Energy Improvements in Rural or Remote Areas Workshop: Day 1

Courtney Haynes
Stakeholder Engagement Specialist, Energy Improvements in Rural or Remote Areas (ERA)
Office of Clean Energy Demonstrations (OCED)
November 1, 2022

Housekeeping

This meeting is being recorded
- Discussion is not for attribution or publication
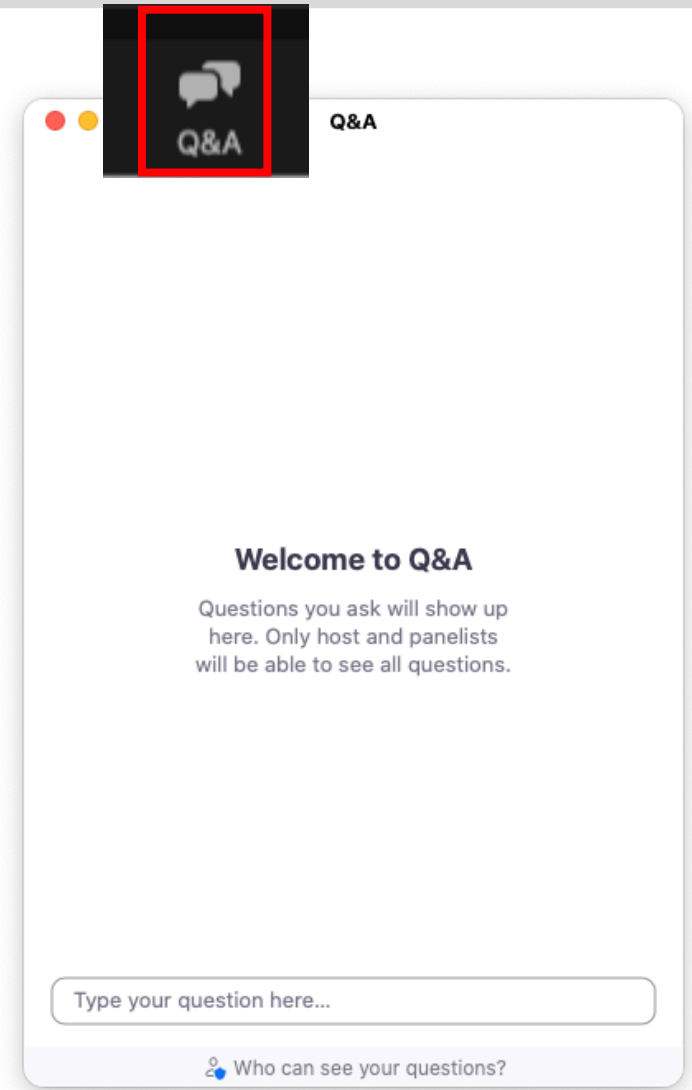- Recording and slides to be posted on energy.gov/OCED

Your microphone and camera are disabled for the webinar

Have a question?
- Please submit questions using the "Q&A" panel
- We will answer as many questions as possible during the webinar

Zoom controls are located at the bottom of your screen
- If they aren't appearing, move your cursor to the bottom edge

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Time	Topic	Format	Speakers	Description
2-2:15 p.m.	Welcome and Introduction	Presentation	MC: Courtney Haynes, Stakeholder Engagement Specialist, OCED	• Welcome and introductions • Purpose and collaborative objectives
2:15-3 p.m.	Why It Matters	Presentation	OCED Staff: • Regina Galer, Program Manager, ERA • Sarah Moore, Technology Policy Fellow, DOE	• Office of Clean Energy Demonstrations intro • ERA program overview and how it relates to the Bipartisan Infrastructure Law • ERA provision priorities • RFI Overview
3-4 p.m.	What to Expect and How to Prepare	Panel and Q&A	OCED Staff: • Melissa Klembara, Director of Portfolio Strategy • Jill Capotosto, Energy Justice Liaison	• OCED Project Management approach • Justice 40 and equity and environmental justice overview • Technical assistance potential
4 p.m.	Adjourn	Presentation	MC: Courtney Haynes, Stakeholder Engagement Specialist, OCED	• Preparation for two-day dialogue

OCED Office of Clean Energy Demonstrations

Energy Improvements in Rural or Remote Areas Workshop

Regina Galer & Sarah Moore

Program Manager, Energy Improvements in Rural or Remote Areas (ERA)

Office of Clean Energy Demonstrations (OCED)

November 1, 2022

ERA Program Vision

Improve the resilience, safety, reliability, and availability of energy in rural or remote areas, and reduce the adverse impacts of energy generation.

Benefit communities and their economies

**Create good-paying jobs**

Reduce carbon pollution

- "Rural or remote" = incorporated or unincorporated areas of 10,000 or less.
- Demonstration projects that accelerate market adoption and the equitable transition to a decarbonized energy system.

ERA Program Authorization

Program Details:

- **$1B** available through 2026
- Emphasis on **economic development** and **environmental justice**, lasting beyond chosen projects
- First solicitation: **2023**
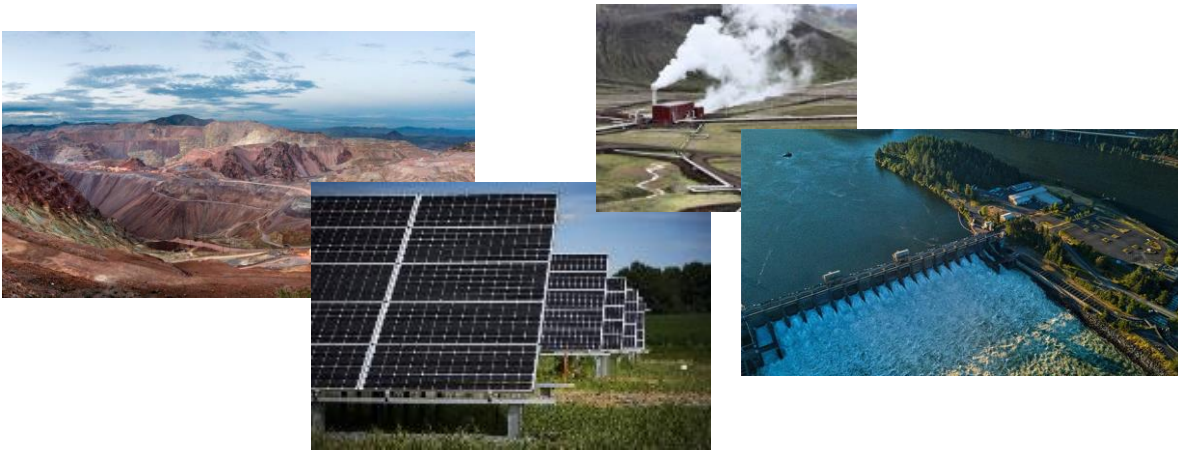
Authorized purposes:

- Overall cost-effectiveness of energy generation, transmission, or distribution systems;
- Siting or upgrading transmission and distribution lines;
- Reducing greenhouse gas emissions from energy generation by rural or remote areas;
- Providing or modernizing electric generation facilities;
- Developing microgrids; and
- Increasing energy efficiency

Focus on community and worker needs, justice equity:

- Address the energy needs and capacity of rural or remote communities.

- Facilitate forming effective and trusting project partnerships.

- Provide technical assistance, as needed, to help program participants identify and address energy needs.

Workshop Goals and Objectives

Attendees:

- Understand the ERA program
- Interact and discuss project ideas, possible challenges and roadblocks

Office of Clean Energy Demonstrations:

- Feedback
- Network
- Input on program design

Next Steps:

- Workshops
  - Western US
    (Oct. 12-13, 2022)
  - Eastern US
    (Oct. 26-27, 2022)
  - Virtual
    (Nov. 1-2, 2022)
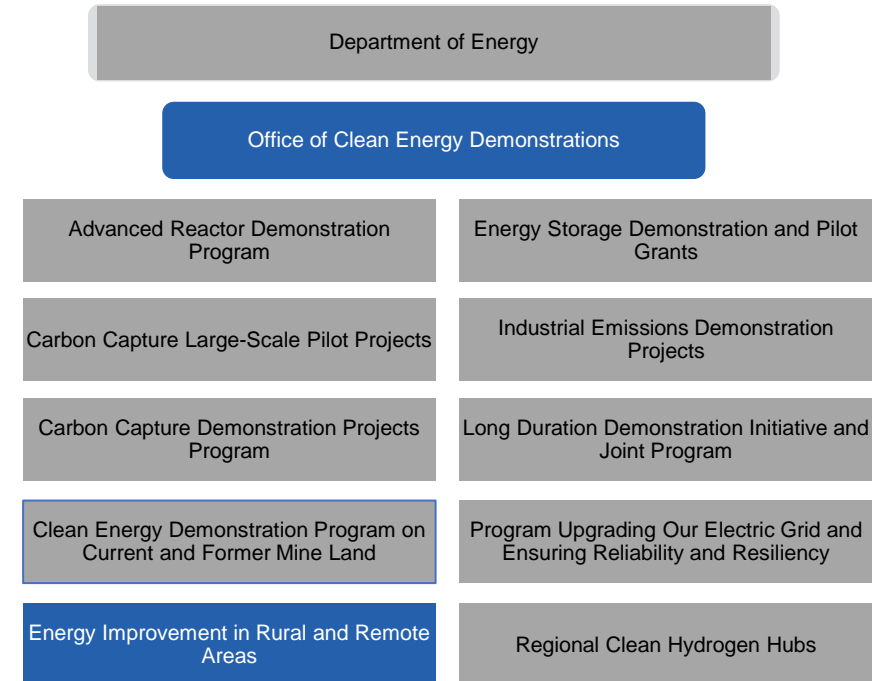- Funding Opportunity Announcement (2023)

Questions:
era@hq.doe.gov

What is the Office of Clean Energy Demonstrations?

Mission: "Deliver clean energy technology demonstration projects at scale in partnership with the private sector to **accelerate deployment**, **market adoption**, and the **equitable transition to a decarbonized energy system.**"

Source: energycommunities.gov

Department of Energy	
Office of Clean Energy Demonstrations	
Advanced Reactor Demonstration Program	Energy Storage Demonstration and Pilot Grants
Carbon Capture Large-Scale Pilot Projects	Industrial Emissions Demonstration Projects
Carbon Capture Demonstration Projects Program	Long Duration Demonstration Initiative and Joint Program
Clean Energy Demonstration Program on Current and Former Mine Land	Program Upgrading Our Electric Grid and Ensuring Reliability and Resiliency
Energy Improvement in Rural and Remote Areas	Regional Clean Hydrogen Hubs

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Demonstration characteristics

- Technology risk mitigation

- Business model risk mitigation

- Workforce risk mitigation

- Community impact risk mitigation

Elements of ERA program strategy

- Programmatic Design
  - Stakeholder engagement
  - Foundational analyses
- Competitive funding opportunities
  - Prize competitions
  - Grants and cooperative agreements
  - Other transaction authority and partnership intermediary agreements
- Technical assistance
- Ensuring enduring programmatic impacts
  - Measurement and validation
  - Creating connections between rural and remote areas
  - Interagency coordination

Request for Information

- Purpose: Solicit feedback on energy needs, project ideas, community benefits

- Information gathered in this RFI will inform program development

- Stakeholder Feedback:
  - Community: residents of rural or remote areas, environmental justice and energy justice organizations, community-based organizations, tribal organizations
  - Industry: clean energy industry and its investors
  - Government: federal and state regulatory agencies, state and local governments, American Indian Tribes and Alaska Native Villages
  - Workforce/Economic Impact: labor unions, workforce training organizations, economic development organizations
  - Other: Conservation and environmental groups, academic and other research institutions

Open Date: 10/11/22
Due Date: 11/28/22

Option to Call in RFI responses

Request for information: Category and Purpose

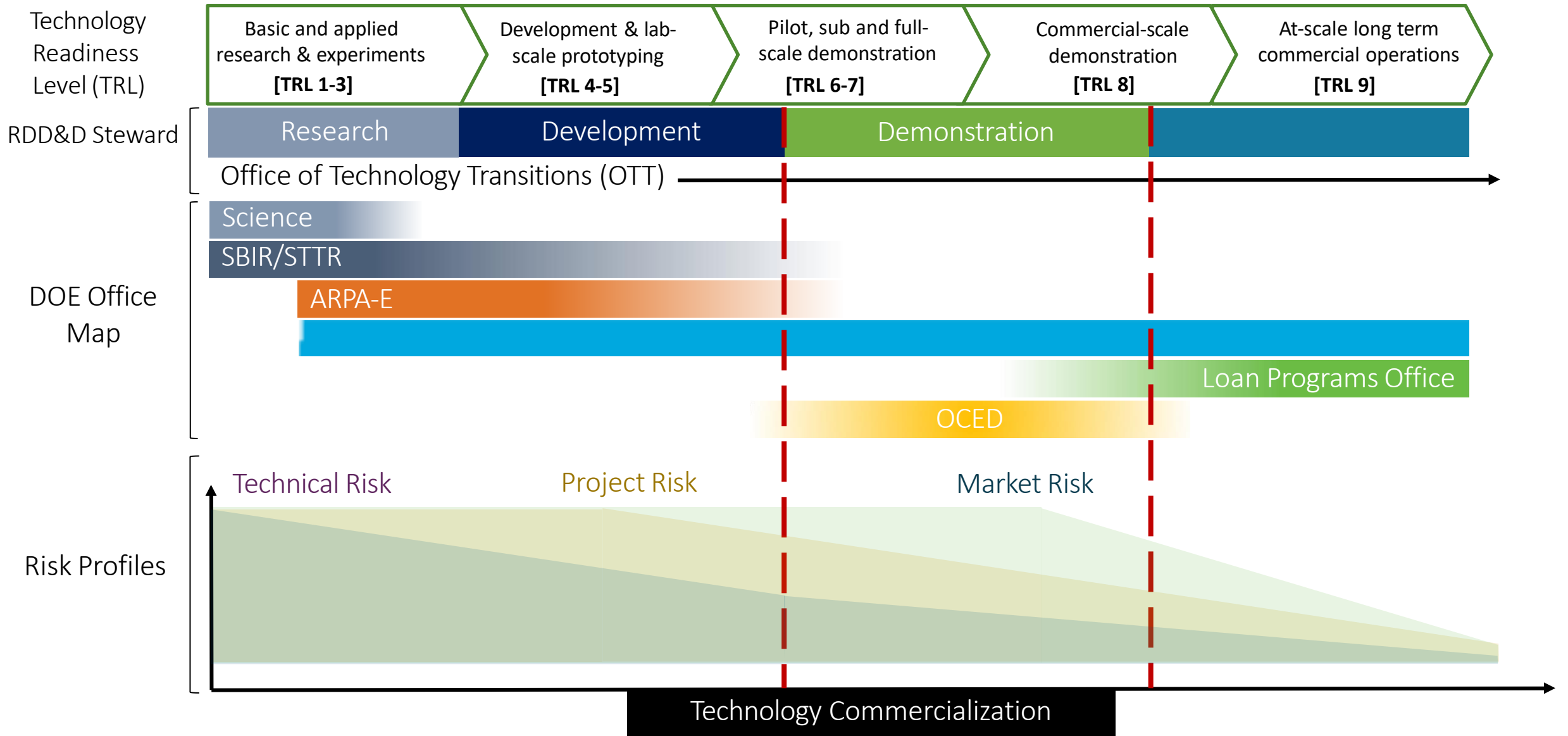| Category	Purpose
Respondent Characteristics	Understand the range of organizations and communities interested in the ERA program.
Potential Project Details	Assess potential demonstration projects and their attributes
Program Structure	Solicit feedback on the draft OCED program structure outlined in the RFI
Open	Solicit additional information not mentioned in previous categories

https://oced-exchange.energy.gov/

OCED Project Management Approach

Melissa Klembara
Director of Portfolio Strategy
Office of Clean Energy Demonstrations

OCED in Context of Clean Energy Ecosystem

Technology Readiness Level (TRL)

| Basic and applied research & experiments **[TRL 1-3]** | Development & lab-scale prototyping **[TRL 4-5]** | Pilot, sub and full-scale demonstration **[TRL 6-7]** | Commercial-scale demonstration **[TRL 8]** | At-scale long term commercial operations **[TRL 9]** |

RDD&D Steward

Research | Development | Demonstration

Office of Technology Transitions (OTT)

DOE Office Map

Science
SBIR/STTR
ARPA-E
Loan Programs Office
OCED

Risk Profiles

Technical Risk | Project Risk | Market Risk

Technology Commercialization

U.S. DEPARTMENT OF ENERGY | Office of Clean Energy Demonstrations

OCED Project Management Approach

Goal: Successful deployments that de-risk future, private sector investment

Process: Step-by-step roadmap with support and value-add delivery expertise

Upfront investment in a robust process ensures hand-in-glove partnership

Leveraging OCED PM excellence supports on-time and on-budget project delivery

Gated go/no-go points drive efficiency and de-risked delivery

Initial Application ☆

Go/No-Go ◇ Decisions

	Application Phase	Phase 1: Detailed Project Plan	Phase 2: Project Development	Phase 3: Construct & Integrate	Phase 4: Ramp-Up & Operate
	Pre - DOE funding	$[TBD] Funding, Up to 50% DOE Share, 12-18 Months	$[TBD] Funding, Up to 50% DOE Share, 2-3 Years	$[TBD] Funding, Up to 50% DOE Share, 3-4 Years	$[TBD] Funding, Up to 50% DOE Share, 2-4 Years
Engineering, Procurement, Construction	• Conceptual Design • Technical Readiness • Project Schedule • Total Project Cost Estimate	• Engineering & Design Documents • Technical Maturation Plans • Integrated Project Schedules	• Mature Engineering & Design • Technical Risk Management • Execution ready schedule & cost estimate, PM Tools	• Ongoing Execution Reporting • Interim Go/No-Go reviews	• Ongoing performance Reporting • Tech Risk Updates, Tracking • Final TPC accounting
Business Development & Management	• Business Strategy • Team Description • Workforce Plan • Finance Plan • Market potential analysis	• Project Management Plan • Risk Management Plan • Financial Modelling • Site Selection	• Finalized Project Structure, Management, Financing • Ongoing Risk Management • Final legal, workforce, procurement agreements	• Ongoing Execution Reporting • Ongoing Risk Management	• Updated financial analyses • Revised growth plans • Updated Risk Management
Permitting & Safety	• Safety Plan(s) • Regulatory Overview	• Safety Plan • Physical, Information, Cyber Security Plans • Environmental & Regulatory preparations	• Execution ready safety and security plans • Permits & Approvals in place for Construction	• Ongoing Permit and Environmental Reporting • Permits & Approvals in place for Operations	• Ongoing permit, safety, and security reporting
Community Engagement & Impacts	• Stakeholder Identification, • Communities Impact Analysis	• Community Development Analysis • Stakeholder Engagement	• Finalized DEI, EEJ, J40 Plans • Community Impact targets identified, tracking plans	• Ongoing reporting on community engagement activities	• Revised community engagement plans for operations • Ongoing impacts analysis
Technical Data & Analysis	• Lifecycle Emissions Analysis • Techno-economic Analyses	• Project Production Model • Updated Lifecycle Emissions and Technoeconomic Analysis	• Final Lifecycle Emissions & Technoeconomic Analyses • V&V and Project Completion Testing Plans	• Periodic analyses updates • V&V data collection • Project completion testing and performance ramp V&V	• Validated performance model • Finalize lifecycle and technoeconomic analyses • Dissemination of analyses, Lessons Learned

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Equity, Energy, and Environmental Justice

Jill Capotosto
Energy Justice Liaison

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
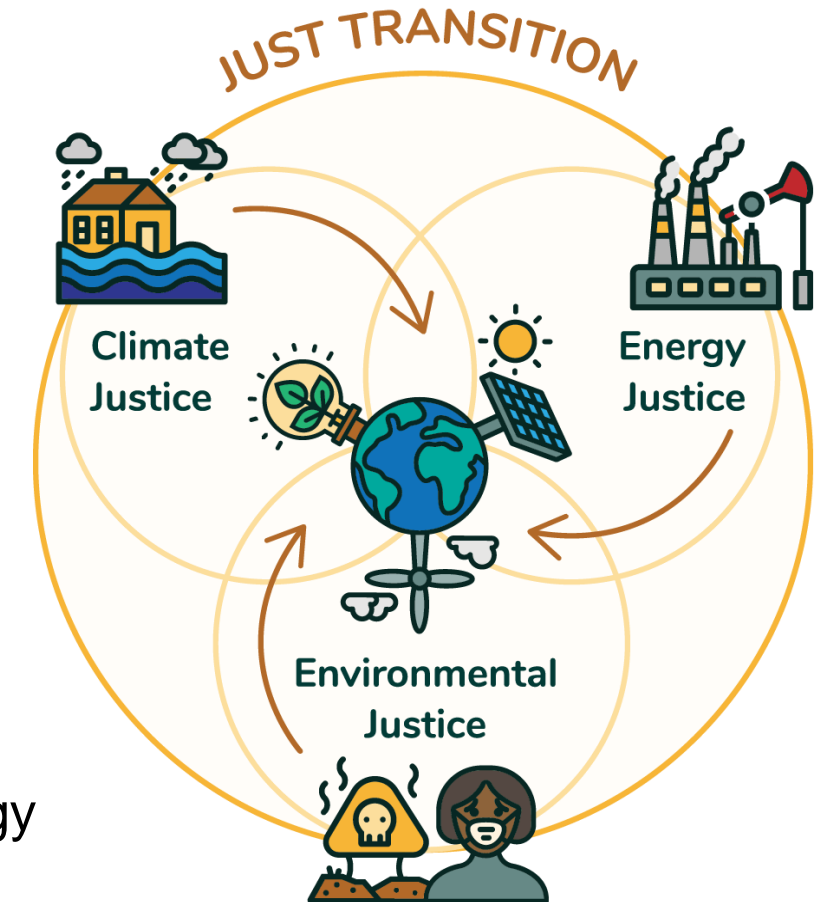
Initiative for Energy Justice Defining Energy Justice: Connections to Environmental Justice, Climate Justice, and the Just Transition

Justice40 - EO 14008 Sec 223

40% of overall benefits of certain federal investments flow to **disadvantaged communities**

40% is not calculated on a per project—individual projects may contribute more or less

40% of BENEFITS (including environmental and economic) not just direct investments

DOE has a working definition of disadvantaged communities, but projects do not need to be in a DAC to contribute to J40

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Our energy system is inequitable

Giles Clarke/Getty

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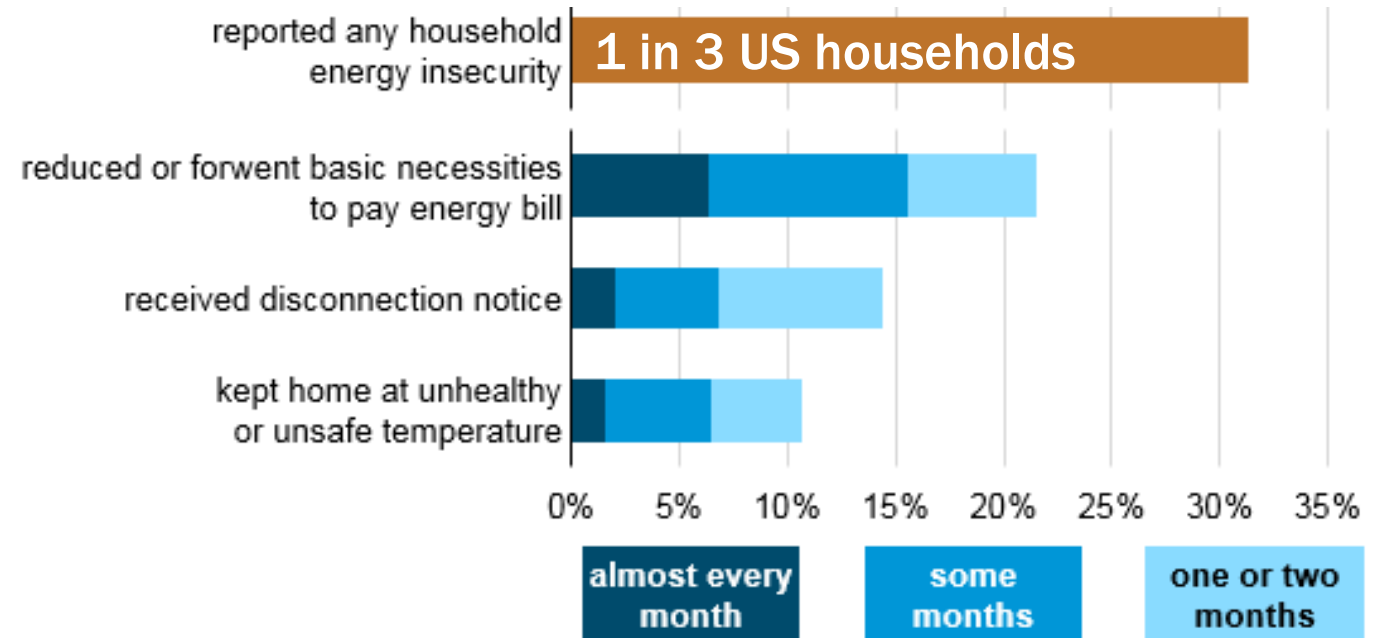
WWW.ENERGY.GOV/OCED

Energy burden and energy insecurity

Energy burden = household energy costs ÷ income

Energy insecurity:

inability to pay for basic energy needs (heat, cooling, light)

Households that experienced energy insecure situations, 2015

reported any household energy insecurity — **1 in 3 US households**

reduced or forwent basic necessities to pay energy bill

received disconnection notice

kept home at unhealthy or unsafe temperature

0% 5% 10% 15% 20% 25% 30% 35%

almost every month | some months | one or two months

eia

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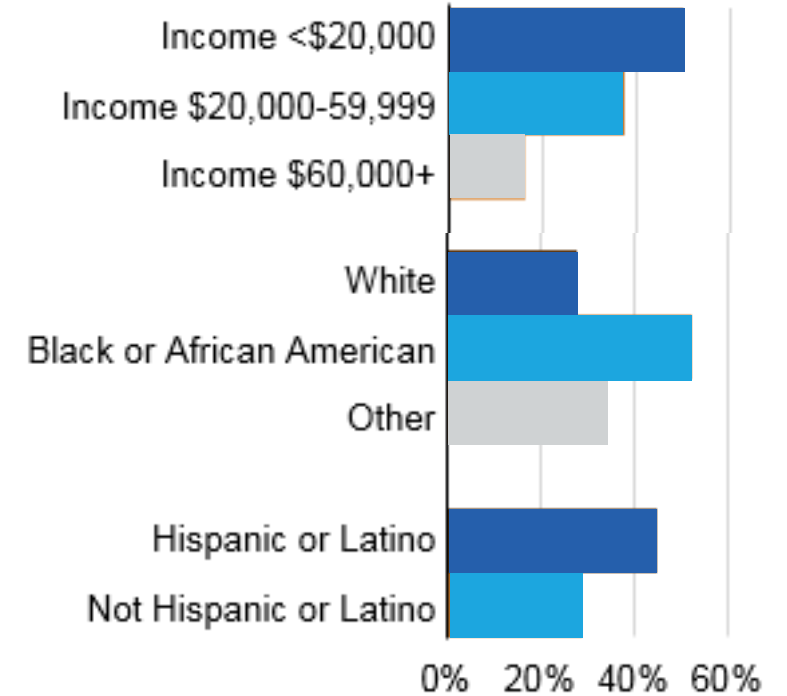Office of Clean Energy Demonstrations

Energy burden and energy insecurity in rural areas

Rural, metropolitan, and regional median energy burdens for all households
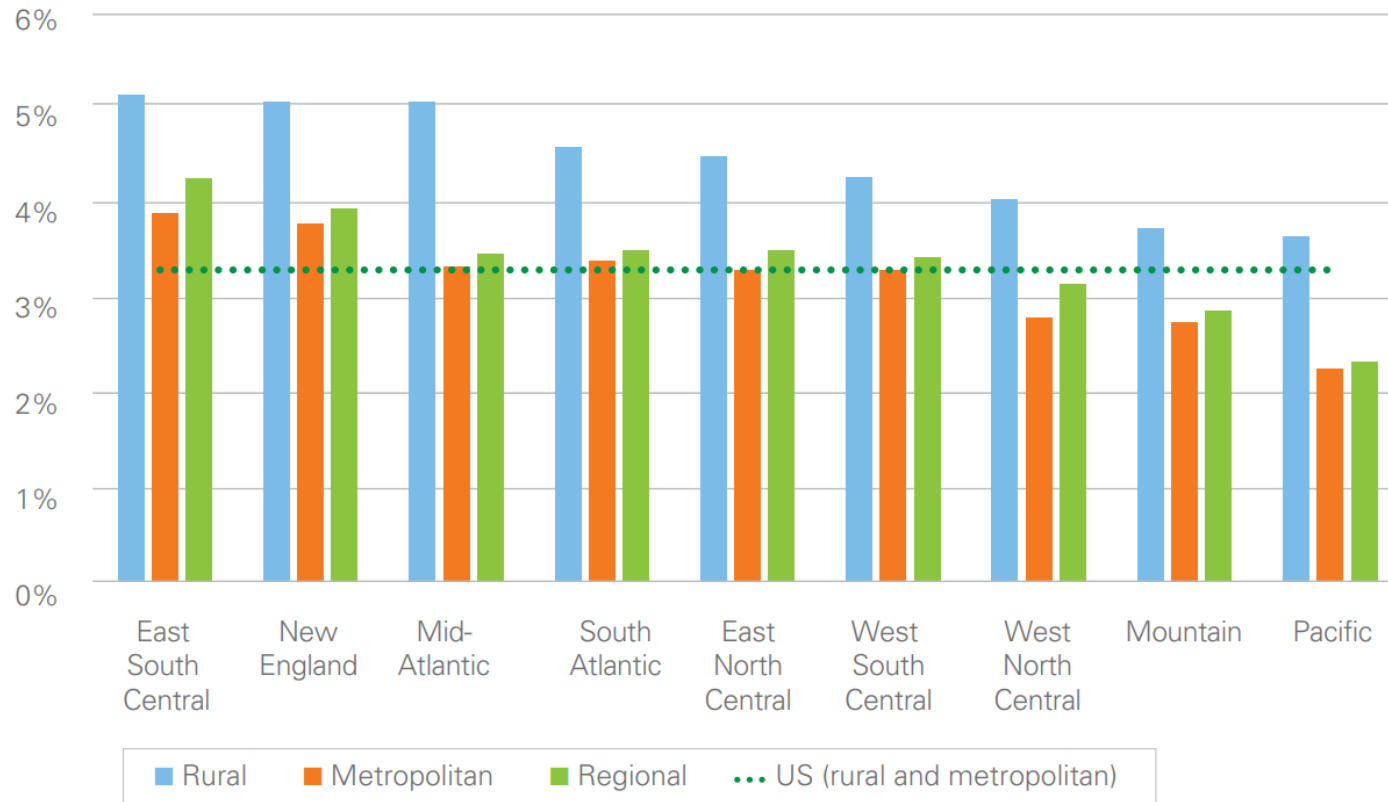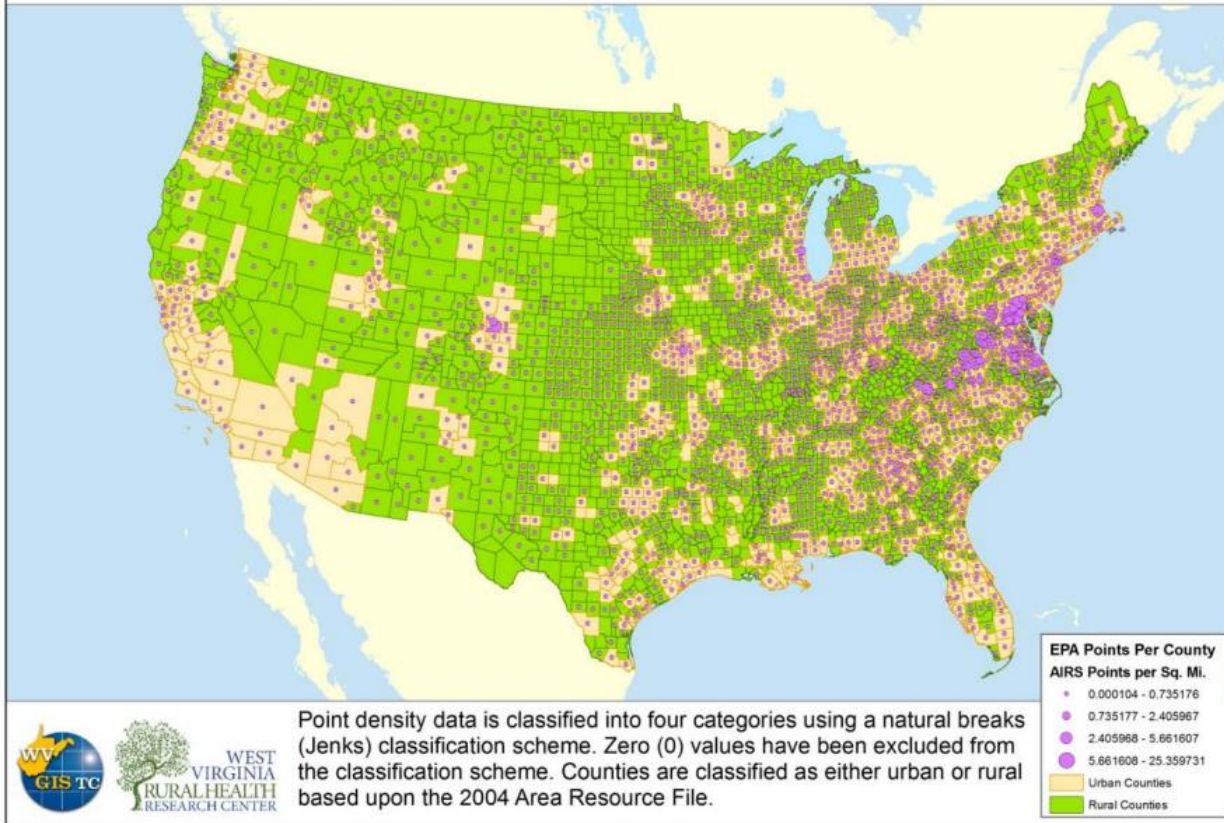
Household energy insecurity by household characteristics

(percent of households)
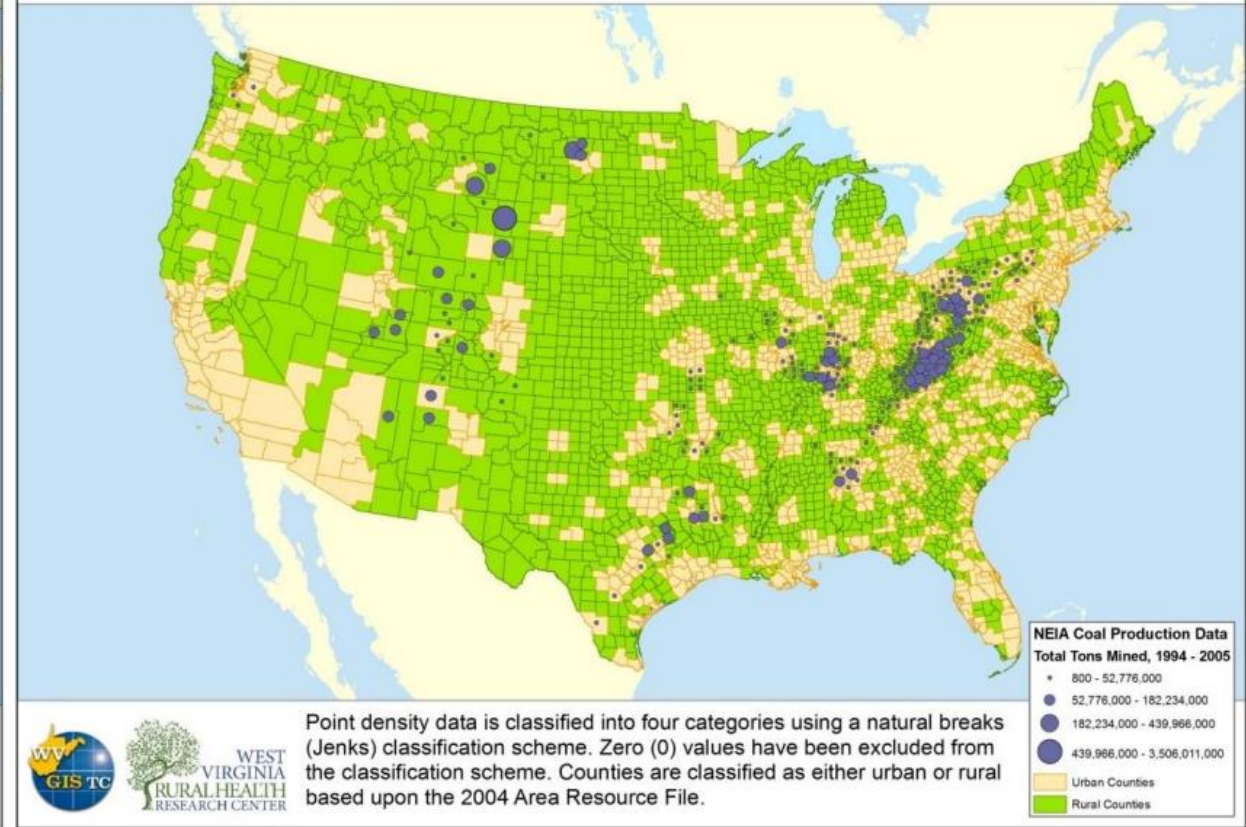
Exposure vs. monitoring

Air Pollution Monitoring Stations per Square Mile; Urban vs. Rural
West Virginia Rural Health Research Center

Coal Mining: Total Tons Mined, 1994-2005; Urban vs. Rural
West Virginia Rural Health Research Center

Pollution Sources and Mortality Rates across Rural-Urban Areas in the United States, 2010,
Michael Hendryx, Evan Fedorko, Joel A. Halverson (ruralhealthresearch.org)

Clean energy access

Percentages of Each Census Tract With and Without Existing Rooftop Photovoltaic Installations
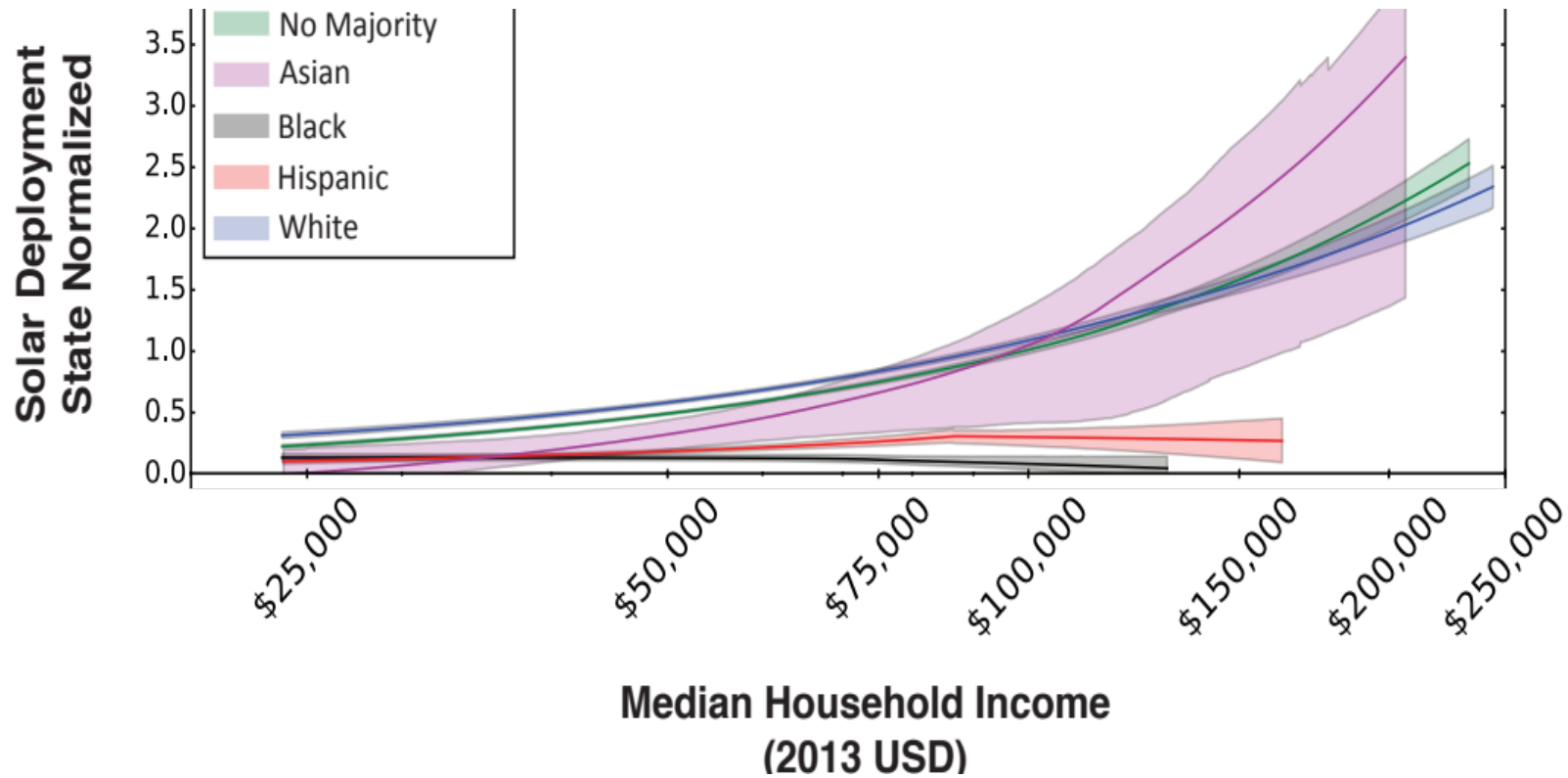
Sunter, D.A., Castellanos, S. & Kammen, D.M. Disparities in rooftop photovoltaics deployment in the United States by race and ethnicity. *Nat Sustain.* 71–76 (2019).

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

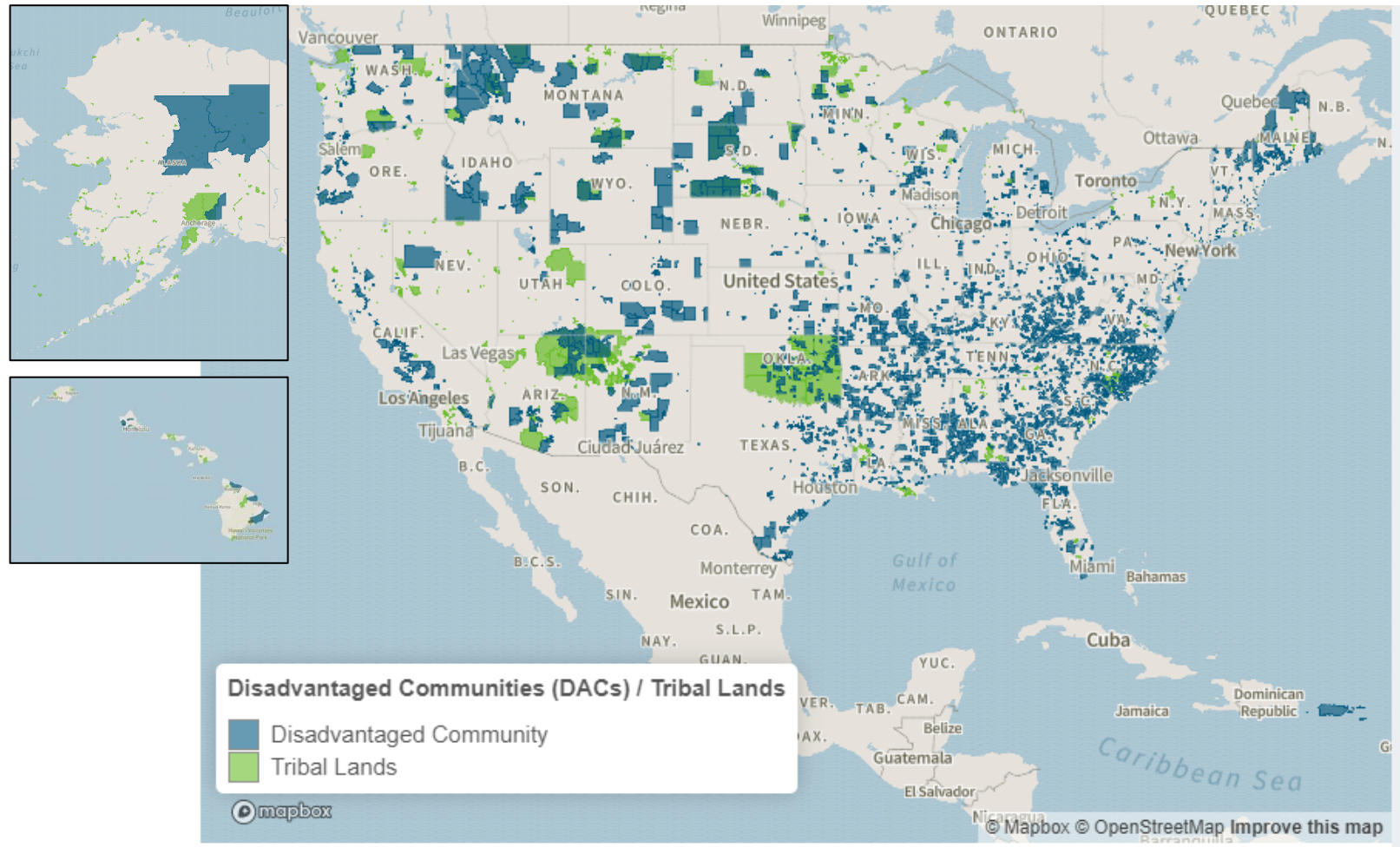Remediation of legacy pollution

Clean water/waste infrastructure

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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

Disadvantaged Communities (DACs) / Tribal Lands

Disadvantaged Community

Tribal Lands

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

- 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**

    → recent example includes Hydrogen Hubs FOA

- Supporting EJ TCTACs (applications due November 1)

Community Benefits Plan
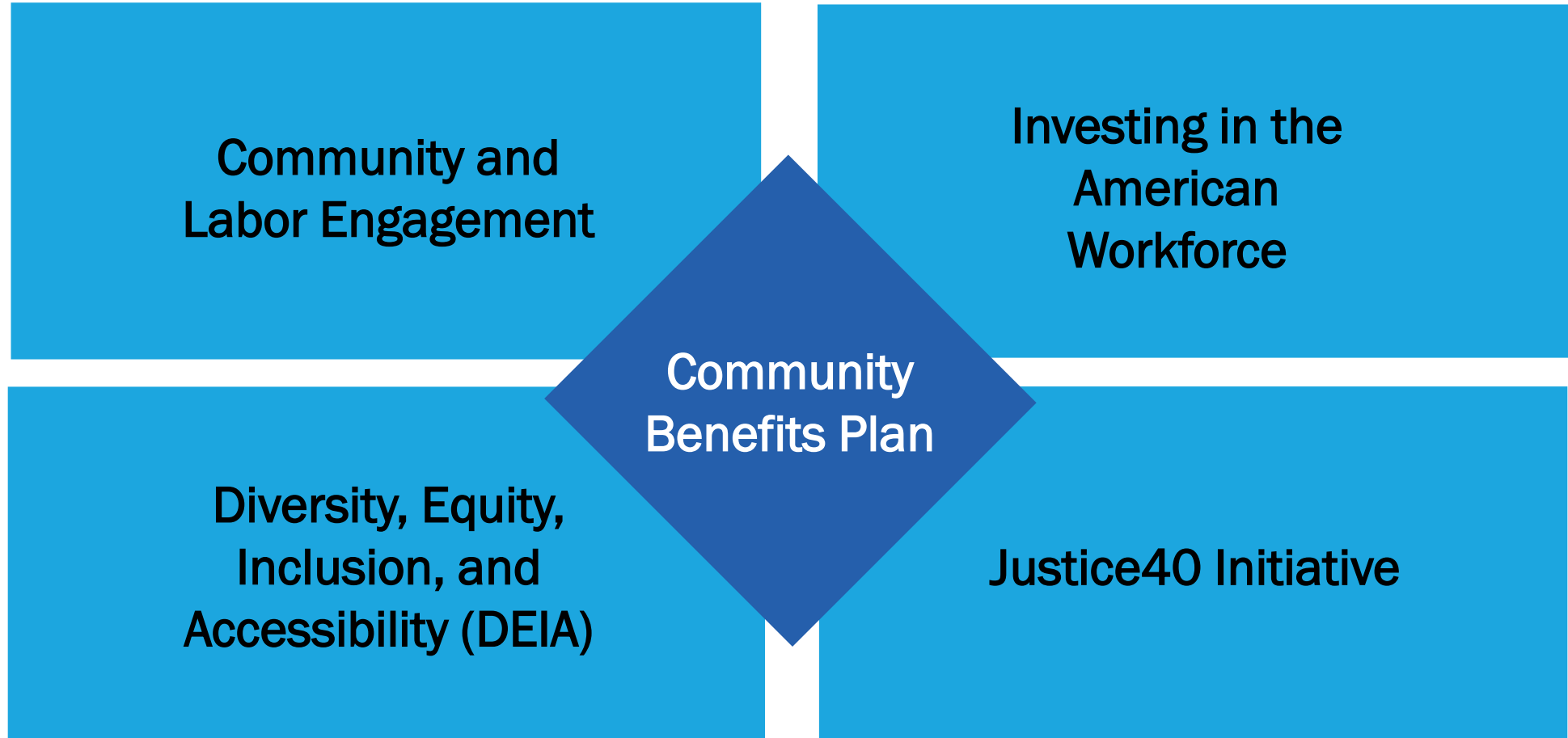
Priorities into action-oriented plans

| Vision | Assessment | Goals | Outcomes | Implementation |

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]

Community and Labor Engagement

- **Social Characterization Assessment** (social, economic, historical, political context for affected area)

- **Stakeholders Analysis,** especially traditionally excluded groups

- Engagement methods and timelines

- Two-way engagement Statement

- Workforce and Community Agreements Statement

- Engagement Evaluation Strategy

- Resource Summary

Investing in the American Workforce

- Quality jobs
- Workforce development
- Worker rights
- Implementation Strategies
- Resource summary

Electric Power Generation Demographics by Sub-technology, 2019

	Solar Generation	Nuclear Generation	Natural Gas Generation	Wind Generation	National Workforce Demo-graphics[vii]	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)

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Diversity, equity, inclusion, accessibility

- **Assessment of** current state of DEIA in your project/company and prior and ongoing DEIA efforts

- **Implementation strategies**, milestones, and timelines based on goals and desired outcomes

- **Resource Summary**

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

Guidance documents (DE-FOA-0002779)

Financial Opportunities: Funding ✕ +

https://oced-exchange.energy.gov/Default.aspx#FoaId4d...

Applicants that experience issues with submissions PRIOR to the FOA Deadline. In the event that an Applicant experiences technical difficulties with a submission, the Applicant should contact the eXCHANGE helpdesk for assistance (OCED-ExchangeSupport@hq.doe.gov).

DOCUMENTS

- Full Funding Opportunity Announcement (Last Updated: 9/22/2022 03:01 PM ET)
- FOA Q&A Log - Updated 10/20/22 (Last Updated: 10/20/2022 02:46 PM ET)
- Full Funding Opportunity Announcement - MS Word version (Last Updated: 9/23/2022 11:46 AM ET)

APPLICATION FORMS AND TEMPLATES

The following forms and templates may be used as part of the application submission. Note that these forms and templates do not necessarily constitute all the documents required for a complete application. Please refer to the 'Application and Submission Information' of the published announcement to learn more about the required application content requirements.

(2) View Application Forms and Templates

CONTACT INFORMATION

- h2hubs@hq.doe.gov
  For all questions related to the conter
- OCED-ExchangeSupport@hq.doe.go
  For all technical questions regarding

APPLICATION FORMS AND TEMPLATES

The following forms and templates may be used as part of the application submission. Note that these forms and templates do not necessarily constitute all the documents required for a complete application. Please refer to the 'Application and Submission Information' of the published announcement to learn more about the required application content requirements.

Concept Paper

- Example_Cover_Page_for_H2Hub_Applications (Last Updated: 9/15/2022 01:00 PM ET)

Full Application

- Example_Cover_Page_for_H2Hub_Applications (Last Updated: 9/22/2022 08:27 AM ET)
- H2Hub_TEA_and_LCA_Projections (Last Updated: 9/22/2022 08:28 AM ET)
- **(3)** Community Benefits Plan Guidance (PDF version) (Last Updated: 10/17/2022 01:47 PM ET)
- Community Benefits Plan Guidance (Microsoft Word version) (Last Updated: 10/17/2022 01:46 PM ET)

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EJ Thriving Communities Technical Assistance Centers (EJ TCTACs)

- DOE is partnering with the Environmental Protection Agency (EPA) to create the new *Environmental Justice Thriving Communities Technical Assistance Centers* (EJ TCTAC):
  - up to $100M ($10M per award) to establish 5-10 TA centers across the U.S. to serve communities with EJ concerns and their partners

- TCTACs will provide:
  - training, assistance, and capacity building on writing grant proposals, navigating federal systems, and effectively managing grant funding;
  - guidance on community engagement, meeting facilitation, and translation and interpretation services for limited English-speaking participants.

- Eligible entities include:
  - Public and private universities and colleges
  - Public and private nonprofit institutions/organizations (includes institutions of higher education such as community colleges, and philanthropic organizations),
  - Intertribal Consortia

**Applications open!
due November 1, 2022**

For more information and to access the application:

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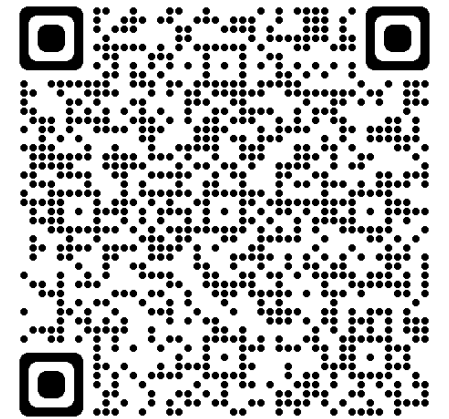
ERA Technical Assistance

Assess:
- Energy Potential
- Permitting and siting needs
- Needed interconnection, transmission, and other grid components
- System design and operational risk

Provide:
- Validation of system configuration and technology selection
- Measurement, reporting, and validation support to awardees

- *Other topics as identified through stakeholder engagement!*

Thank You! Stay in Touch!

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

Email: era@hq.doe.gov

RFI: energy.gov/OCED/energy-improvement-rural-or-remote-areas

Find us today and tomorrow!