



Energy Justice at DOE

Michael Reiner, Analyst & Policy Advisor



U.S. DEPARTMENT OF
ENERGY

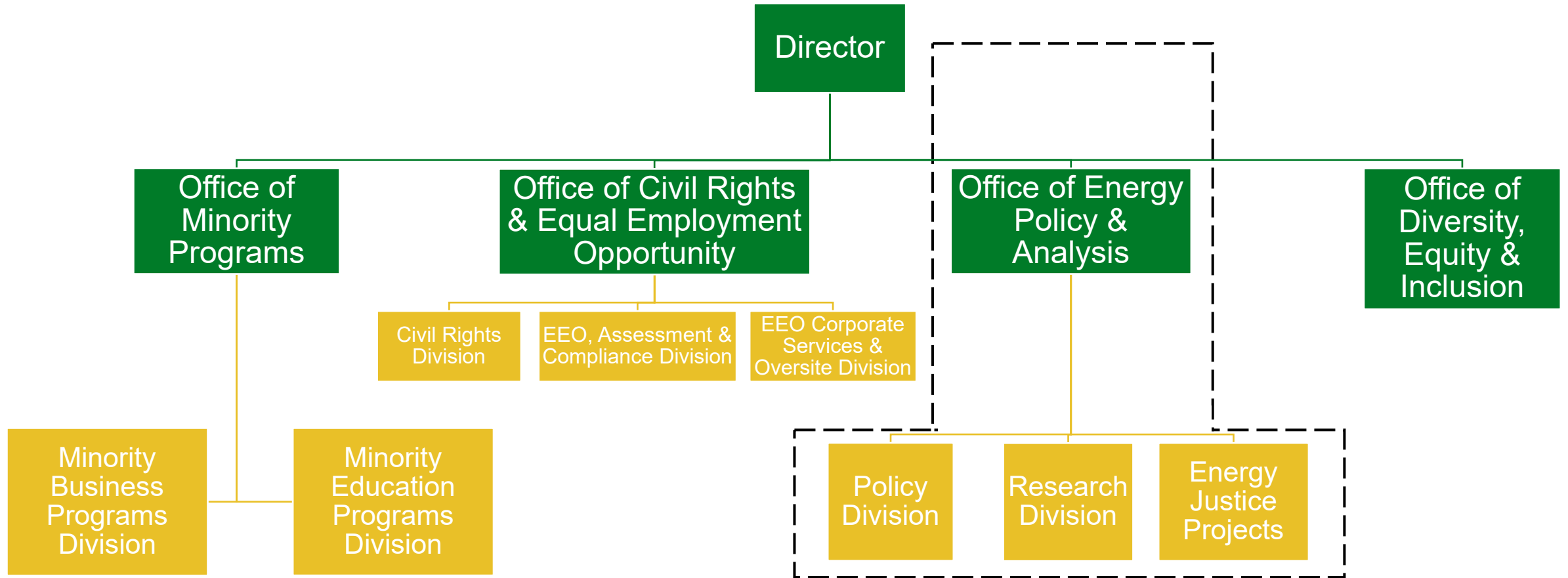
Office of Energy
Justice and Equity

Agenda

- DOE's Office of Energy Justice & Equity
- EJ considerations within power system
- Tools & promising practices
- Discussion & feedback



Office of Energy Justice & Equity



DOE's Office of Energy Justice & Equity

- 1** Advise the Secretary of Energy on the effect of energy policies on people of color (POC) and Minority Business Enterprises (MBE)
- 2** Work with the Energy Information Administration, to **research** and collect **data** on program effects on POC
- 3** **Develop** and **recommend** energy relevant programs, **policies** and regulations for POC
- 4** Assess **energy burdens** on POC
- 5** Provide energy-related **technical assistance** and job creation opportunities for POC

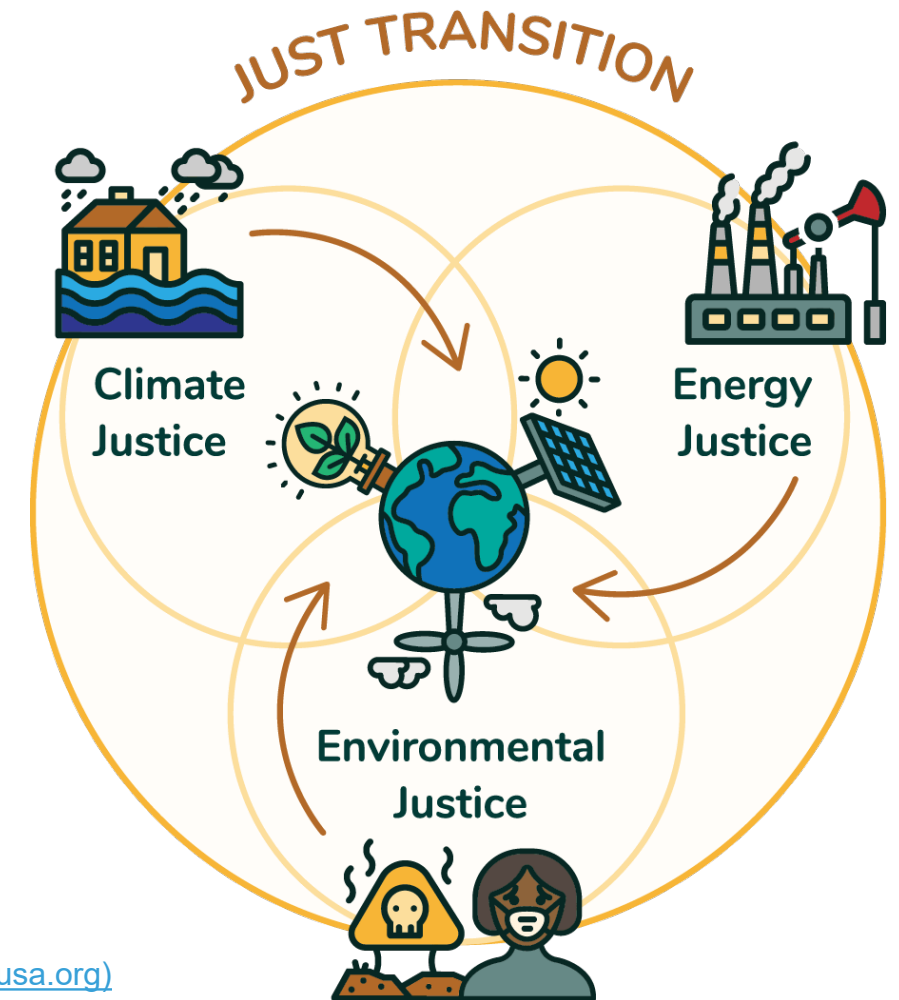
What is Energy Justice?

Seeks **equity** in the **social** and **economic** participation in the energy system

While **remediating** social, economic, and health **burdens** on “frontline communities” explicitly centering their concerns

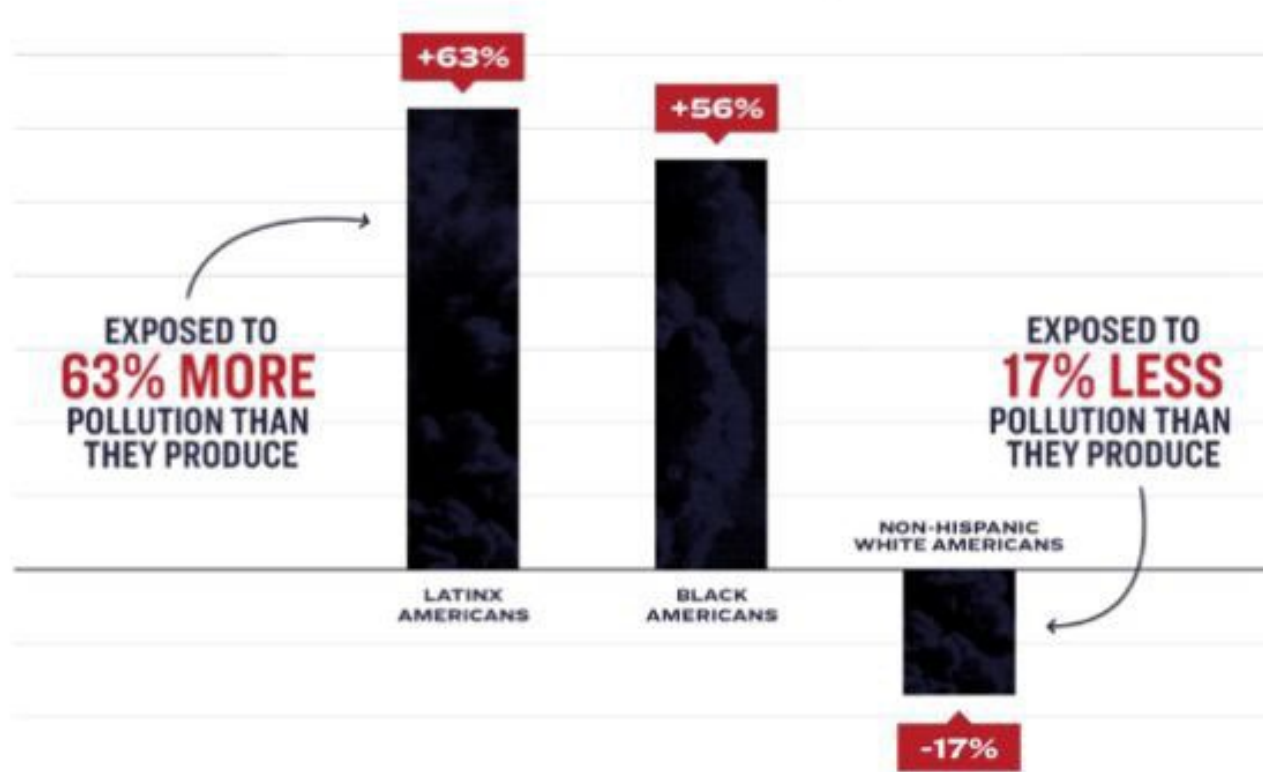
Aims to make energy more **accessible**, **affordable**, **clean**, and **democratically** managed for all communities.

Image Credit: Initiative for Energy Justice [Section 1 - Defining Energy Justice: Connections to Environmental Justice, Climate Justice, and the Just Transition - Initiative for Energy Justice \(iejusa.org\)](#)



Black and Latino Communities are Exposed to More Pollution Than They Produce

POLLUTION EXPOSURE BY POPULATION (2003–2015)



Source: Christopher W. Tessum et al., "Inequity in consumption of goods and services adds to racial-ethnic disparities in air pollution exposure," Proceedings of the National Academy of Sciences (March 2019)



Climate change can exacerbate inequities

Feb 13, 2021, Texas

TEXAS NEWS

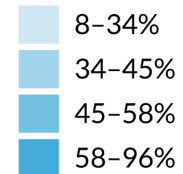
Texas power outages: How the largest energy-producing state in the US failed in freezing temperatures



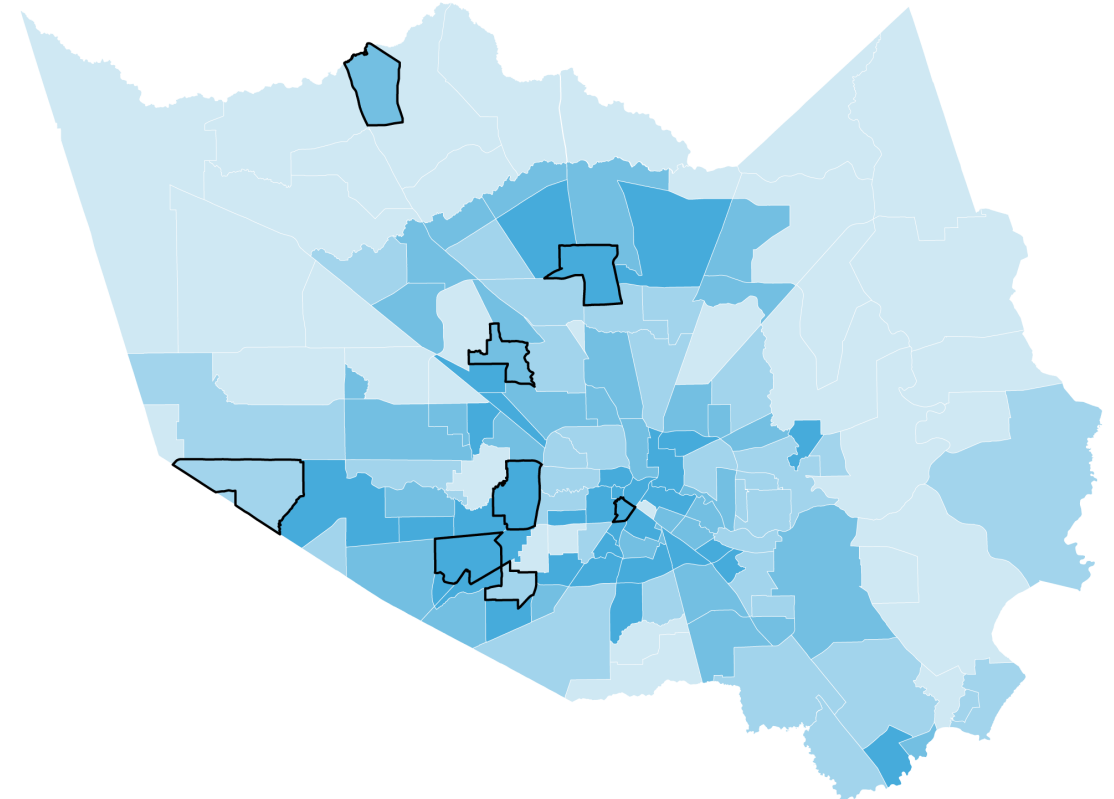
Cold snaps lead to need for more heating

Harris County Neighborhoods with Larger Shares of Renters Experienced Longer Power Outages during Winter Storm Uri

Share of renter households



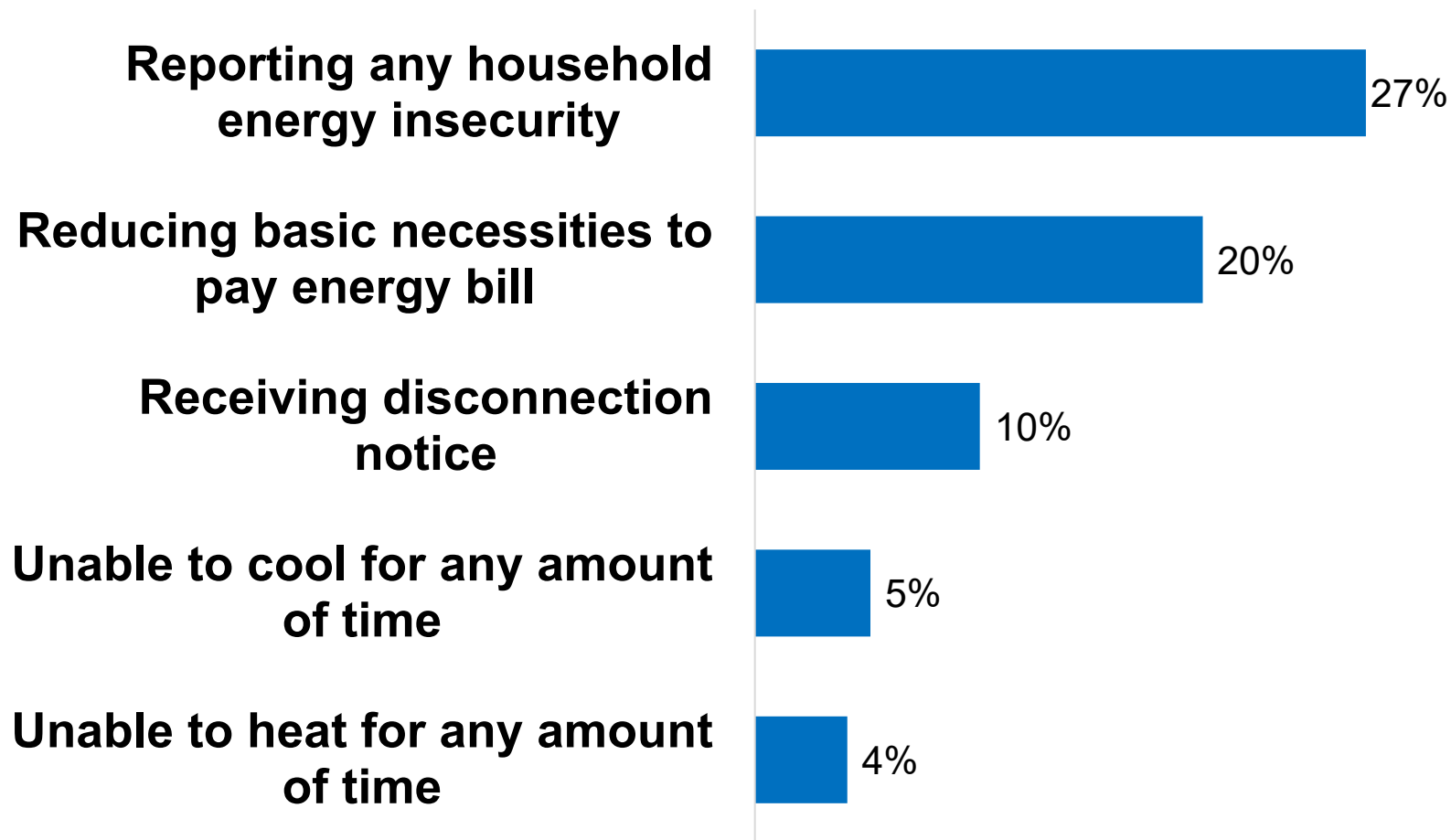
Areas where more than 1% of households didn't have power on February 19



URBAN INSTITUTE

Sources: CenterPoint Energy data for 2014 through 2018 and the American Community Survey.

Energy insecurity and high energy costs affect nearly 1 in 4 American households

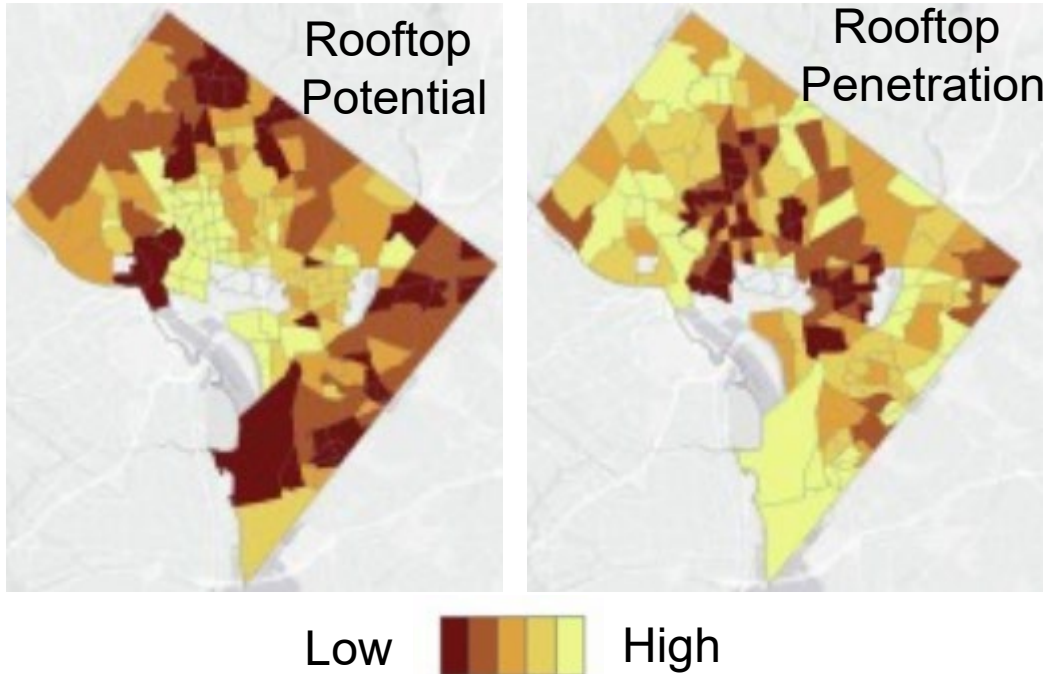


Americans spend **>\$37 billion/year** on energy costs

Over **27.8M** households are **energy burdened** (spend > 6% income on energy)

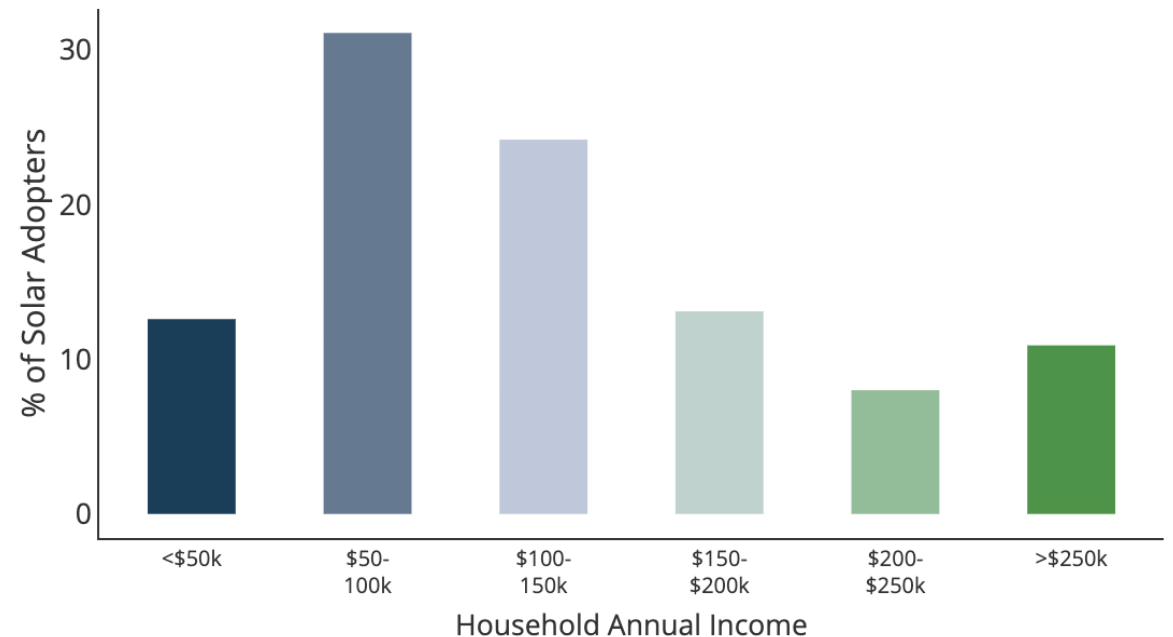
Sources: U.S Energy Information Administration (EIA), RECS 2020; LEAD: <https://lead.openei.org/>

Disproportionate barriers to clean energy access



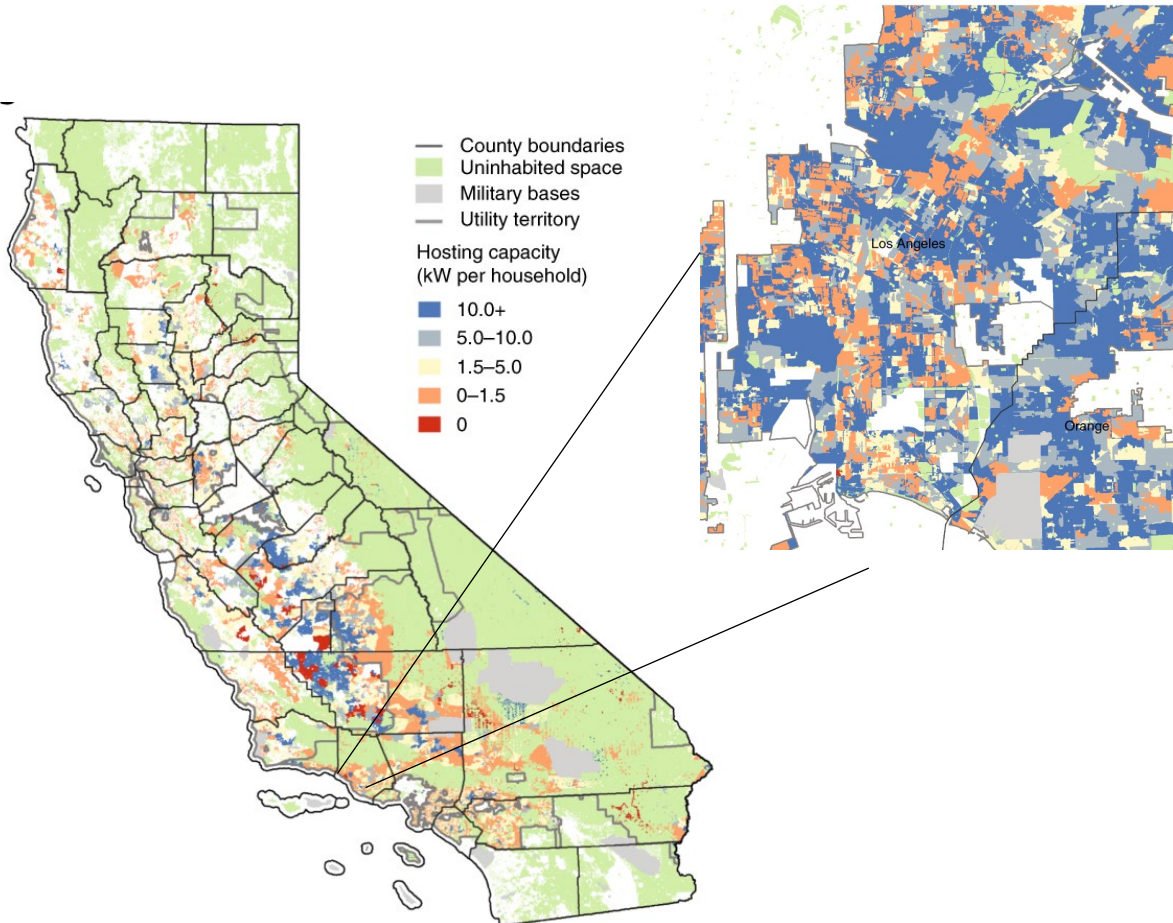
The majority (68.4%) of residential rooftop potential is on single-family rooftops. Only 37% of these are LMI occupied.

- Adoption of solar by LMI and households of color is slower
 - For the same median household income – Black- and Hispanic communities have 69 and 30% less rooftop PV installed respectively, while white-majority communities have installed 21% more. (Sunter et al. 2019)



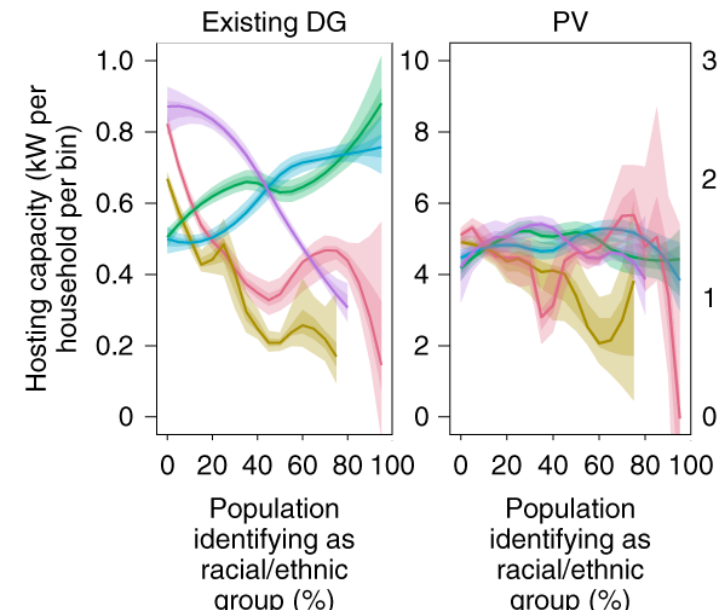
Reames, T. G. (2020). [Distributional disparities in residential rooftop solar potential and penetration in four cities in the United States](#). Energy Research & Social Science, 69, 101612.

Grid infrastructure Inequalities



Black-identifying and disadvantaged communities have **disproportionately less grid capacity** to host renewable solar energy & DERs at the household level.

Capacity limitations in PGE Territory



Brockway, A.M., Conde, J. & Callaway, D. Inequitable access to distributed energy resources due to grid infrastructure limits in California. *Nat Energy* 6, 892–903 (2021). <https://doi.org/10.1038/s41560-021-00887-6>



How do we transition our national energy system away from these outcomes?

How can investments create economic opportunities & value for communities?



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Community participation in grid planning



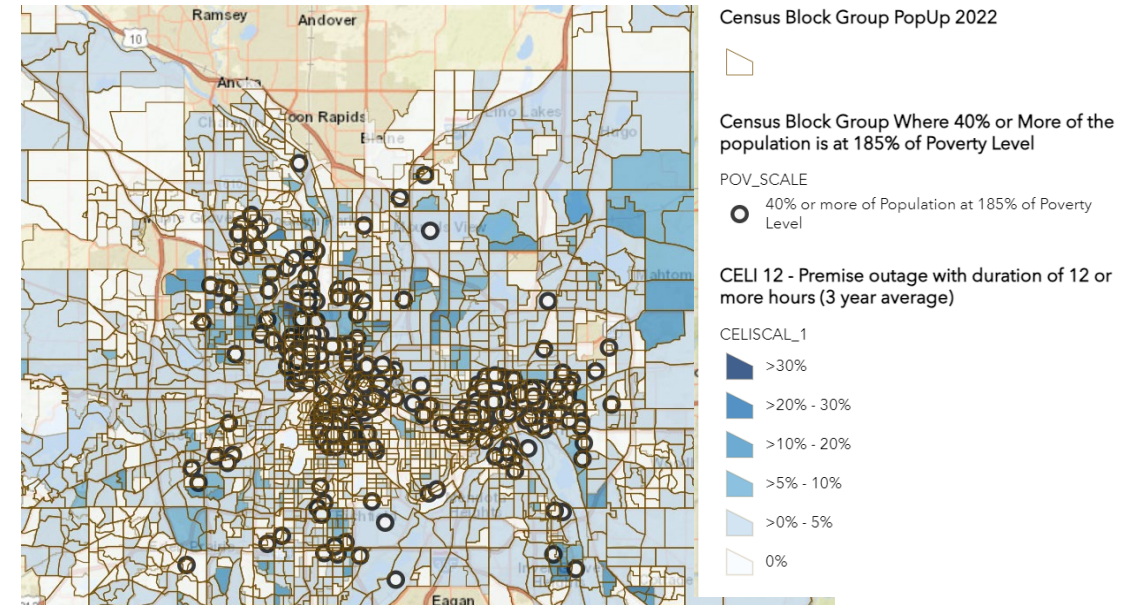
- How is information presented?
- When are communities brought into the planning/ decision-making space?
- Who is representing community the perspective?
- How do investments align with community priorities?

Adapted from [Expanding the Conceptual and Analytical Basis of Energy Justice](#)



Equity-enabling policies, programs, & practices

- **Incentivize projects that benefit communities**
 - Hawaii community benefits package for proposed renewable energy developments
 - Morongo Transmission tribal project
- **Long-term affordability considerations & resource planning**
 - CA policy to consider non-wire/ alternative infrastructure investments
 - SDG&E's Borrego Springs Microgrid project
- **Application of more granular geospatial data**
 - Hosting capacity maps, consumer-facing power outage metrics, interconnection prioritization



[Xcel Energy MN Electric Service Quality Interactive Map \(arcgis.com\)](https://arcgis.com)

EJE research, projects, & support activities



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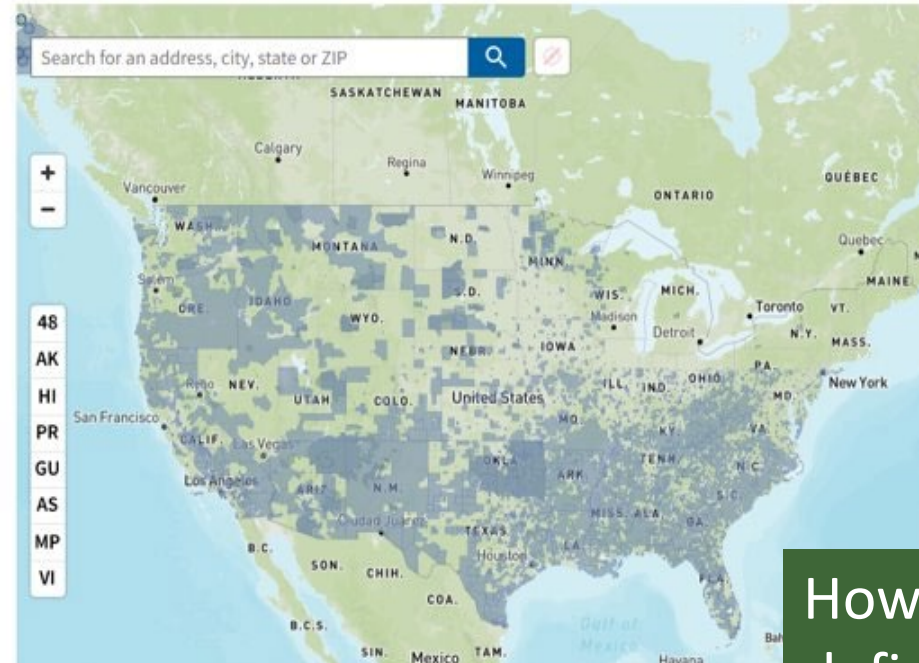
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Justice 40 – Policy Priorities and Defining Disadvantage Communities

DOE Policy Priorities - Benefits

1. Decrease in energy burden
2. Decrease in environmental exposure and burdens
3. Increases in jobs/training
4. Increases in enterprise creation
5. Increases in energy democracy
6. Increases in low-cost capital
7. Increases in clean energy access and adoption
8. Increases in energy resilience

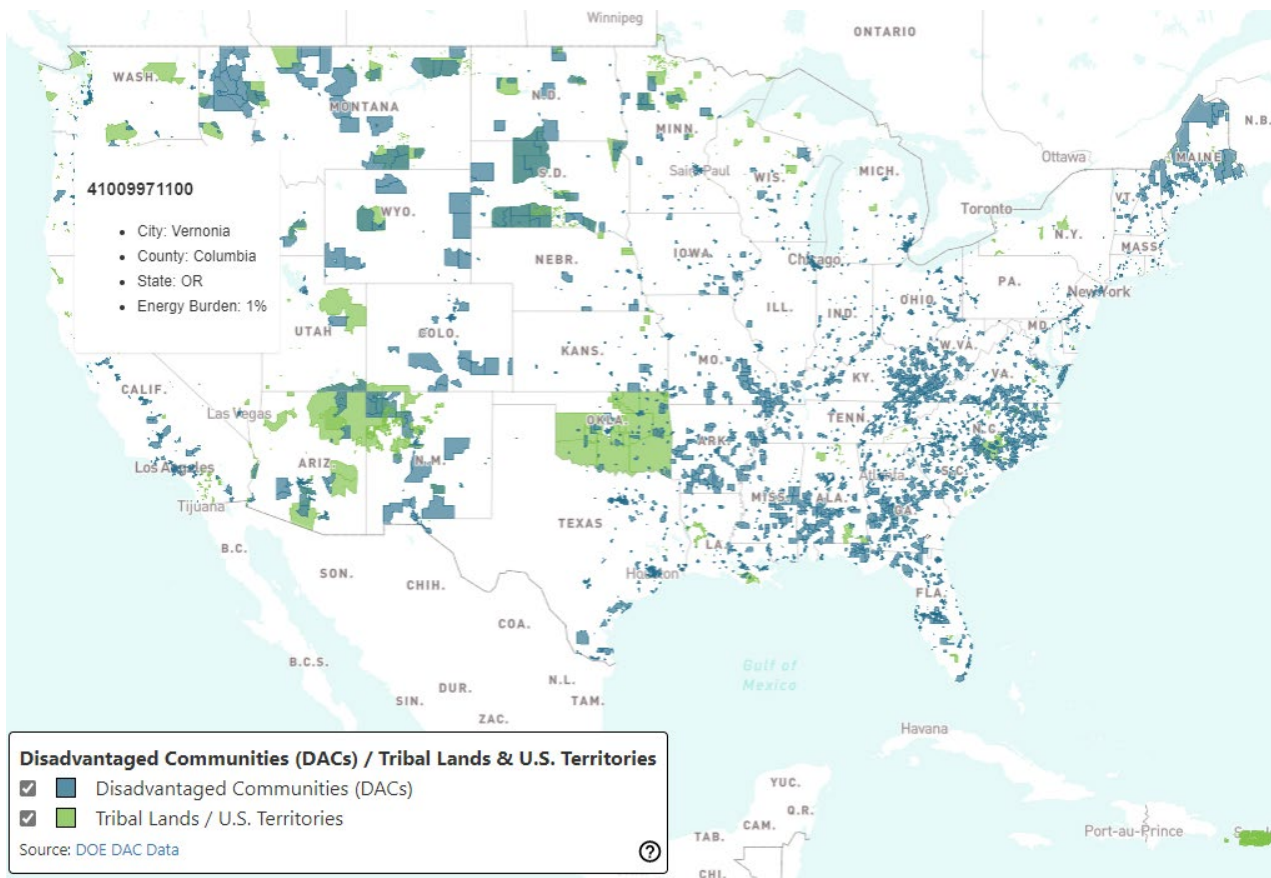
How do we measure and track the benefits of J40 investments?



How do we define disadvantaged communities (DACs)?

DOE's Disadvantaged Communities Reporter

[Energy Justice Dashboard \(energyjustice.egs.anl.gov\)](https://energyjustice.egs.anl.gov)



Search

OR

TRACT

TRACT

TRACT 13229960400

- City: Blackshear
- County: Pierce
- State: GA
- Population: 8,386
- DAC Status: Not Disadvantaged

National Ranking: 52% State Ranking: 55% DAC Score: 17

Indicator	National Percentile	Value
Mobile Home	98%	38%
Transportation Costs	94%	35%
No Internet Access	90%	28.83%
Job Access	88%	-1.1
Uninsured	83%	14%
Low Income Population	80%	48%
Single Parent	76%	49%
Disabled population	76%	17%

Full Report

Grid Modernization Initiative: Equity in grid planning research projects

Two national lab projects awarded as part of GMI 2023 Lab Call

Enhanced Modeling to Ensure Equitable Power System Operations and Planning

- Identify and prioritize new metrics, datasets and modeling methodologies to improve consideration of energy equity in power system models
- Implement model enhancements to demonstrate impacts through case study analysis

Lab Leads: ANL & NREL

External Partners: Carnegie Mellon, Colorado School of Mines

Advancing Equity in Grid Planning and Operations

- Create database of equity in grid planning and operations state & PUC policies and lab projects
- Provide technical assistance and training for states
- Create a venue for the exchange of ideas through a working group comprised of PUCs, states, community and utility perspectives

Lab Leads: LBL & PNNL

External Partners: NARUC, NASEO, CESA & NEEA

US Energy Poverty Framework & Strategy

The energy poverty strategy aims to:

- 1) Create national framework to measure the extent and severity of households in energy poverty
- 2) Provide resources on emerging policy & program best practices
- 3) Track incremental progress over time



Refine approach to & understanding of household energy needs

Application of framework:

- Understand building electrification impacts
- Account for emerging home energy needs, such as AC
- Contextualize energy costs alongside other household finances

Questions?



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