



OCEED

Office of Clean Energy Demonstrations



Equity, Energy, and Environmental Justice

Jill Capotosto
Energy Justice Liaison
September 27, 2022



Our energy system is inequitable

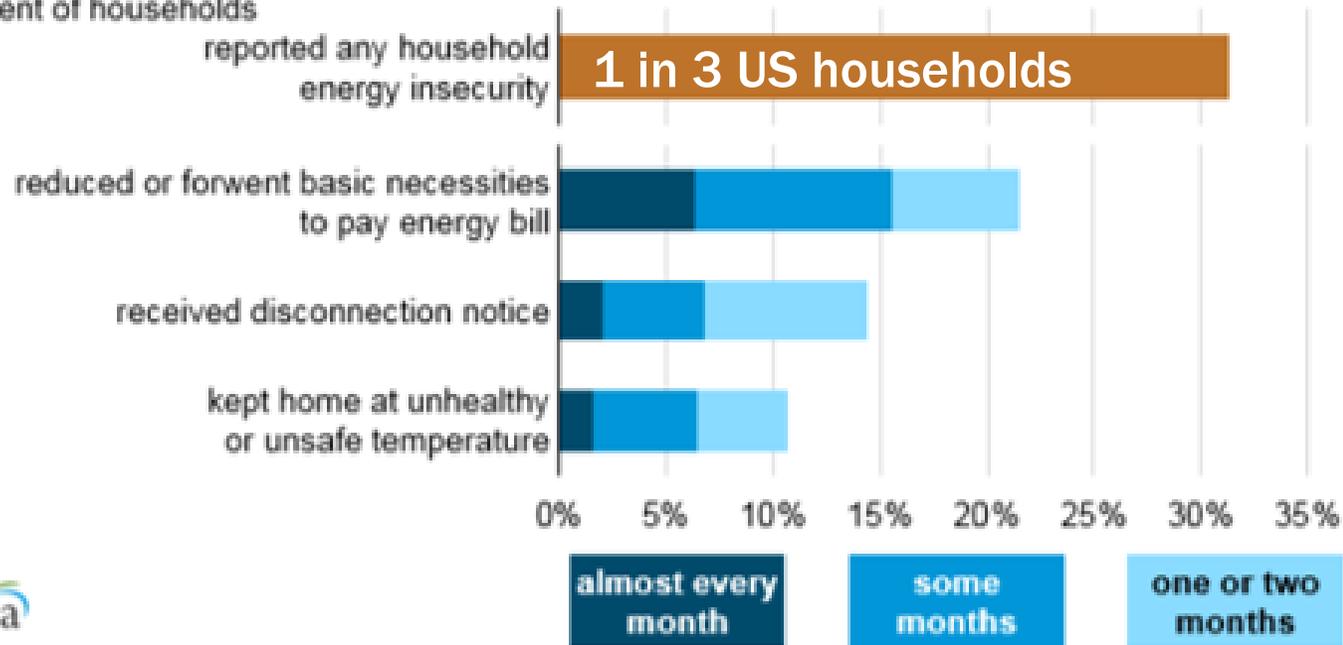
Energy burden and energy insecurity

Energy burden = household energy costs ÷ income

Energy insecurity: an inability to pay for basic energy needs (heat, cooling, light)

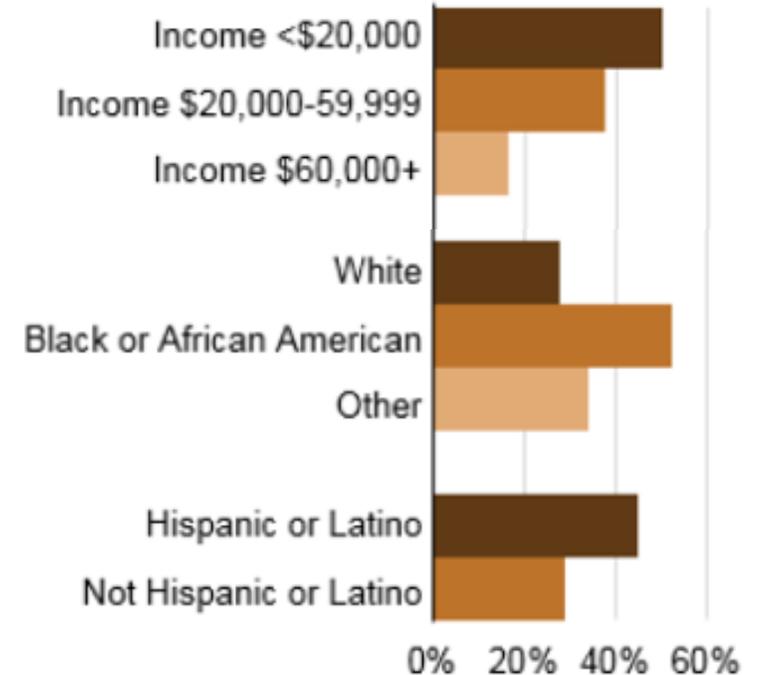
Households that experienced energy insecure situations, 2015

percent of households



Household energy insecurity by household characteristics

(percent of households)



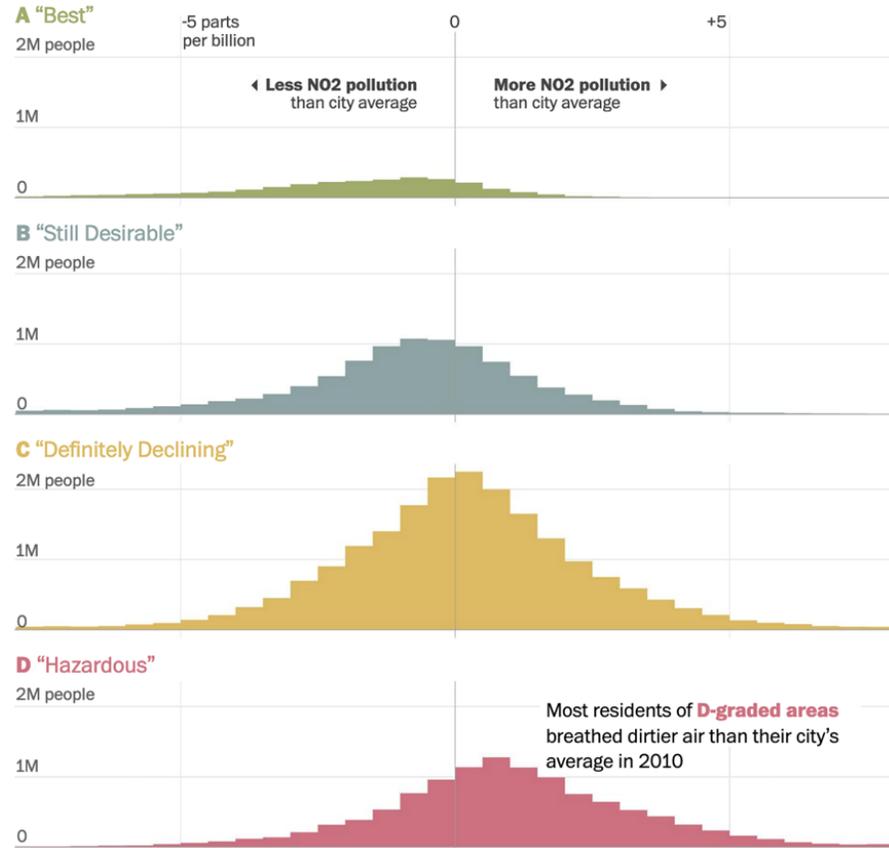
Source: U.S. Energy Information Administration, *Residential Energy Consumption Survey 2015*



Exposure

Redlining's fingerprint lingers in the nation's air

Levels of nitrogen dioxide pollution in 2010 tended to be worse in areas graded **C** or **D** than areas graded **A** or **B** on government mortgage maps dating to the 1930s.



Note: City averages are population-weighted mean values calculated for HOLC-graded blocks only.

Source: Lane et al., 2022

JOHN MUYSKENS/THE WASHINGTON POST



Photo by [Documerica](#) on [Unsplash](#) | 750 MW Power Plant, North Platte, Wyoming

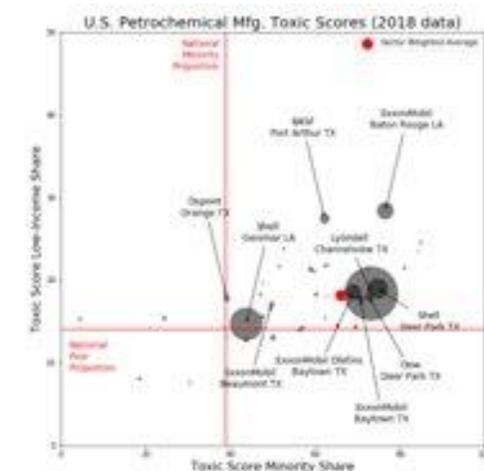
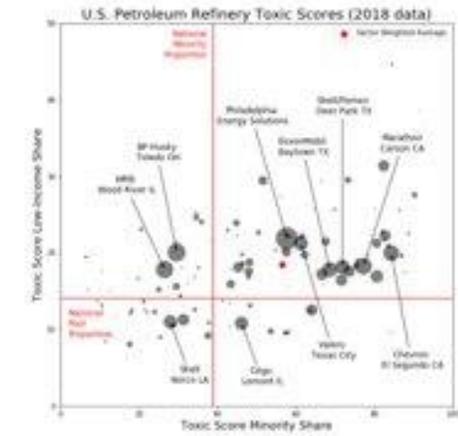
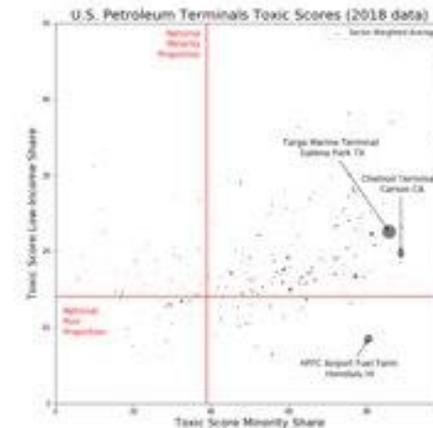
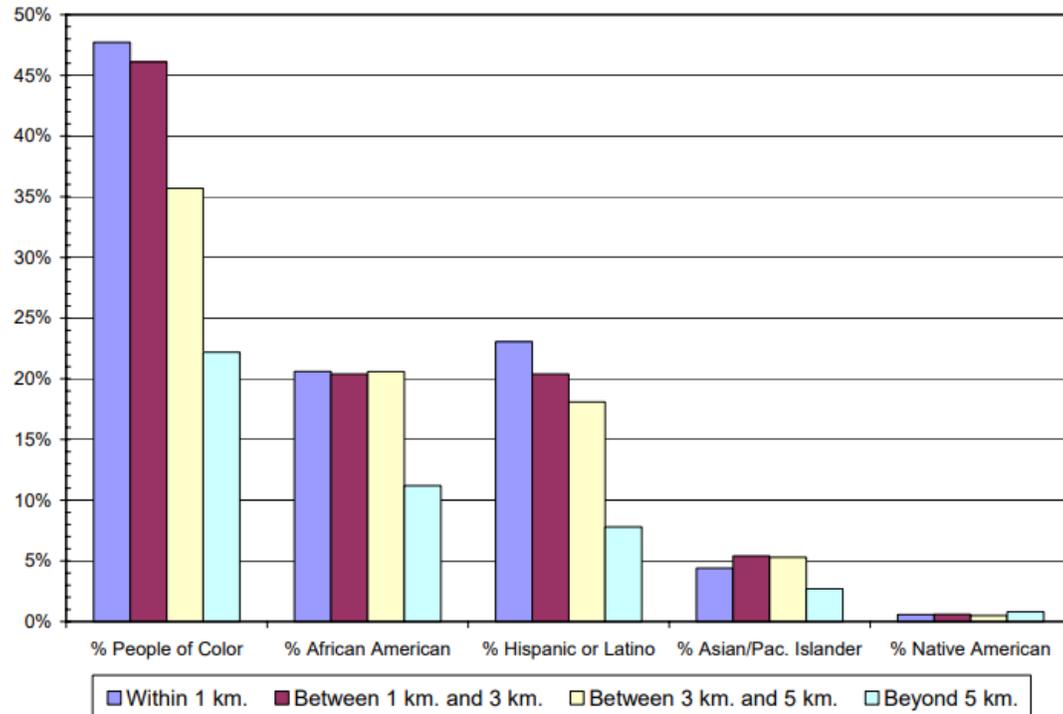
Historical Redlining Is Associated with Present-Day Air Pollution Disparities in U.S. Cities, Haley M. Lane, Rachel Morello-Frosch, Julian D. Marshall, and Joshua S. Apte, *Environmental Science & Technology Letters* 2022 9 (4), 345-350



Cumulative burden and exposure

"Sacrifice zones" - toxic waste exposure and pollution

Figure 3.2 – Percent People of Color Living Near Hazardous Waste Facilities

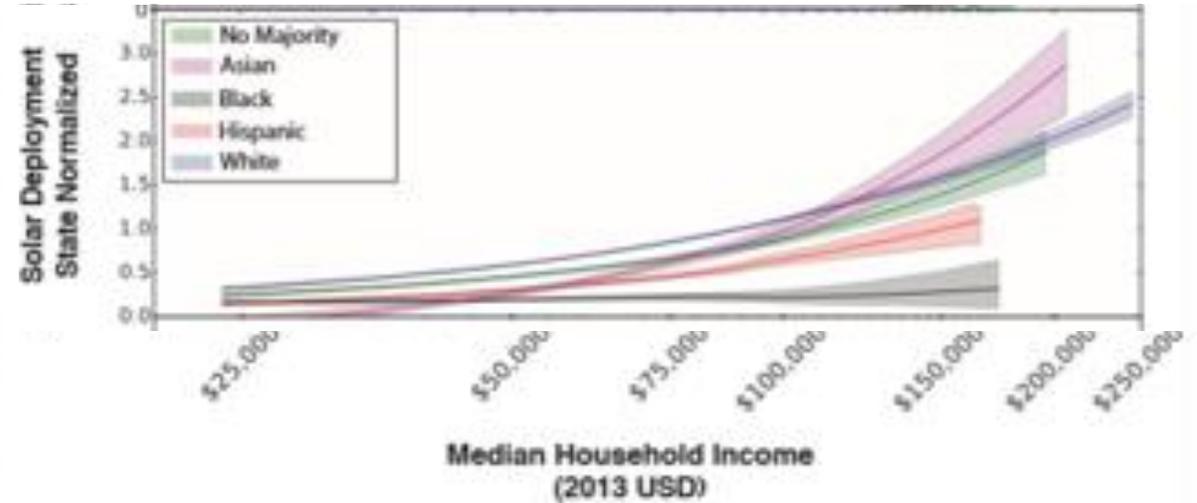
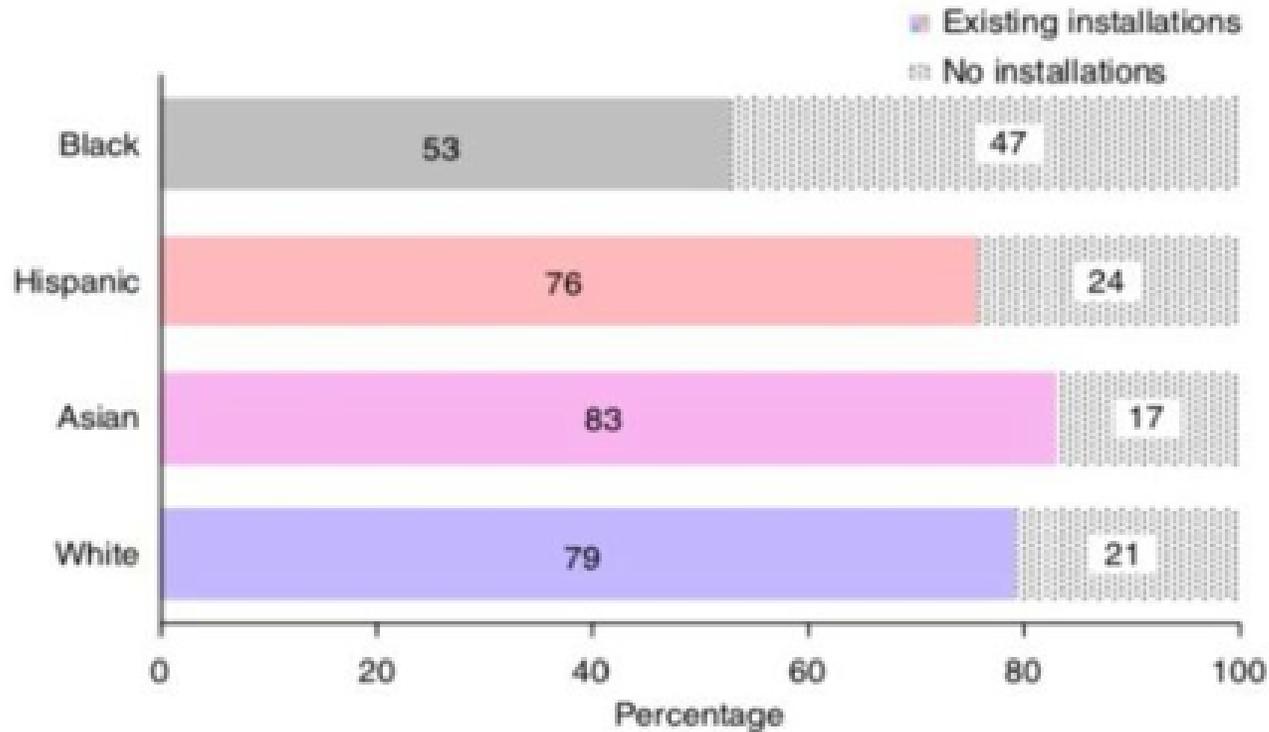


Bullard, R., Mohai, P., Saha, R., & Wright, B. (2007). **Toxic wastes and race at twenty: 1987–2007.** United Church of Christ Justice and Witness Ministries. toxic-wastes-and-race-at-twenty-1987-2007.pdf (nrdc.org)

Research Brief: Environmental Justice Across Industrial Sectors - Greenpeace USA
<https://www.greenpeace.org/usa/research/environmental-justice-industrial-sectors/>

Clean energy access

Percentages of Each Census Tract With and Without Existing Rooftop Photovoltaic Installations



Sunter, D.A., Castellanos, S. & Kammen, D.M. Disparities in rooftop photovoltaics deployment in the United States by race and ethnicity. *Nat Sustain.* 71-76 (2019).

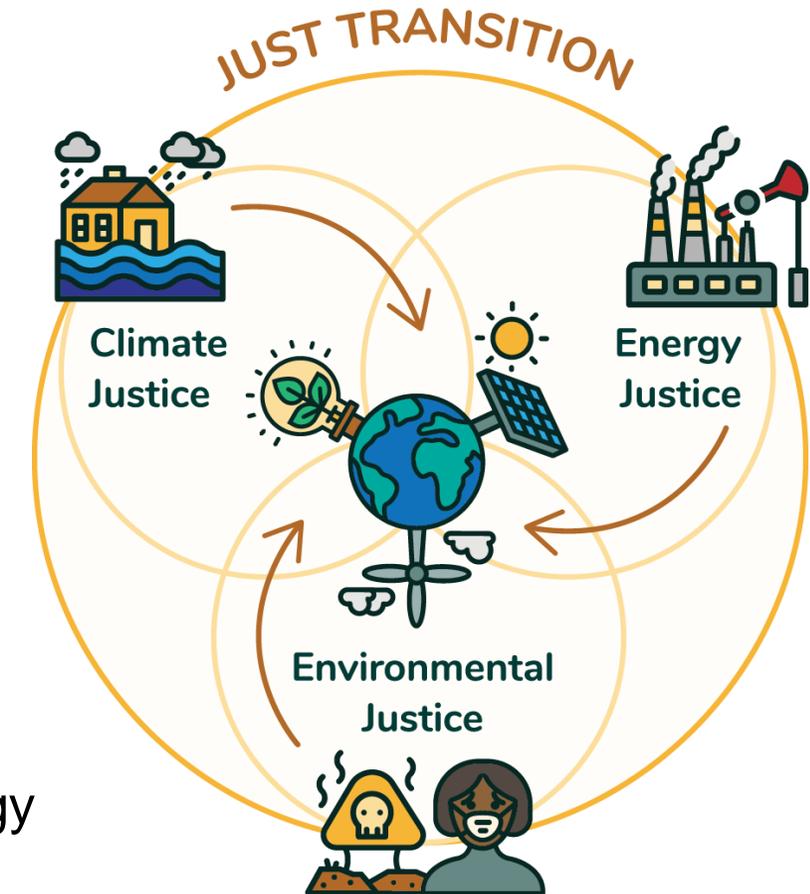
What are environmental and energy justice?

Environmental justice

- Fair treatment and meaningful involvement of all people (race, national origin, income)
- Development, implementation, and enforcement
- Ensure everyone the same degree of protection and access to decision-making

Energy Justice

- Social and economic participation in the energy system
- Remediation of social, economic, and health burdens on frontline communities, centering their concerns
- Accessible, affordable, clean, and democratically managed energy



Initiative for Energy Justice [Defining Energy Justice: Connections to Environmental Justice, Climate Justice, and the Just Transition](#)

EJ and CCS

- Extending life of fossil fuels
- Seismic activity
- Leakages
- Water contamination
- Pipeline risks
- Cost
- **Cumulative burden**

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EJ communities are wary as CCS racks up policy wins

By Jean Chemnick 1/09/22 7:09 AM EDT



The BP PLC refinery sits across the street from Marktown Park in Whiting, Ind. Environmental justice advocates are concerned that the growing interest in using carbon capture technology could harm communities of color. Scott Olson/Getty Images



Justice40

EO 14008 Sec 223 – Justice40 – how Federal investments might be made for 40% of the overall benefits of certain federal investments to flow to disadvantaged communities

Federal
investments



40% of the overall
benefits



Disadvantaged
communities



What does Justice40 cover?

Federal investments

Federal grant & procurements

Financing (credit, loans, guarantees)

Provision of goods & services

Staffing costs

Others per OMB

In these areas

Climate change

Clean energy, energy efficiency

Clean transportation

Affordable and sustainable housing

Training/workforce development

Remediation of legacy pollution

Clean water/waste infrastructure

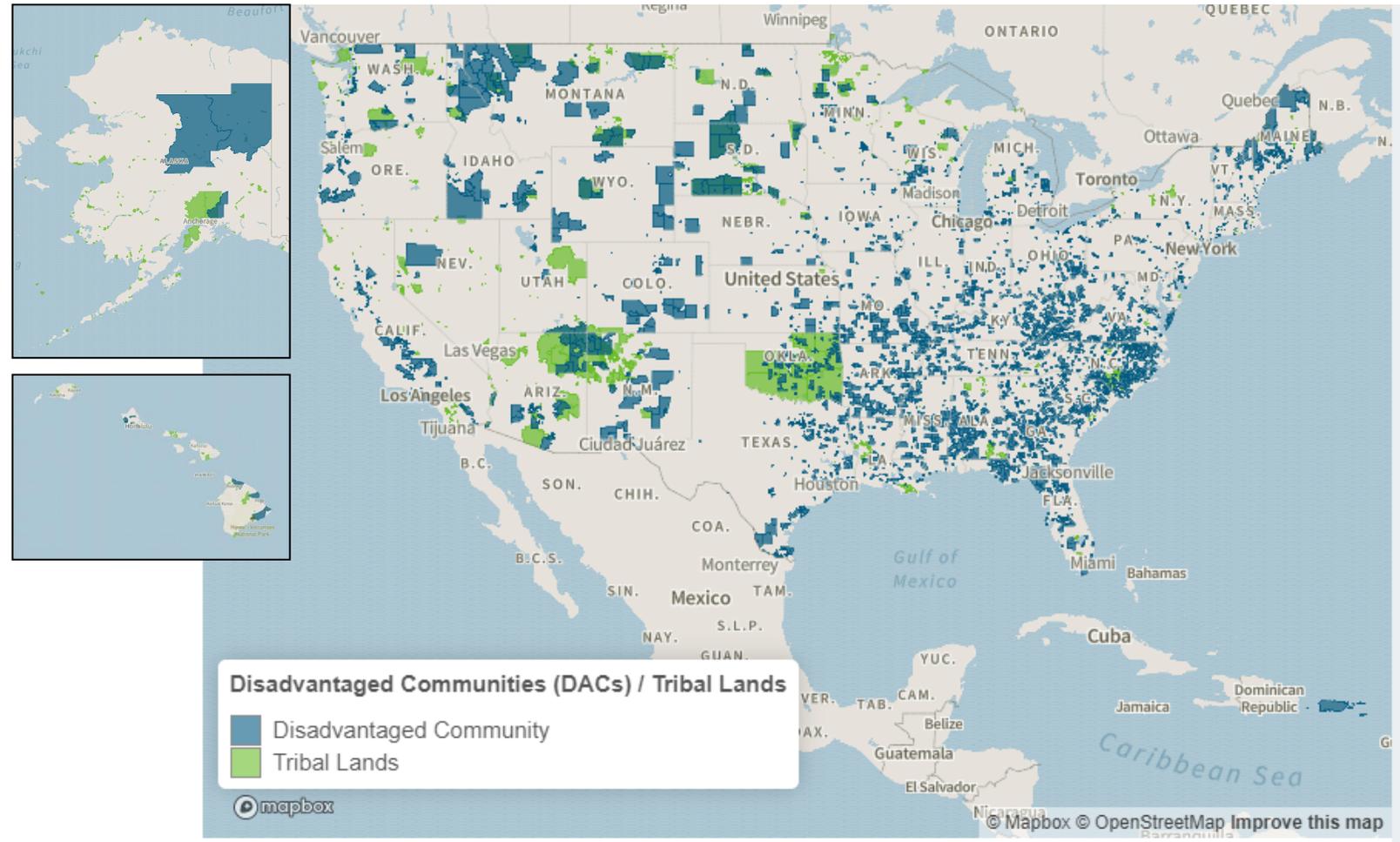


DOE definition for Disadvantaged Communities

Qualifying census tracts:
13,581 (18.6%)

Additional native lands:
703 native populations in
858 locations

U.S. territories:
Virgin Islands, Northern
Marianas, Guam, American
Samoa, Puerto Rico



<https://www.energy.gov/diversity/justice40-initiative>

DOE Justice40 Policy Priorities

In disadvantaged communities:

1. Decrease energy burden
2. Decrease environmental exposure and burdens
3. Increase parity in clean energy technology access and adoption
4. Increase access to low-cost capital
5. Increase clean energy enterprise creation (Minority/Disadvantaged Business Enterprise)
6. Increase the clean energy job pipeline and job training
7. Increase energy resiliency
8. Increase energy democracy



Equity, Energy, and Environmental Justice at OCED

- Collaborating across DOE to support the Justice40 Initiative
- Supporting EJ TCTACs (applications due November 1)
- OCED-funded programs are incorporating requirements related to:
 - **Energy and environmental justice and Justice40 Initiative**
 - **Community and labor engagement**
 - **Diversity, equity, inclusion, and accessibility**
 - **Quality jobs and workforce development**
- Hydrogen Hubs and CCS FOAs



FOA Community Benefits Plan



Prioritizing DEIA

Diversity

Welcome and engage all people and perspectives: “workforce looks like America”

Hire and promote a diverse and representative workforce, identify talent, announce vacancies in multiple ways, develop pipeline, mitigate bias, address potential barriers in accessing job opportunities.

Equity

Ensure fair outcomes and access to opportunities and career advancement

Consistent and systematic fair, just, impartial treatment of all, including underserved communities, opportunities parity to advance in careers and grow as leaders, mitigation of biases/barriers, fair outcomes and access to services.

Inclusion

Create an environment where everyone belongs and can thrive

Ensure employees feel supported; strengthen feedback loops. Provide opportunities to learn/develop/grow so employee talents are supported/ utilized/ embraced and create engaged/ high-performing workforce.

Accessibility

Establish ease of use for all abilities

Consistently design, develop, and maintain facilities, technology, programs, services so all people, including those with disabilities, can fully and independently use them. Modernize infrastructure to support rapid adoption of tech. innovations; include accessibility in decision-making for physical and virtual environments.



Community and Labor Engagement

Assess social, economic, historical, political context for affected area

Identify stakeholders, especially traditionally excluded groups

Develop **engagement methods and timelines**

Create **two-way engagement strategy**

Develop **Workforce and Community Agreements Statement**

Evaluate engagement



Prioritizing Quality Jobs

- **Good-paying jobs**
- Free and fair choice to join a **union**
- **Strong labor standards**
 - Health and safety standards
 - Predictable work schedules
 - Clear processes for dispute resolution
- High-road **workforce development** programs
 - Job access for marginalized and historically underrepresented workers
 - Registered apprenticeship and quality pre-apprenticeship programs

EPG Demographics by Sub-technology, 2019

	Solar Generation	Nuclear Generation	Natural Gas Generation	Wind Generation	National Workforce Demographics ^{HWII}	EPG Overall
Male	70%	64%	64%	69%	53%	68%
Female	30%	36%	36%	31%	47%	32%
Hispanic or Latinx	20%	15%	18%	20%	18%	18%
Not Hispanic or Latinx	80%	85%	82%	80%	82%	82%
American Indian or Alaska Native	1%	1%	1%	1%	1%	1%
Asian	9%	10%	10%	10%	6%	10%
Black or African American	8%	12%	10%	8%	12%	9%
Native Hawaiian or other Pacific Islander	1%	1%	1%	1%	1%	1%
White	71%	66%	64%	69%	78%	69%
Two or more races	9%	10%	14%	11%	2%	10%

2020 U.S. Energy and Employment Report (USEER) (usenergyjobs.org)



Justice40 Initiative

Assessment

- Who is impacted, and the burdens they already experience
- Benefits, where they flow
- Harms, where they flow
- Information gaps

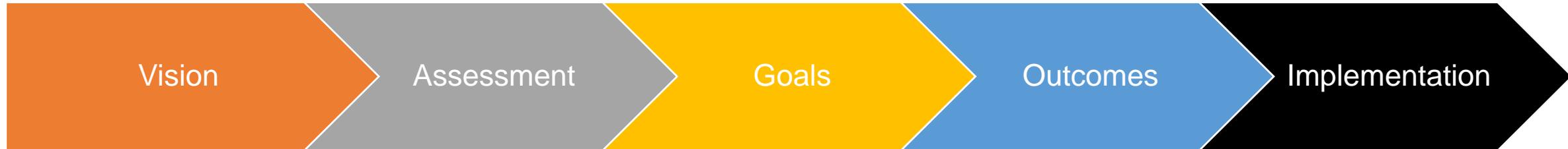


Implementation strategy

- EEJ opportunities and risks
- Strategies, milestones, timelines
- Barriers and risks
- Resources



Priorities into action-oriented plans



Vision: We affirm we care about justice / engagement / DEIA / quality jobs

Assessment: We mapped or assessed underserved communities / stakeholders / DEIA

Goals: From our assessment and engagement, we know X is lacking, so we want to improve in X

Outcomes: We know we have succeeded when Y (specific target) is reached

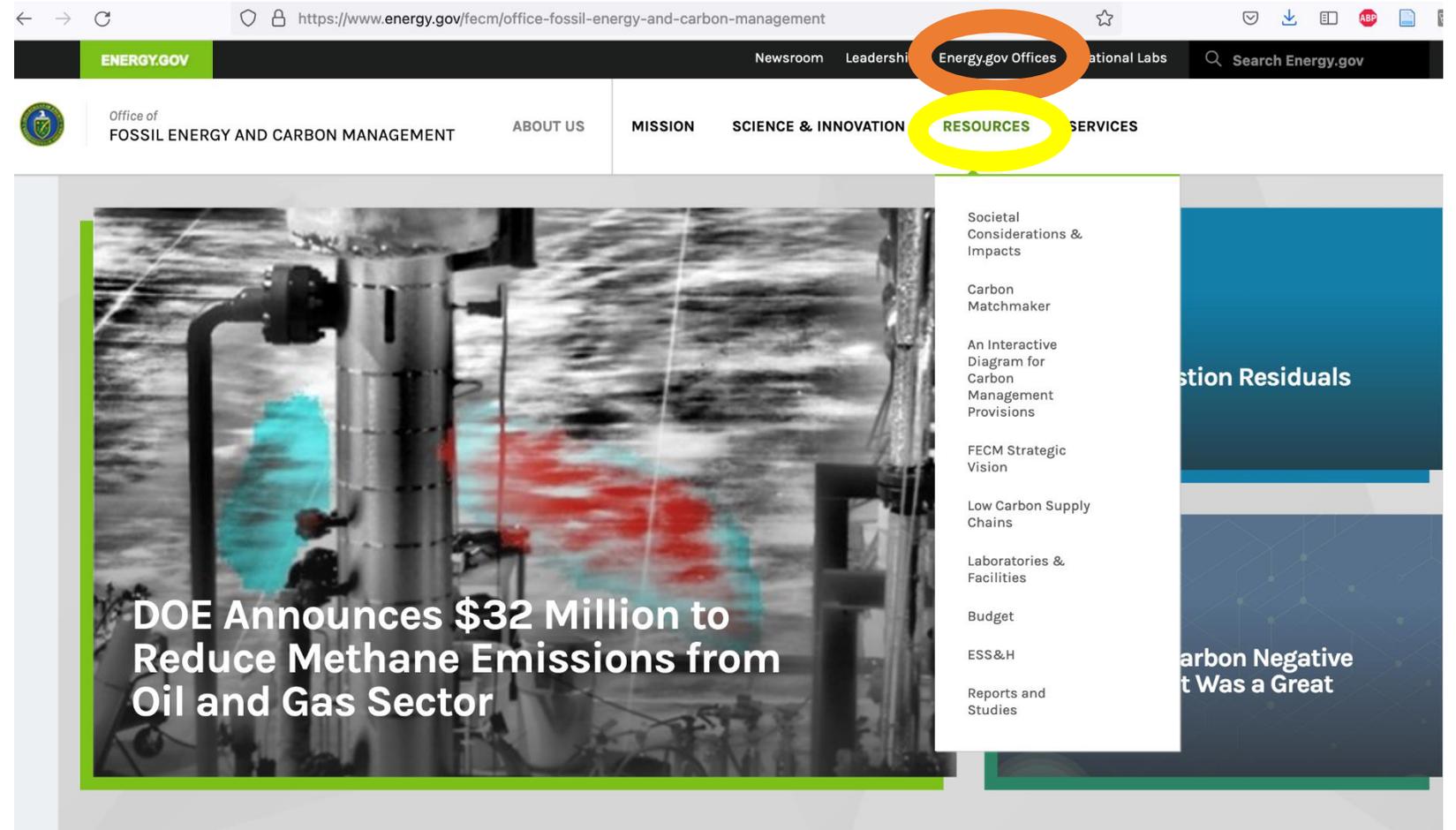
Implementation: To achieve Y, [specific actor] has to do Z [in specific timeframe]

Program	Office	Award (up to)	Project	Date
Carbon Capture Demonstration Projects Program - FEED	OCED & FECM	\$189 million Up to 20 studies	Front-end engineering design studies	Response 12/5/22
Carbon Capture Demonstration Projects Program - Full program	OCED & FECM	\$2.54 billion 6 demonstration projects	<ul style="list-style-type: none"> • Support design, construction, operation of integrated carbon capture demonstration projects + transport and storage • Readily replicated at fossil power plants and major industrial CO2 sources (cement, pulp/paper, iron/steel, chemical) 	Later in 2022
Carbon Storage Validation and Testing (CarbonSAFE) Initiative	FECM	\$2.25 billion	<ul style="list-style-type: none"> • Support development of new/expanded large-scale, commercial carbon storage projects (store+transport 50 mil+ metric tons) • Focus on detailed site characterization, permitting, construction 	Response 11/28/22
Carbon Dioxide Transport Engineering and Design	FECM	\$100 million	<ul style="list-style-type: none"> • Design regional CO2 pipeline networks to transport CO2 from source to centralized locations • Focus on transport costs; transport network configurations; technical and commercial considerations to support development/deployment of carbon capture, conversion, storage at commercial scale 	Response 11/28/22



Guidance documents

- **Process:** Steps for creating a plan and advice on how to go about it
- **Content:** A walk-through of required elements, with details about what they might look like
- **Frequently asked questions and resources**



The screenshot shows the Energy.gov website interface. The URL in the browser is <https://www.energy.gov/fecm/office-fossil-energy-and-carbon-management>. The navigation bar includes 'ENERGY.GOV', 'Newsroom', 'Leadership', 'Energy.gov Offices', and 'National Labs'. Below this, the 'Office of FOSSIL ENERGY AND CARBON MANAGEMENT' is identified, with a menu containing 'ABOUT US', 'MISSION', 'SCIENCE & INNOVATION', 'RESOURCES', and 'SERVICES'. The 'RESOURCES' menu is highlighted in yellow and contains the following items: 'Societal Considerations & Impacts', 'Carbon Matchmaker', 'An Interactive Diagram for Carbon Management Provisions', 'FECM Strategic Vision', 'Low Carbon Supply Chains', 'Laboratories & Facilities', 'Budget', 'ESS&H', and 'Reports and Studies'. A large image of an offshore oil rig is featured, with a text overlay that reads: 'DOE Announces \$32 Million to Reduce Methane Emissions from Oil and Gas Sector'. To the right of the image, there are partial views of other content blocks, including 'Carbon Residuals' and 'Carbon Negative'.



Thank You!

For more information, please visit: energy.gov/OCED

Email: OCED@hq.doe.gov



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