



An Equitable Energy Future

Yasmin Yacoby
Deputy Chief of Staff

Office of Economic Impact and Diversity, U.S. Department of Energy

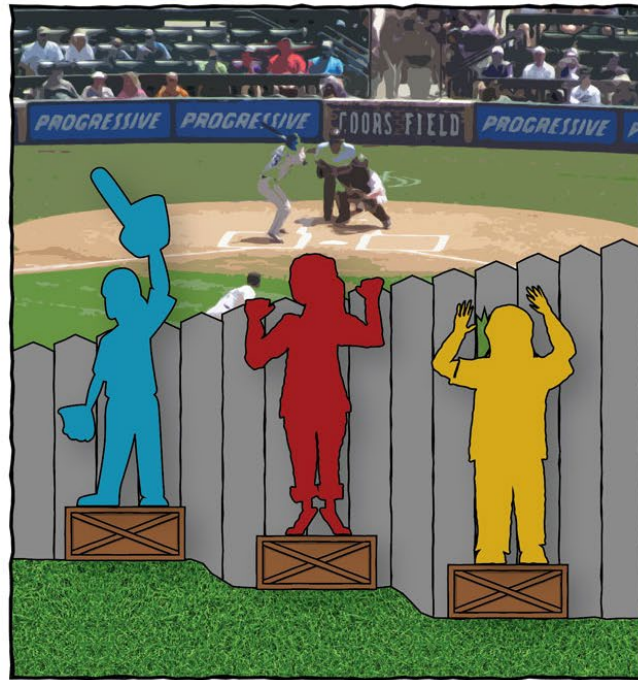
December 13, 2022



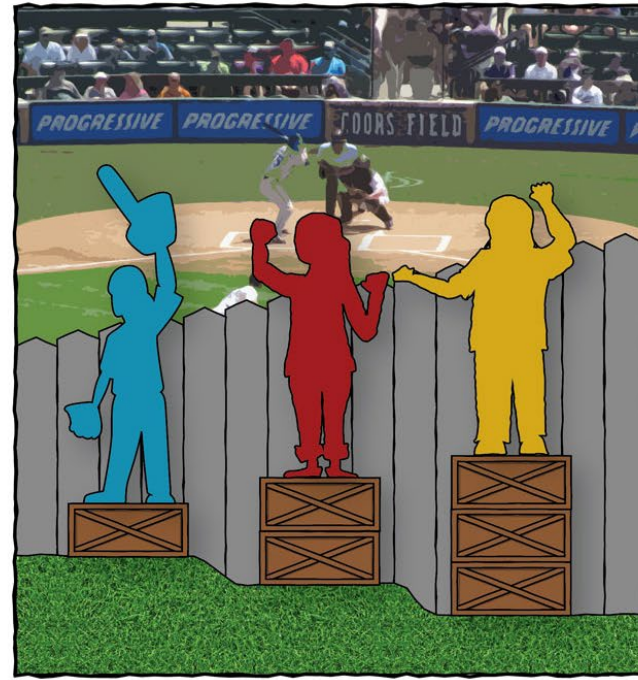
U.S. DEPARTMENT OF
ENERGY

OFFICE OF
ECONOMIC IMPACT AND DIVERSITY

Equality vs. Equity



EQUALITY

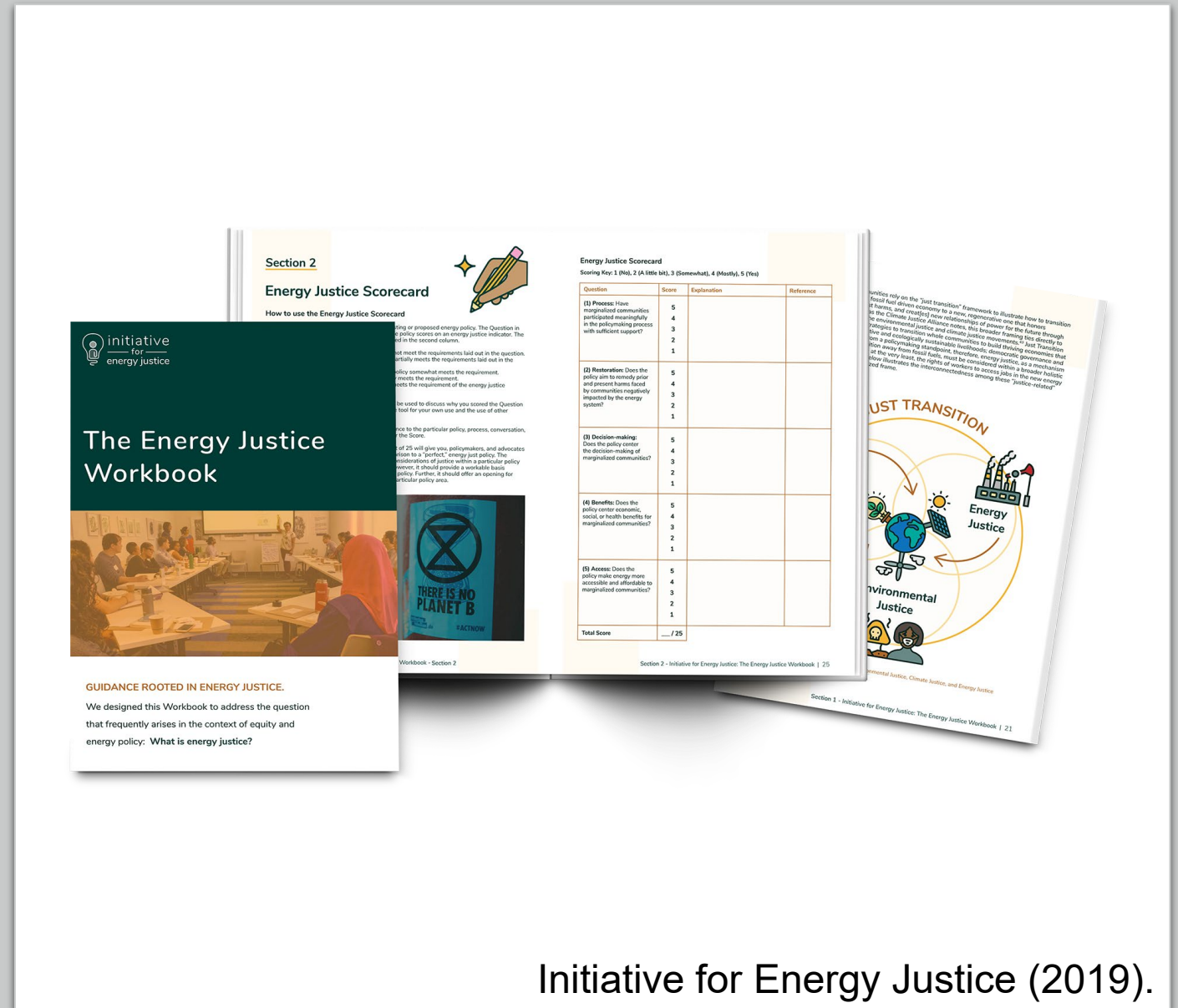


EQUITY

What is energy justice?

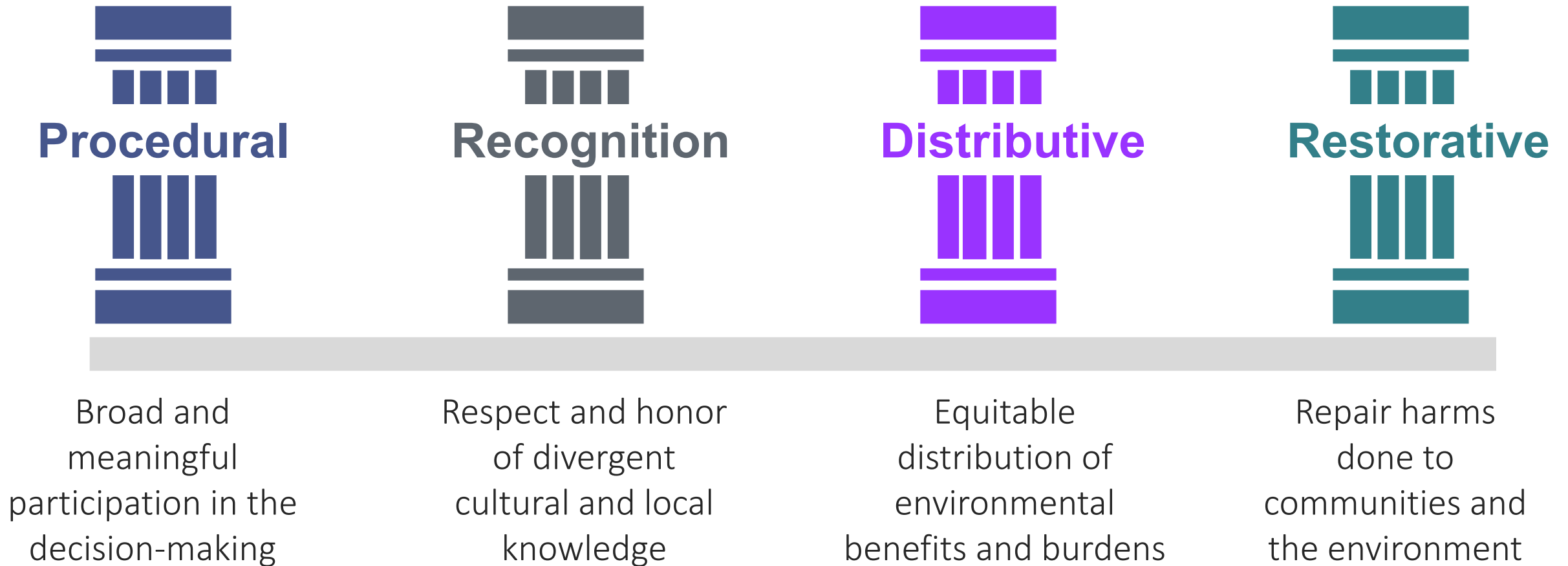
Energy justice refers to the goal of achieving **equity** in both the **social** and **economic** participation in the energy system, while also **remediating** social, economic, and health **burdens** on those historically harmed by the energy system (“frontline communities”).

Energy justice explicitly **centers** the concerns of frontline communities and aims to make energy more accessible, affordable, clean, and democratically managed for all communities.



Initiative for Energy Justice (2019).

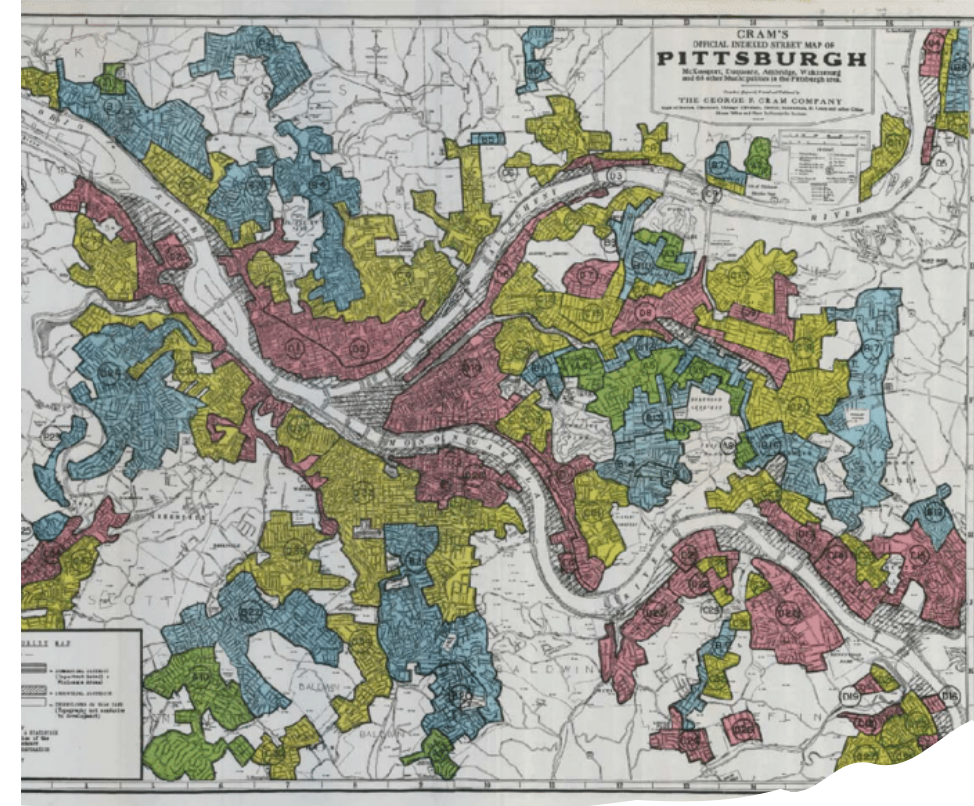
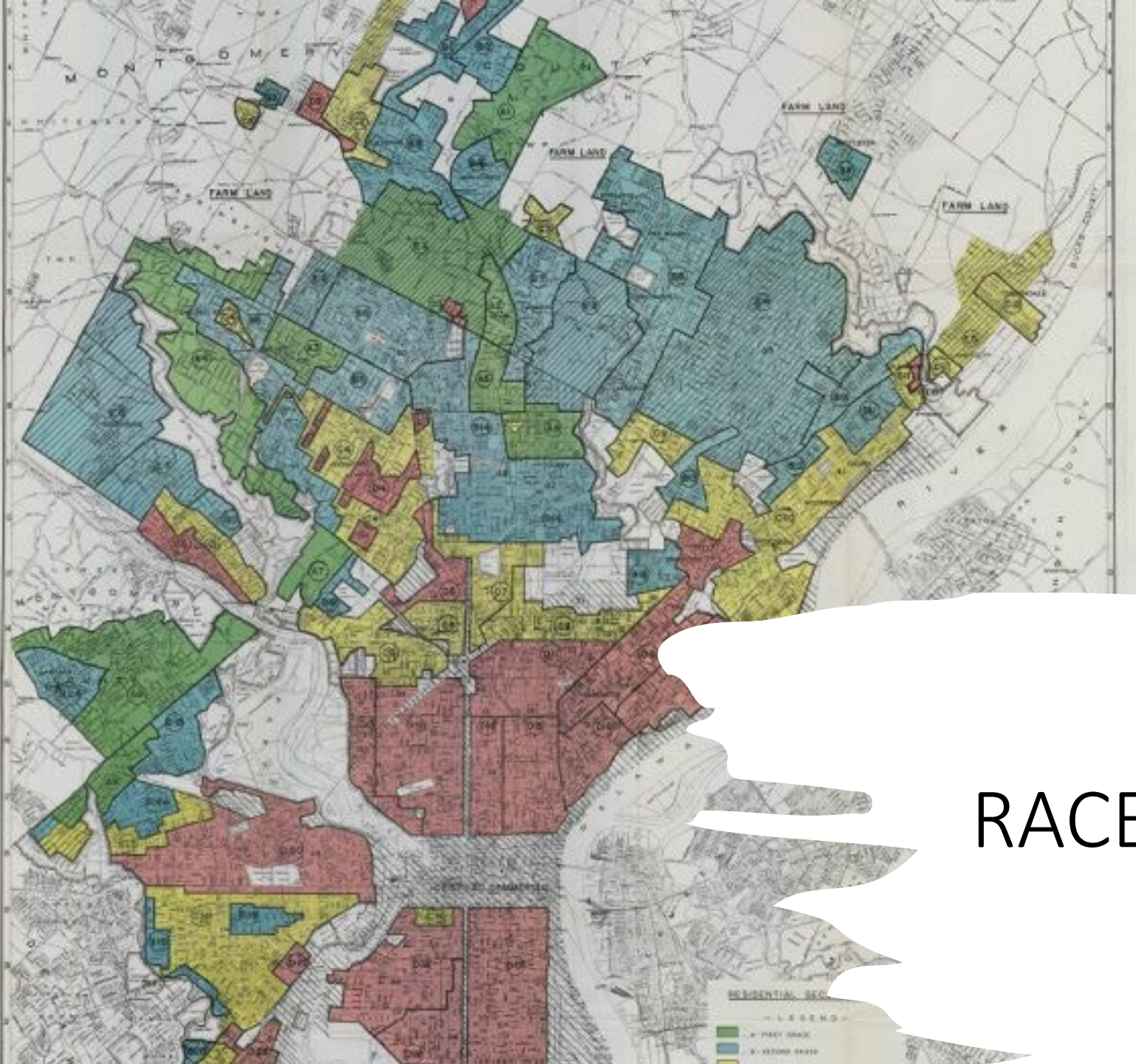
Tenets of Energy and Environmental Justice



Heffron and McCauley, The Concept of energy Justice Across the Disciplines, 105 Energy Policy 658, 659 (2017)

Our Energy System Is Inequitable





RACE & REDLINING

A National Energy Insecurity Crisis

Bloomberg

US Edition ▾

A 'Tsunami of Shutoffs': 20 Million US Homes Are Behind on Energy Bills

Surging electricity prices spur worst-ever crisis in late utility payments.

By Will Wade and Mark Chediak

August 23, 2022 at 6:30 PM EDT

POWERLESS IN THE PANDEMIC 2.0

By Jean Su and Christopher Kuveke¹

Center for Biological Diversity, BailoutWatch, and Tiger Moth LLC

FAMILIES HAD THEIR POWER CUT MORE THAN 3.6 MILLION TIMES (3,635,518) between January 2020 and December 2021. Disconnections **INCREASED 79%** between 2020 and 2021.

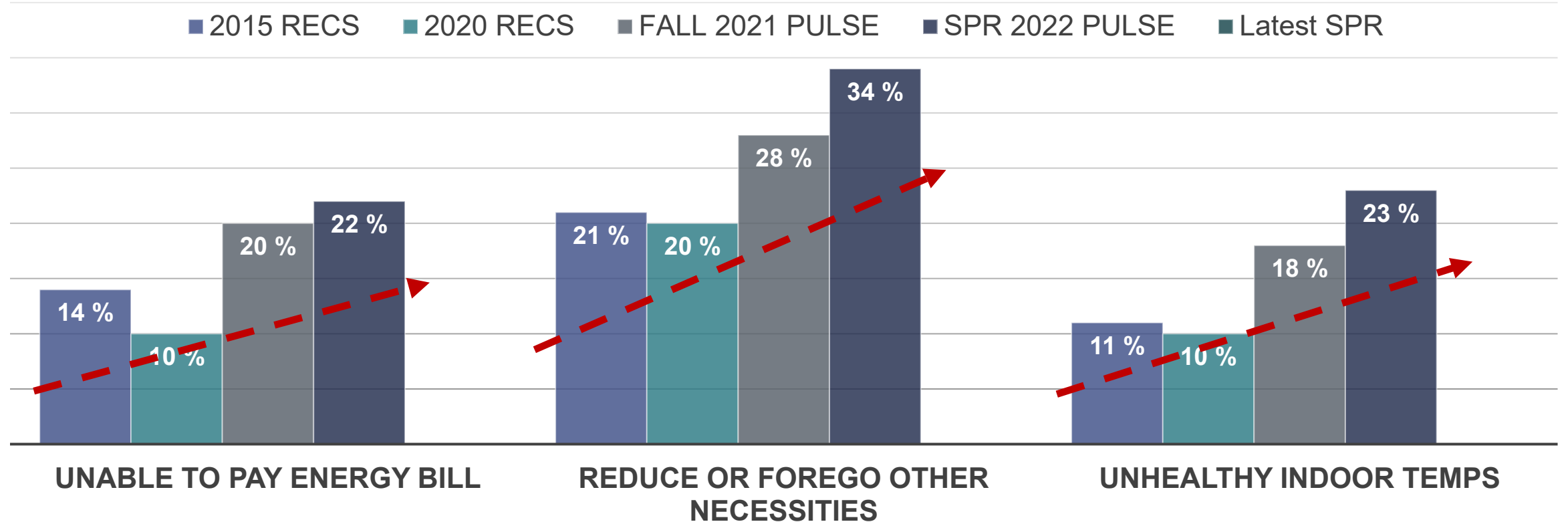
Energy insecurity is:

- **The inability** to adequately meet **household energy needs**, and includes **physical, economic, and behavioral** dimensions that lead to or exacerbate adverse health issues
- A **multi-dimensional** construct that describes the interplay between **physical conditions of housing, household energy expenditures** and energy-related **coping strategies** ([Hernandez](#), 2016)

National Energy Insecurity Stats

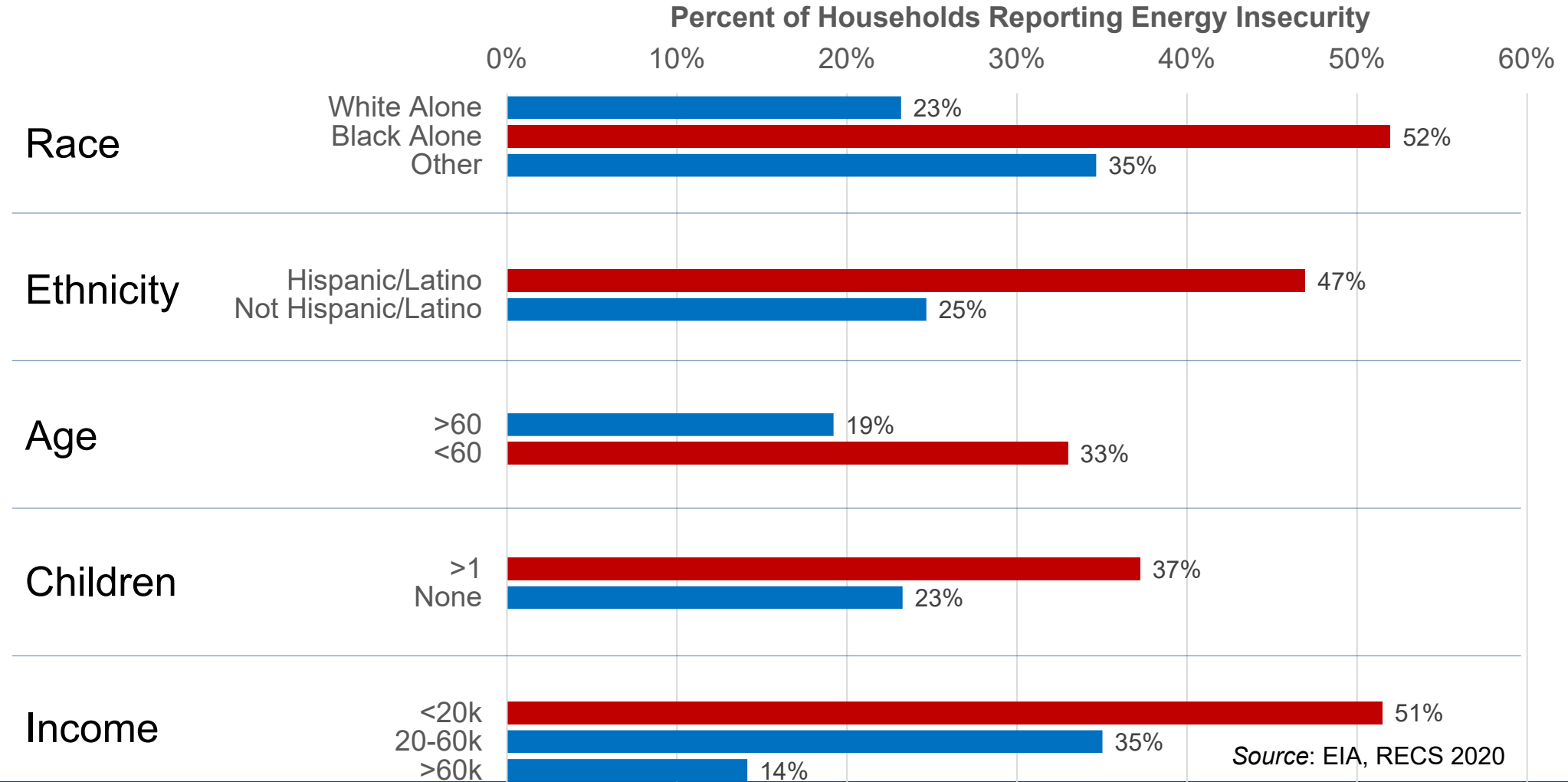
% of US Households Experiencing Energy Insecurity

**As of October 2022*



Sources: US Census Household Pulse Survey, 2021- 2022;
US Energy Information Administration, RECS 2020

Energy insecurity correlates with socio-demographic characteristics





Our Grand Challenge
How do we transform our energy system while ensuring it becomes more equitable and just?



Justice40 as a Just Energy Transition Framework

What is Justice40?

EO 14008 – Tackling the Climate Crisis at Home and Abroad

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

**Federal
investments**




**40% of the
overall benefits**



**Disadvantaged
communities**



Justice40 Policy Priorities

- 
1. **Decrease** energy burden in disadvantaged communities (DACs).
 2. **Decrease** environmental exposure and burdens for DACs
 3. **Increase** parity in clean energy technology (e.g., solar, storage) access and adoption in DACs.
 4. **Increase** access to low-cost capital in DACs.
 5. **Increase** clean energy enterprise creation and contracting (MBE/DBE) in DACs.
 6. **Increase** clean energy jobs, job pipeline, and job training for individuals from DACs.
 7. **Increase** energy resiliency in DACs.
 8. **Increase** energy democracy in DACs.

DOE's Justice40 Covered Programs

23

Program Offices

144

Covered Programs

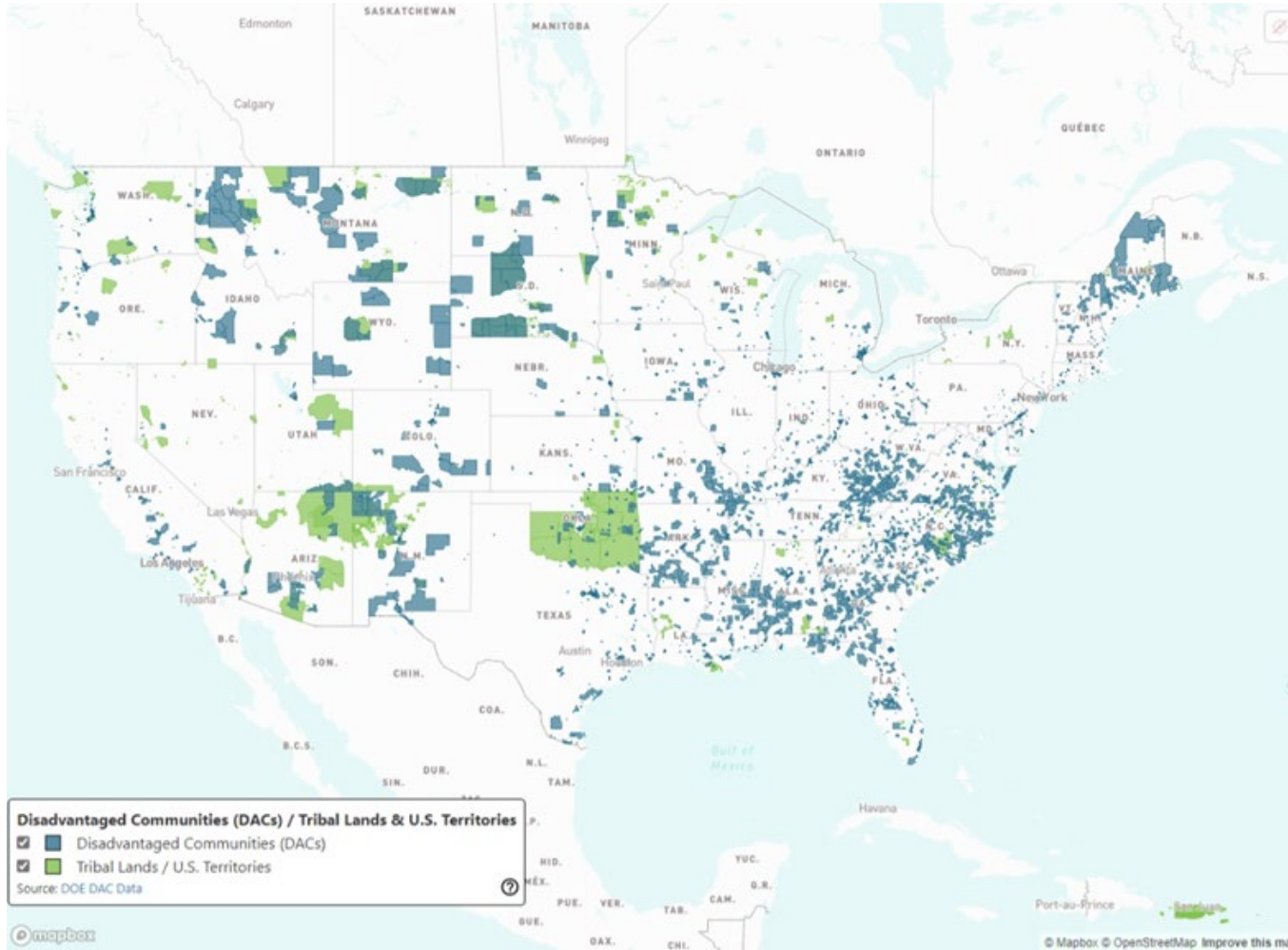
Department of Energy's 140+ Justice40 covered programs list is organized by office. A program name that begins with BIL, is a new program created by the Bipartisan Infrastructure Law. Please click on an office to learn more about the Justice40 covered programs in that office.

ADVANCED RESEARCH PROJECTS AGENCY - ENERGY (ARPA-E)	+
BONNEVILLE POWER ADMINISTRATION (BPA)	+
FEDERAL ENERGY MANAGEMENT PROGRAM (FEMP)	+
GRID DEPLOYMENT OFFICE (GDO)	+
LOAN PROGRAMS OFFICE (LPO)	+
OFFICE OF CLEAN ENERGY DEMONSTRATIONS (OCED)	+

Learn more: <https://www.energy.gov/diversity/doe-justice40-covered-programs>

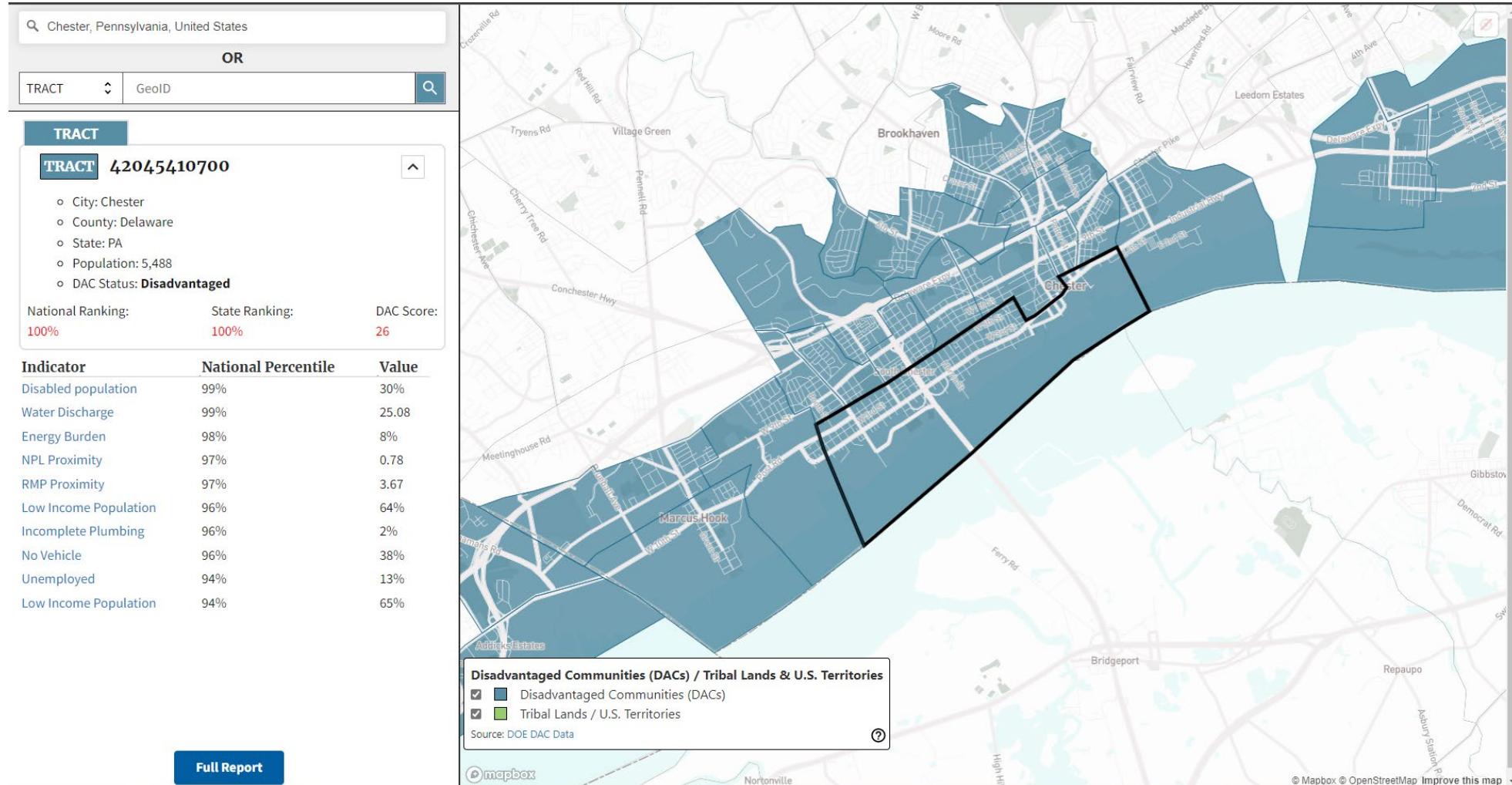
As of 7/25/22

DOE Disadvantaged Community Working Definition



- **Cumulative Burden.** 36 Indicators in 4 Categories: Energy burden; Fossil dependence; Socioeconomic/demographic associated vulnerabilities; and Climate/environmental hazard exposures
- **Thresholds.** Census tract must have at least 30% low-income households and rank in the 80th percentile of cumulative sum of 36 indicators (Top 20% most disadvantaged)
- **Distribution.** 13,581 (~19%) census tracts categorized as disadvantaged
- **Tribes & Territories.** Federally recognized tribal land and U.S. territories, in their entirety, categorized as disadvantaged communities
- **Online Tool.** Explore the working definition tool <https://energyjustice.egs.anl.gov/>

DOE Disadvantaged Community Working Definition

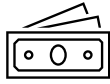

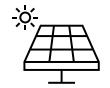







Measuring and Tracking Benefits

Under Justice40, DOE Program Offices will establish metrics, measure, and report on the applicable benefits (or potential harms) that their respective programs can have in a community related to these priorities.

POLICY PRIORITY	EXAMPLE BENEFIT	EXAMPLE METRIC
Decrease energy burden	Reduction in energy costs due to technology adoption	Annual energy expenditures in DACs before and after program intervention
Decrease environmental exposure and burdens	Reduction in local pollutant emissions	Measurement of local pollutant in DACs before and after program intervention
Increase clean energy access	Increase access to clean energy serving DACs	Percentage of local electricity generation mix from clean energy that serves DACs

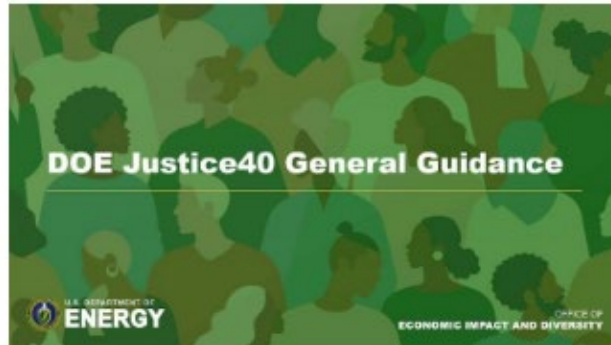
Example Benefit Metrics Mapped to Policy Priorities

Benefit Category	Metric	Measurement	
Reducing energy burden	Reduction in energy costs due to technology adoption	\$ saved in energy expenditures due to technology adoption	
Reducing environmental burden	Reduction in local pollutant emissions	Avoided air pollutants (CO ₂ , NO _x , SO ₂ , PM _{2.5})	
Increase clean energy access	Increase access to clean energy serving disadvantaged communities	Clean energy resource (MWh) adopted	
Increase access to low-cost capital	Increase capital access in disadvantaged communities	\$ spent by source and purpose and location	
Increase enterprise creation	Increase contracts to minority & disadvantaged businesses	# of contracts and/or \$ awarded to minority & disadvantaged businesses	
Increase clean energy jobs & training	Increase clean energy jobs in disadvantaged communities	# of jobs created in disadvantaged communities	
Increase resilience	Increase community resilience	# and size (MWh) of community resilience infrastructure deployed (e.g., battery storage)	
Increasing energy democracy	Increased stakeholder engagement	# of events and/or \$ spent engaging organizations and residents	

Justice40 Resources

Guidance and Factsheets

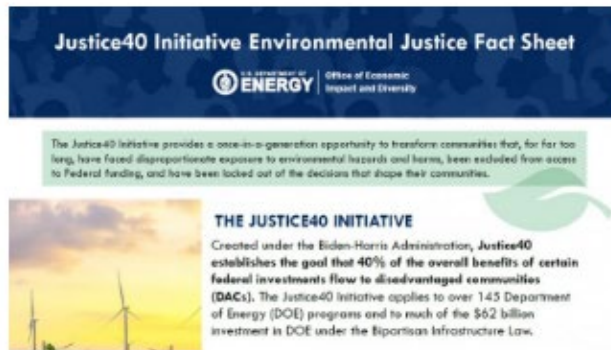
DOE Justice40 General Guidance



Justice40 Factsheet



Environmental Justice Explainer



Justice40 Covered Program Highlights



Visit: www.energy.gov/justice40

Justice Requires Building Equity into Early-stage R&D

Consider the whole research life cycle

Distribution of hazard exposure during research life cycle



Hidden process costs

Broaden the knowledge guiding our research

Breadth of pre-existing knowledge review



Distribution of research results

Expanding our solution parameter space

Identification of set vs. flexible parameters

“Embedding Justice Throughout Research & Development: A Metrics Framework ,” National Renewable Energy Laboratory (NREL) (2022) (unpublished manuscript).



Justice requires everyone being all in on Day 1.



Braiding equity into programs, policies, procurement, and hiring on Day 1.



Building a team that looks like America on Day 1.

Building a diverse supply chain on Day 1.





Making place-based commitments on Day 1.



Listening to Communities on Day 1.



Thank you!

Yasmin Yacoby

Deputy Chief of Staff

Office of Economic Impact and Diversity

U.S. Department of Energy

Yasmin.Yacoby@hq.doe.gov