3c09642>.

²⁵ Woodley, Lucas, Philip Rossetti, and Ashley Nunes. "Targeted electric vehicle subsidies facilitate efficient abatement cost outcomes." *Sustainable Cities and Society*, no. 96 (2023): 104627. <https://doi.org/10.1016/j.scs.2023.104627>.

²⁶ Eberly, Janice C., et al. "What is driving up housing costs across the US?" *Brookings Institution*, 15 May 2025, www.brookings.edu/articles/what-is-driving-up-housing-costs-across-the-us/. Accessed 20 June 2025.

income support to households burdened by high housing cost²⁷. But here too nuance matters. Consider two census tracts that show housing cost burden. The first located in Tarrant County, Texas, and the second, Jefferson County, New York. Under the Justice40 initiative, both communities qualify for federal benefits. But outright allocation of benefits neglects nuances between these tracts that better explain why high housing costs may be incurred. Of particular interest is overcrowding, that is, cases where there is more than one occupant per room, regardless of owner or renter status.

For example, a tract where more households are overcrowded – such as those in Tarrant County (12 percent) – likely faces a housing supply crisis, as multiple families are forced to live together in insufficient space (see Appendix Table 2a). These areas often include immigrant and multigenerational families. Addressing the needs of these families require policies that increase the stock of larger (and/or more) units. In contrast, a tract where overcrowding is low – such as Jefferson County (0 percent) – but rent still consumes more than 30 percent of income may indicate an affordability gap among fixed-income seniors, low-wage renters, or individuals living alone (see Appendix Table 2b). Here, the issue lies more in income levels than housing supply, and appropriate policies may include rental subsidies, senior housing programs, or expanded income support. The structure of Justice40 provides little accommodation of these nuances resulting in economically inefficient policies (e.g. the blanket allocation of resources to ‘build more houses’).

Energy Burden

Energy burden, as defined by the CEJST, is the “average annual energy costs divided by household income” above the 90th percentile. Broadly, this definition encompasses households who have high energy costs relative to their income. High energy burden threatens a household’s ability to pay for energy, and force households to choose between paying energy bills and buying food, medicine, or other essentials²⁸. The CEJST identifies 6,140 such communities across all 50 states (see Figure 3 for an overview of where these communities are located).

²⁷ Daly, Lew. Justice40 and the Federal Budget: Challenges of Scale and Implementation, Roosevelt Institute, Apr. 2022, www.rooseveltinstitute.org/wp-content/uploads/2022/04/RI_Justice-40-Federal-Budget_Report_202204.pdf.

²⁸ *Low-Income Household Energy Burden Varies Among States — Efficiency Can Help In All of Them*. U.S. Department of Energy, Dec. 2018, www.energy.gov/sites/prod/files/2019/01/f58/WIP-Energy-Burden_final.pdf. Accessed 21 June 2025.

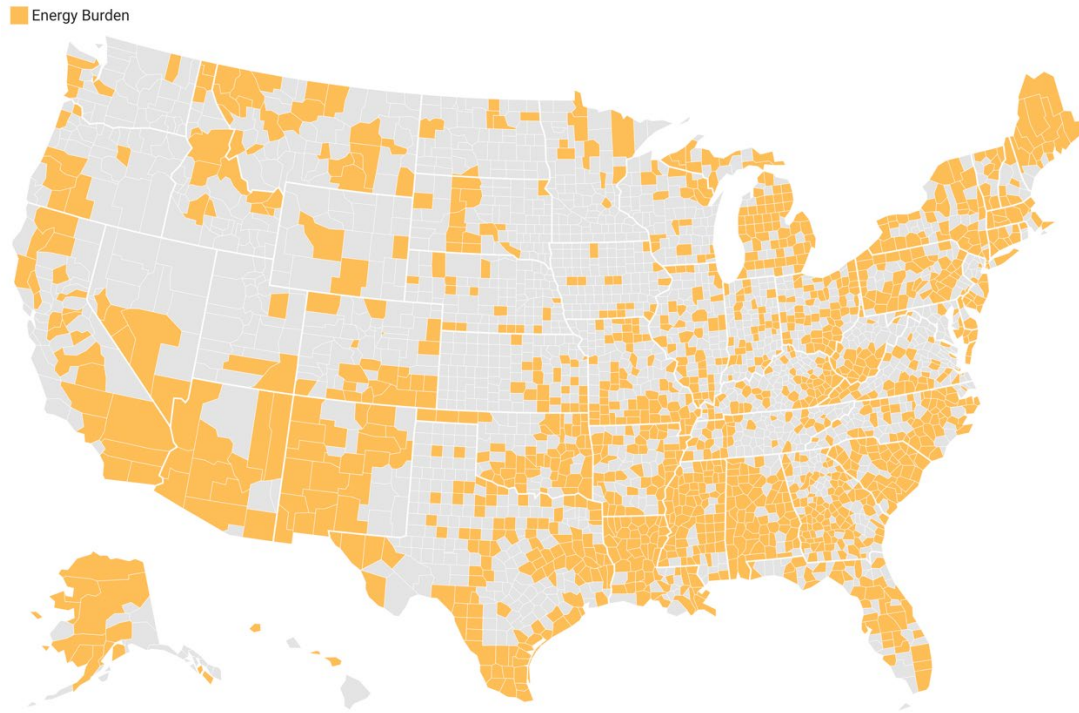


Figure 3: Distribution of DACs affected by energy burden

High energy costs admittedly impact household spending and welfare. This is particularly true in southern states like Alabama, Arkansas, Georgia, Mississippi, and South Carolina, where low-income households use more than 30 percent more electricity than the low-income national average. This dominance reflects greater reliance on heating fuel and high air conditioning demand which contributes to higher energy burden despite these households paying less per kilowatt of electricity. It is in the government’s interests to facilitate alleviation of this burden. But here too nuance matters. Consider two census tracts that show energy cost burden. The first located in Cambria County, Pennsylvania, and the second, Sevier County, Tennessee (see Appendix: Table 3a and 3b). Under the Justice40 initiative, both counties qualify for federal benefits. But outright allocation of benefits neglects nuances between these tracts that better explain why high energy burden may be incurred.

The year of housing construction is an example of such nuance. Accounting for this variable helps differentiate between tracts where high energy costs are caused by outdated, inefficient housing stock (such as those located in Cambria County) versus counties where newer buildings have high energy use or price-based burdens (i.e., Sevier County). In a tract with a median construction year before 1981, the national average, energy costs are likely driven by inefficient insulation, outdated heating systems, and energy leakage—making it a candidate for weatherization programs and retrofit subsidies. By contrast, a tract with a more recent median build year may face high energy bills due to market pricing rather than inefficiency, suggesting the need for utility bill assistance, rate reform, or energy literacy programs. Though both tracts may appear similarly disadvantaged under CEJST’s energy burden criteria, the

cause—and therefore the policy solution—is distinct. The extent to which Justice40 accommodates this distinctness is nebulous given the lack of agency specific guidance that exists in Biden-era documents²⁹.

Conclusion

I will conclude by making three main points.

First, the persistence of inequities does warrant scrutiny from lawmakers. The past few decades have seen declines in economic mobility as wage stagnation coupled with rising prices invariably delivers for hard working American families, far less in exchange for far more. It is in all our interests that we help these families help themselves. Our nation is invariably better, richer, and fuller when all Americans, regardless of race, color, and creed, succeed.

Second, the Justice40 initiative provides little opportunity for such success. The lack of clarity regarding what constitutes a benefit, the lack of objective assessment regarding whether these benefits are ultimately realized, and the lack consideration regarding cost constraints faced by the federal government, invariably guarantee that Justice40 would deliver few tangible benefits for underserved communities at an exorbitantly high cost to taxpayers.

Third and finally, we can do better. We can pursue policies that delivers tangible wins for the American people. Justice40 is a poor example of such policy, but that does not mean better policies cannot – and should not – be pursued. Key to the effectiveness of these policies is greater transparency and sensitivity to cost-effectiveness. Congress plays a crucial role in this regard given its responsibility to provide oversight for policy implementation. This oversight is crucial to restoring trust in our elected representatives³⁰.

Thank you again Chairman McCormick, Ranking Member Sykes, and Honorable Members of the Committee. If I can be of any assistance to you or your colleagues, please feel free to contact me.

Ashley Nunes, PhD

²⁹ *Climate and Economic Justice Screening Tool Technical Support Document Version 2.0*. Dec. 2024, dblew8dgr6ajz.cloudfront.net/data-versions/2.0/data/score/downloadable/cejst-technical-support-document.pdf. Accessed 21 June 2025.

³⁰ Woodley, Lucas, et al. "Defusing Political Animosity in the United States with a Cooperative Online Quiz Game." *Nature Human Behaviour*, 3 June 2025. *Nature*, <https://doi.org/10.1038/s41562-025-02225-2>

Appendix

State/Territory	Total Tracts	Disadvantaged Tracts	% of Tracts Disadvantaged	Population	% of U.S. Population
California	8,057	2,158	26.78	38,965,193	11.63
Nevada	687	156	22.71	3,194,176	0.95
New York	4,919	870	17.69	19,571,216	5.84
New Jersey	2,010	290	14.43	9,290,841	2.77
Illinois	3,123	441	14.12	12,549,689	3.75
Louisiana	1,148	143	12.46	4,573,749	1.37
Massachusetts	1,478	158	10.69	7,001,399	2.09
Oregon	834	84	10.07	4,233,358	1.26
Florida	4,245	423	9.96	22,610,726	6.75
Arizona	1,526	139	9.11	7,431,344	2.22

Table. 1: Top 10 U.S. States by percent of census tracts identified as disadvantaged due to PM2.5 concentration, diesel particulate matter exposure, and/or traffic proximity and volume

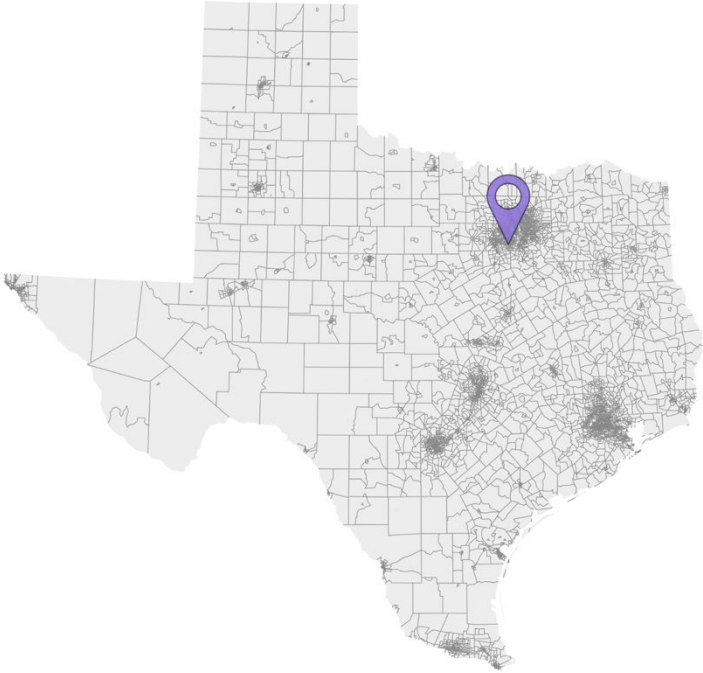
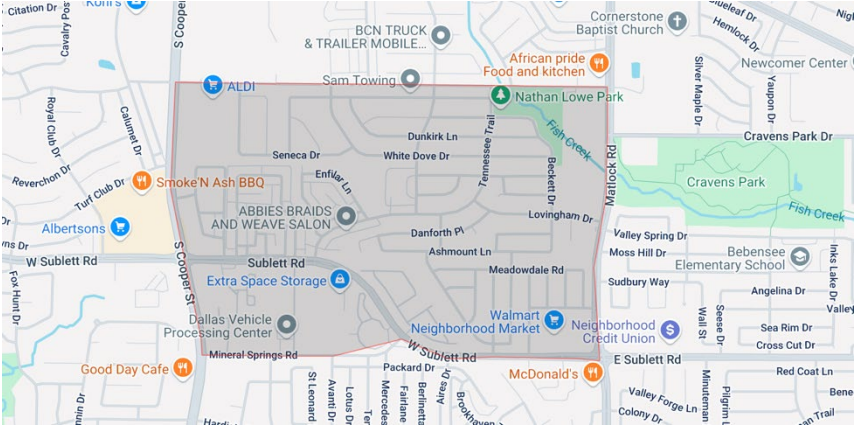
 Created with Datawrapper 	Tract Number: 48439111543
	Country: Tarrant County
	State: Texas
	Population: 7,556
	Criteria: Housing (1 burden threshold + related socioeconomic threshold to qualify)
	Statistic 1: Housing Cost 90th Percentile (≥ 90 th to qualify)
Statistic 2: Low income 83rd Percentile (≥ 65th to qualify) Percentage of households that are overcrowded from ACS B25014: 12.08%	

Table. 2a: Overview of housing burden for Tarrant County, Texas

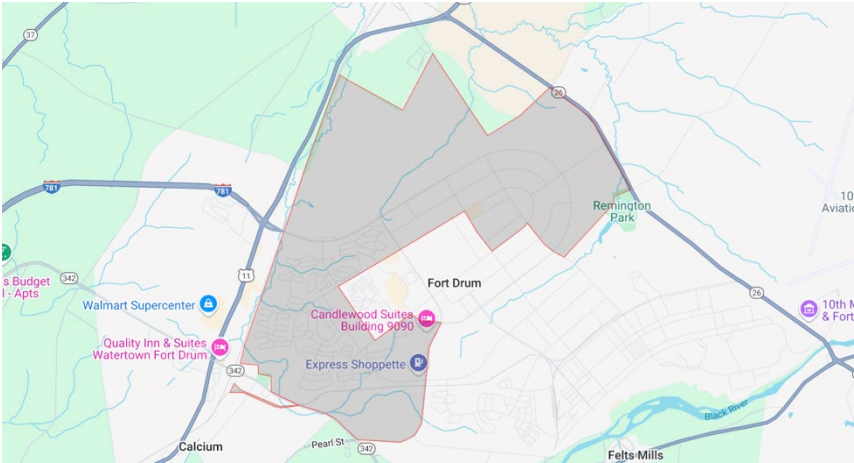
 Created with Datawrapper 	Tract Number: 36045060803
	Country: Jefferson County
	State: New York
	Population: 7,141
	Criteria: Housing (1 burden threshold + related socioeconomic threshold to qualify)
	Statistic 1: Housing Cost 92nd Percentile (≥ 90 th to qualify)
	Statistic 2: Low income 83rd Percentile (≥ 65 th to qualify)
	Percentage of households that are overcrowded from ACS B25014: 0.00%

Table. 2b: Overview of housing burden for Jefferson County, New York

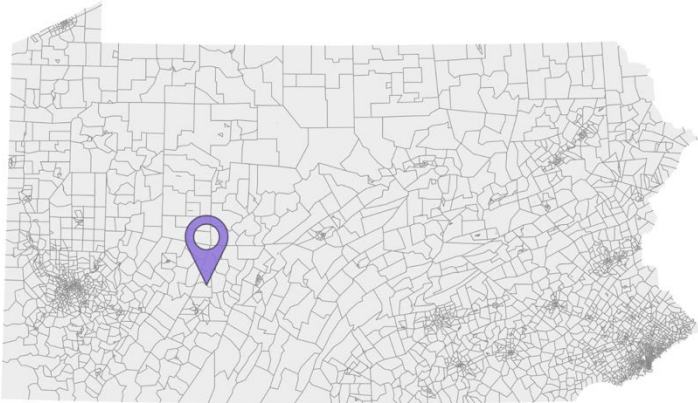
 Created with Datawrapper 	Tract Number: 42021011600
	Country: Cambria County
	State: Pennsylvania
	Population: 2,432
	Criteria: Energy (1 burden threshold + related socioeconomic threshold to qualify)
	Statistic 1: Energy Cost 95th Percentile (≥90th to qualify)
	Statistic 2: Low income 68th Percentile (≥65th to qualify)
	Median Year Structure Built from ACS B25035: 1947

Table. 3a: Overview of energy burden for Cambria County, Pennsylvania

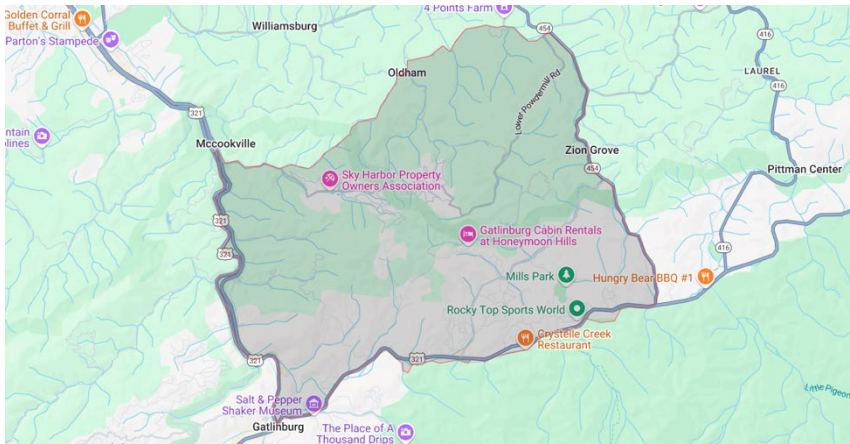
	Tract Number: 47155081102
	Country: Sevier County
	State: Tennessee
Created with Datawrapper	Population: 3,478
	Criteria: Energy (1 burden threshold + related socioeconomic threshold to qualify)
	Statistic 1: Energy Cost 96th Percentile (≥90th to qualify)
	Statistic 2: Low income 71st Percentile (≥65th to qualify)
	Median Year Structure Built from ACS B25035: 1997

Table. 3b: Overview of energy burden for Sevier County, Tennessee

Acknowledgement

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