Office of Clean Energy Demonstrations

THE OFFICE OF

CLEAN ENERGY DEMONSTRATIONS



U.S. DOE National EEJ Stakeholders Briefing: CDR

August 11, 2023

Briefing Agenda

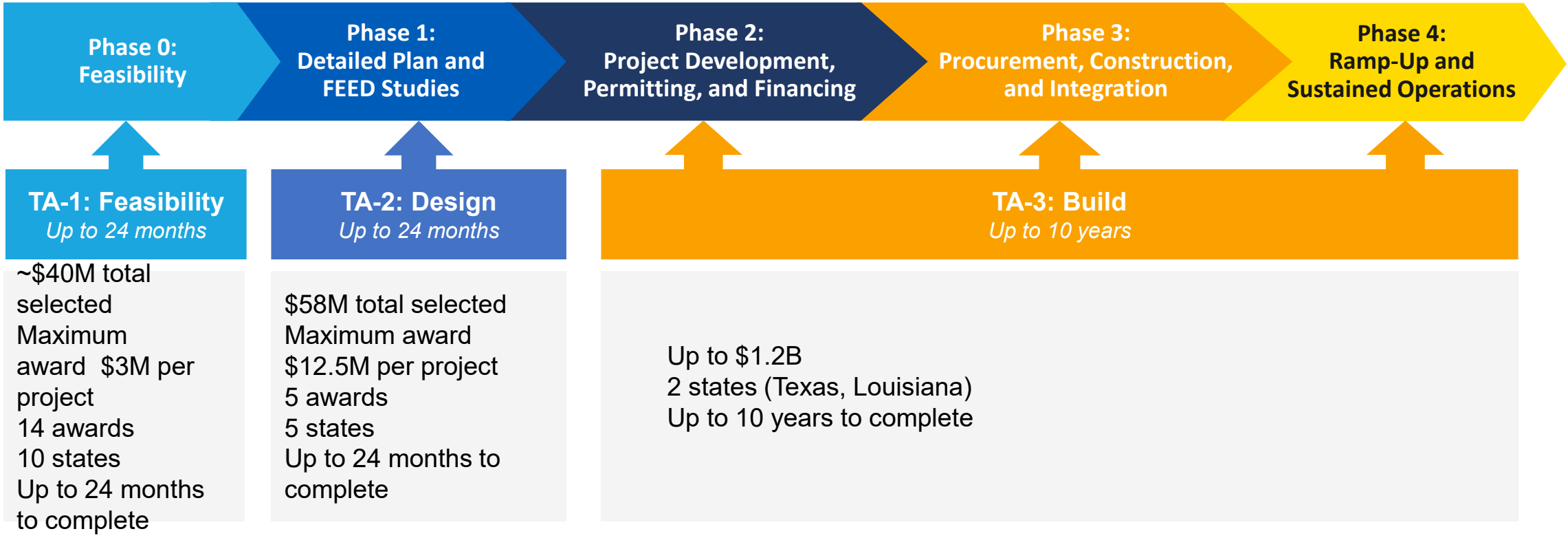
- Overview: Today's carbon dioxide removal (CDR) announcements
  - Regional Direct Air Capture Hubs
  - Carbon Negative Shot Notice of Intent
  - Responsible Carbon Management Pledge Request for Information / Notice of Intent
- DAC Hub Community Benefits Plan (CBP) requirements
- Next Steps & How to Engage
- Q&A

Overview: Today’s CDR Announcements

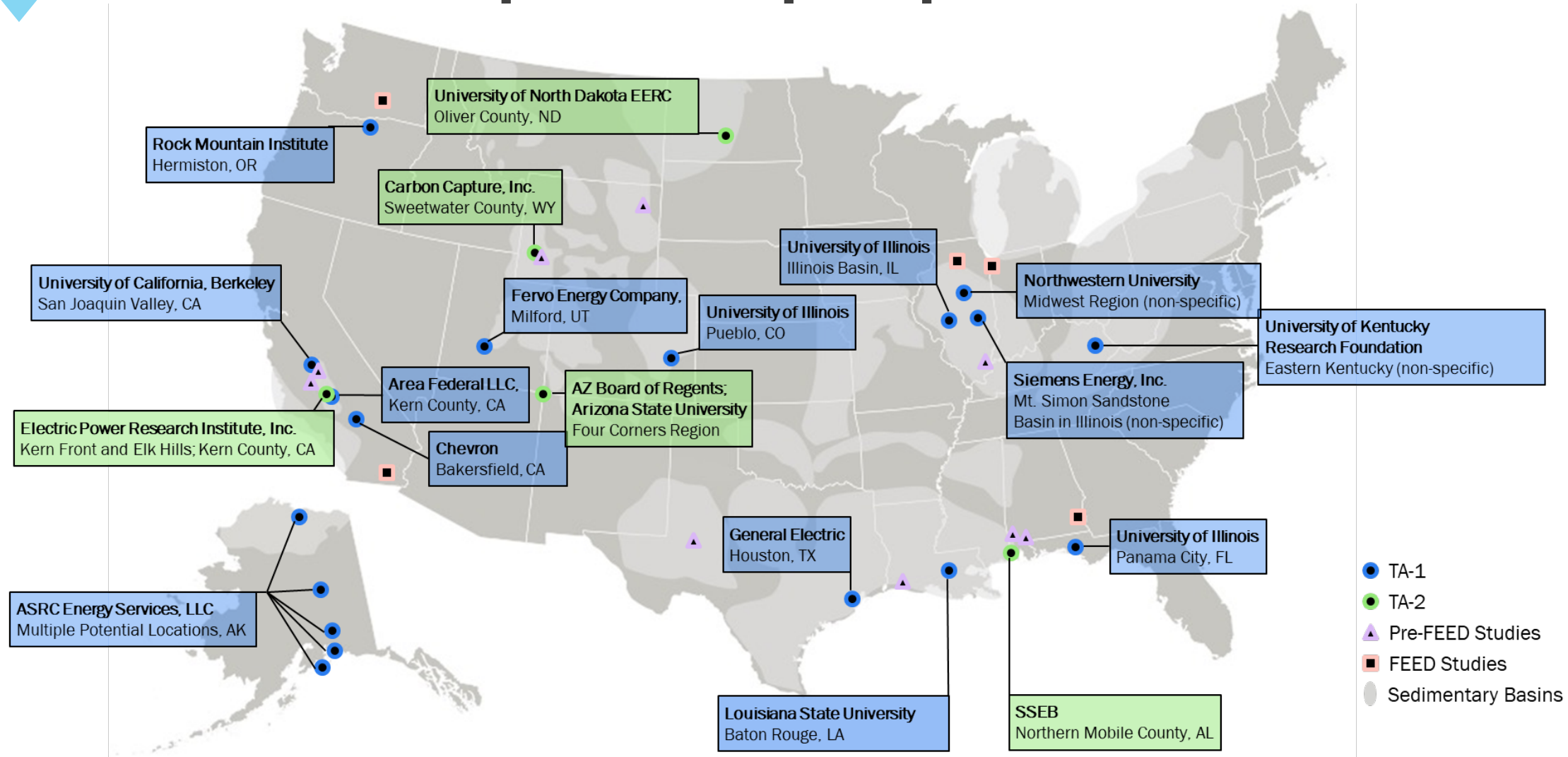
Today's Regional DAC Hubs FOA Announcements

Bipartisan Infrastructure Law Section 40308. Carbon Removal

DOE to invest $3.5 Billion for development of four Regional Direct Air Capture Hubs (the "DAC Hubs") to accelerate commercialization of, and demonstrate the removal, processing, transport, sequestration, and utilization of, carbon dioxide (CO_2) captured from the atmosphere.



Direct Air Capture Map Topic Area 1 + 2 Selections



Topic Area – 3, Regional DAC Hub Project Selections

Regional DAC Hub Projects are led by the Office of Clean Energy Demonstrations (OCED)
Two projects selected for negotiations

- **Project:** South Texas DAC Hub
- **Location:** Kleberg County, TX
- **DAC Hub Owner:** 1PointFive
- **Technology Provider:** Carbon Engineering Ltd.

- **CO_2 Removal:** Designed to capture up to 1 million metric tons of CO_2 annually
- **CO_2 Storage:** Saline geologic CO_2 storage site

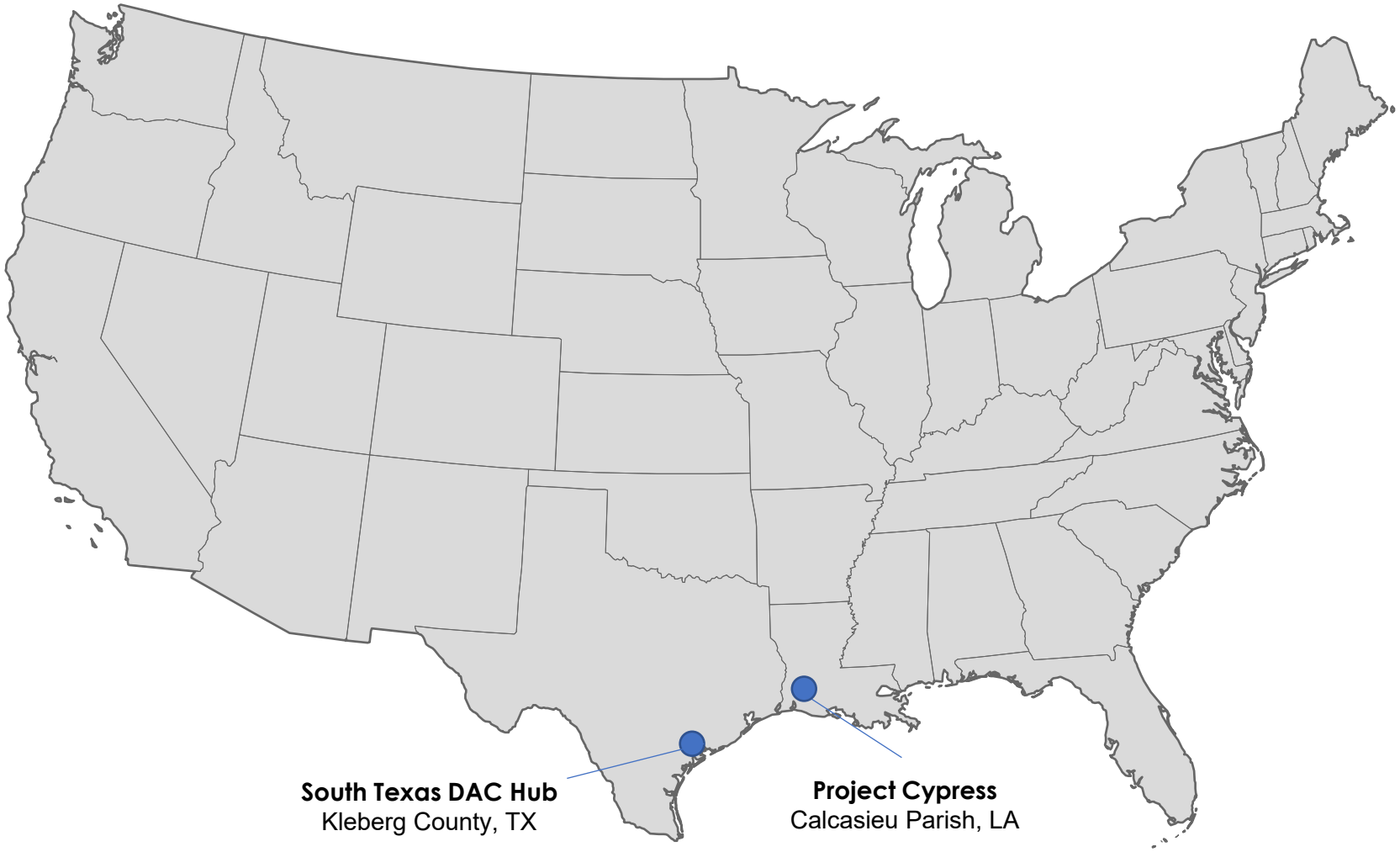
- **CBP Highlights:** Creation of ~2,500 jobs in construction, operations, and maintenance with existing agreements for local hiring—including a target quota for local construction and operations; creation of a Citizen Advisory Board to ensure meaningful community engagement

- **Project:** Project Cypress
- **Location:** Calcasieu Parish, LA
- **DAC Hub Owner:** Battelle
- **Technology Providers:** Climeworks, Heirloom Carbon Technologies

- **CO_2 Removal:** Aims to capture more than 1 million metric tons of CO_2 annually
- **CO_2 Storage:** Deep saline aquifer, through an offtake agreement with Gulf Coast Sequestration

- **CBP Highlights:** Creation of ~2300 jobs, with a goal to hire workers formerly employed by the fossil fuel industry for 10% of the overall workforce; robust two-way community engagement towards developing a Community Benefits Plan

Topic Area – 3, Proposed Project Locations



Carbon Negative Shot Notice of Intent (DE-FOA-0003081)

Commercial DAC Prize
(Bipartisan Infrastructure Law funded)

Track 1:
Direct Air Capture (DAC) Pilot Prize

Supports next generation of transformational DAC technology at approximately 1-5ktCO2/year scale
$60M

Provides proof point to scale into DAC Hubs in the future

Track 2:
CDR Purchase Pilot

World's first direct government CDR purchasing effort with $35M distributed over several prize phases.

CDR suppliers representing a suite of technologies consistent with the Carbon Negative Shot will compete for purchase agreements with DOE.

Small CDR Pilots and MRV funding
(Base appropriations funded)

CDR pilots – shows DOE's commitment to full suite of CDR approaches. Includes:

- Biomass carbon removal with storage
- Enhanced mineralization
- Multi-pathway CDR testbeds
- Marine CDR (both biotic and abiotic)

Additional MRV funding to support robust carbon crediting.

2023 CARBON MANAGEMENT RESEARCH PROJECT REVIEW MEETING | netl.doe.gov

Responsible Carbon Management Initiative

- Notice of Intent and Request for Information
  - Seeking input on draft Responsible Carbon Management principles and initiative structure
  - Opportunity for all projects, not just DOE funded projects, to demonstrate robust community benefits
  - DOE intends to finalize principles once feedback is received
- Phase 1:
  - Project developers pledge to abide by principles
  - Indicate intention and foster transparency
- Phase 2 (as funds available): Evaluate efforts and elevate leaders

[Planning for Societal Considerations & Impacts in FECM Projects | Department of Energy]

DAC Hub Community Benefits Plan Requirements

Community Benefits are a Key to Project Success

DAC Hubs are a covered program under the Justice40 Initiative. Justice 40 directs at least 40% of the overall benefits of certain Federal investments to flow to disadvantaged communities.

Four-part Community Benefit Plans:



DOE Justice 40 Priority Benefits for Disadvantaged Communities:

1. **Decrease** energy costs and burdens.
2. **Decrease** environmental exposure and burdens.
3. **Increase** parity in clean energy technology.
4. **Increase** access to low-cost capital in DACs.
5. **Increase** clean energy enterprise creation and contracting.
6. **Increase** clean energy jobs, job pipeline and job training.
7. **Increase** energy resiliency.
8. **Increase** energy democracy, including community ownership.

TA-1 Selections:

- Community Benefit Plans not required as just assessing project feasibility; provides basis for detailed community engagement in future.

TA-2 Selections:

- Community Benefits Plans indicates intent to engage with community and labor stakeholders. Plans will be updated post award

TA- 3 Selections:

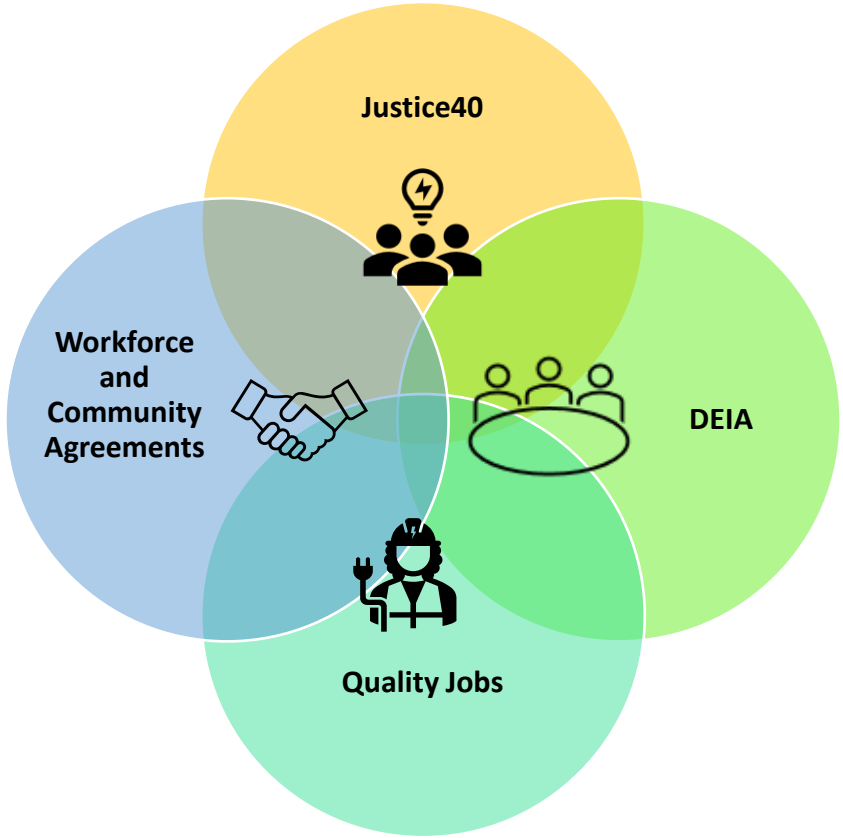
- Community engaged process beginning during negotiation and post award to refine and implement measurable Community Benefits.

CBP Requirements, Topic Area 2 – Design

Projects funded by DOE's Office of Fossil Energy and Carbon Management will develop plans to address societal considerations and impacts, ensuring projects center on engagement and are sustainable and equitable

Community Benefits Plans for Topic Area 2:

- Draft Community Benefits Plans indicate intent to engage with community and labor stakeholders
- Plans will be updated post award



Four-part Community Benefit Plans

CBP Requirements, Topic Area 3 – DAC Hub Build

Community & Labor Engagement

- Background
- Social Characterization (Community history & dynamics)
- Stakeholder Analysis
- Engagement Methods & Timeline
- Two-way engagement
- Project Agreements
- Evaluation Strategy
- Resources

Diversity, Equity, Inclusion, & Accessibility

- Background
- Strategies, Milestones, and Timelines
- Resources

Investing in the American Workforce

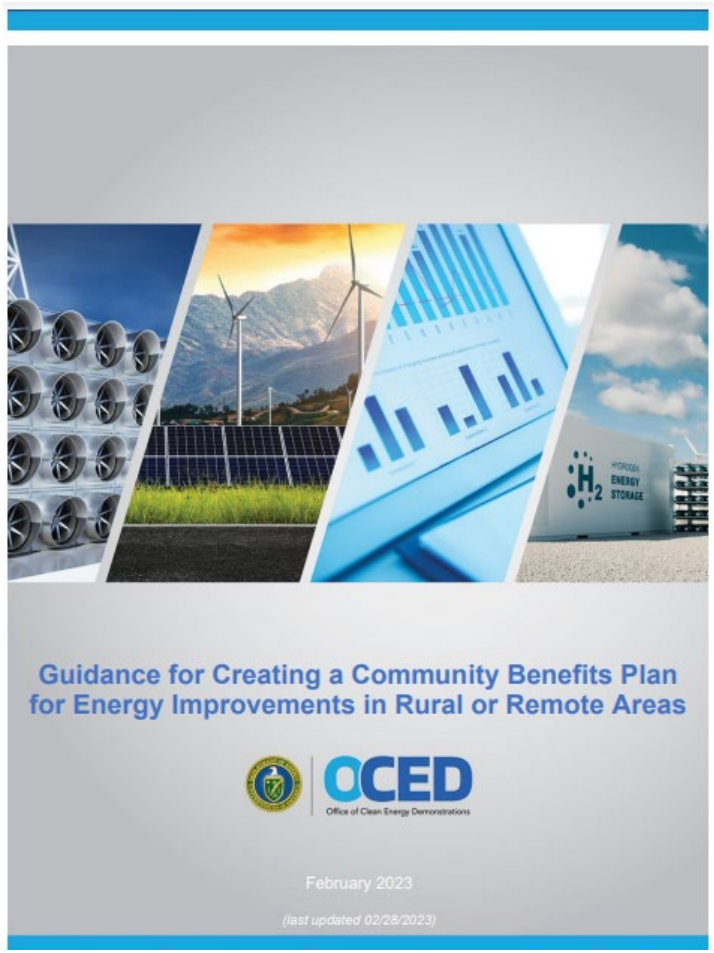
- Background
- Quality Jobs
- Workforce Development
- Worker Rights
- Strategies, Milestones, and Timelines
- Resources

Justice40 Initiative

- Background
- Impacted communities and groups
- Benefits & where they flow
- Negative impacts & where they flow
- Milestones & timelines to maximize benefits, minimize negative impacts, and track and report
- Barriers to benefits and impact mitigation
- Information Gaps
- Resources

Strong CBPs

- Demonstrate moving beyond a vision or assessment into **actionable goals, outcomes, and implementation steps** supported by adequate money, people, and time resources
- Include mechanisms for **accountability to and transparency with** impacted communities
- Propose clear **metrics** to measure success
- Match proposed actions to the **needs and priorities** of impacted communities
- Robustly address all four topic areas
- **Minimize and mitigate negative impacts** and harm, especially to already overburdened communities
- **Create quality jobs**, equitable access, and invest in workforce development

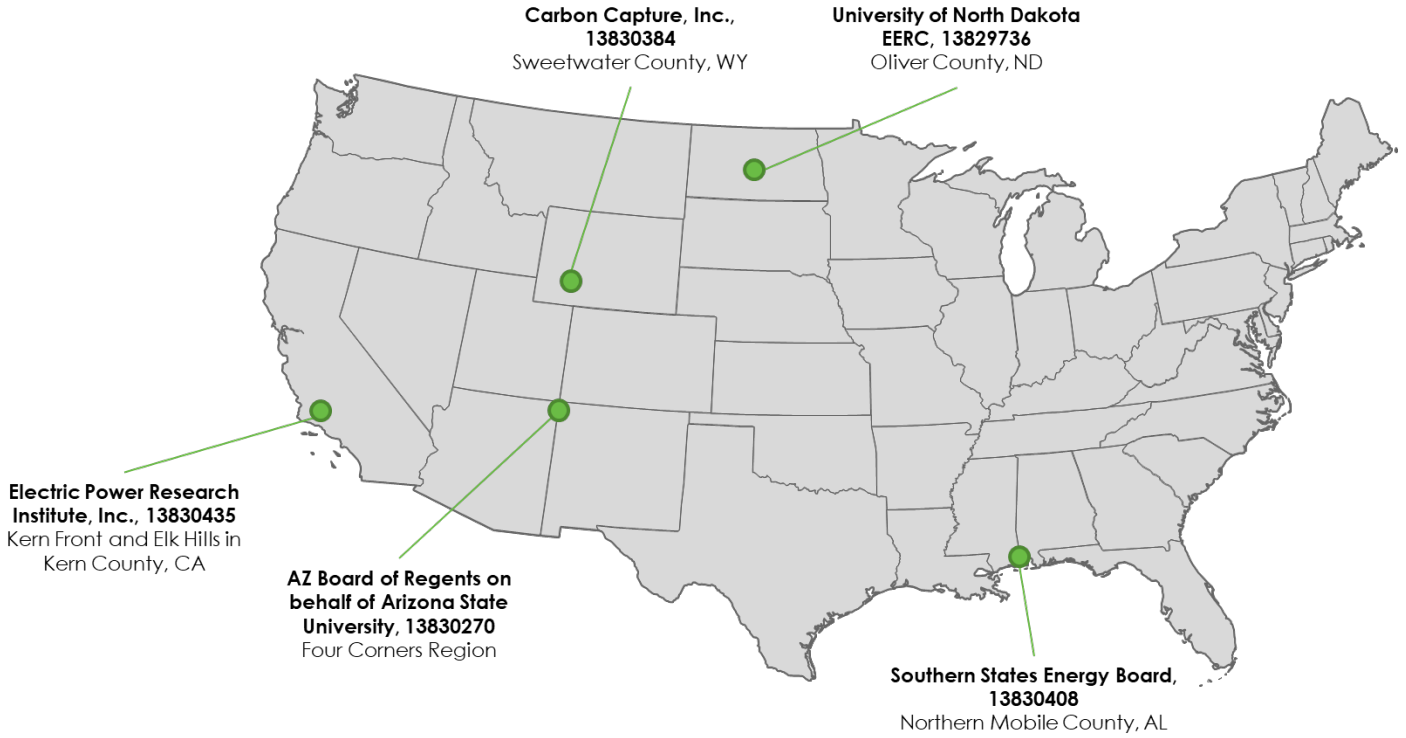


OCED FOA CBP Guidance docs available with each FOA at: https://oced-exchange.energy.gov/

Next Steps & How to Engage

DAC Hub Topic Area 2 – Design

- Projects will perform front-end engineering and design (FEED) studies to reduce risk during later project phases
- FEED studies will establish and define technical requirements focused on project scope, schedule, and costs
- Planned future engagement where carbon management deployment is either occurring now or expected to occur, considering both DOE-funded projects and private-sector activity.



DAC Hub Topic Area 3 - Build

- In-person community briefings for local stakeholders in September
- Once project negotiations completed, additional local engagement planned
- Reach out to OCED with any questions about these projects!
  - SouthTexas_DAC@hq.doe.gov
  - ProjectCypress_DAC@hq.doe.gov

Questions?

Thank you!
For More Information:

www.energy.gov/oced/regional-direct-air-capture-hubs

www.energy.gov/fecm/funding-notice-bipartisan-infrastructure-law-regional-direct-air-capture-hubs