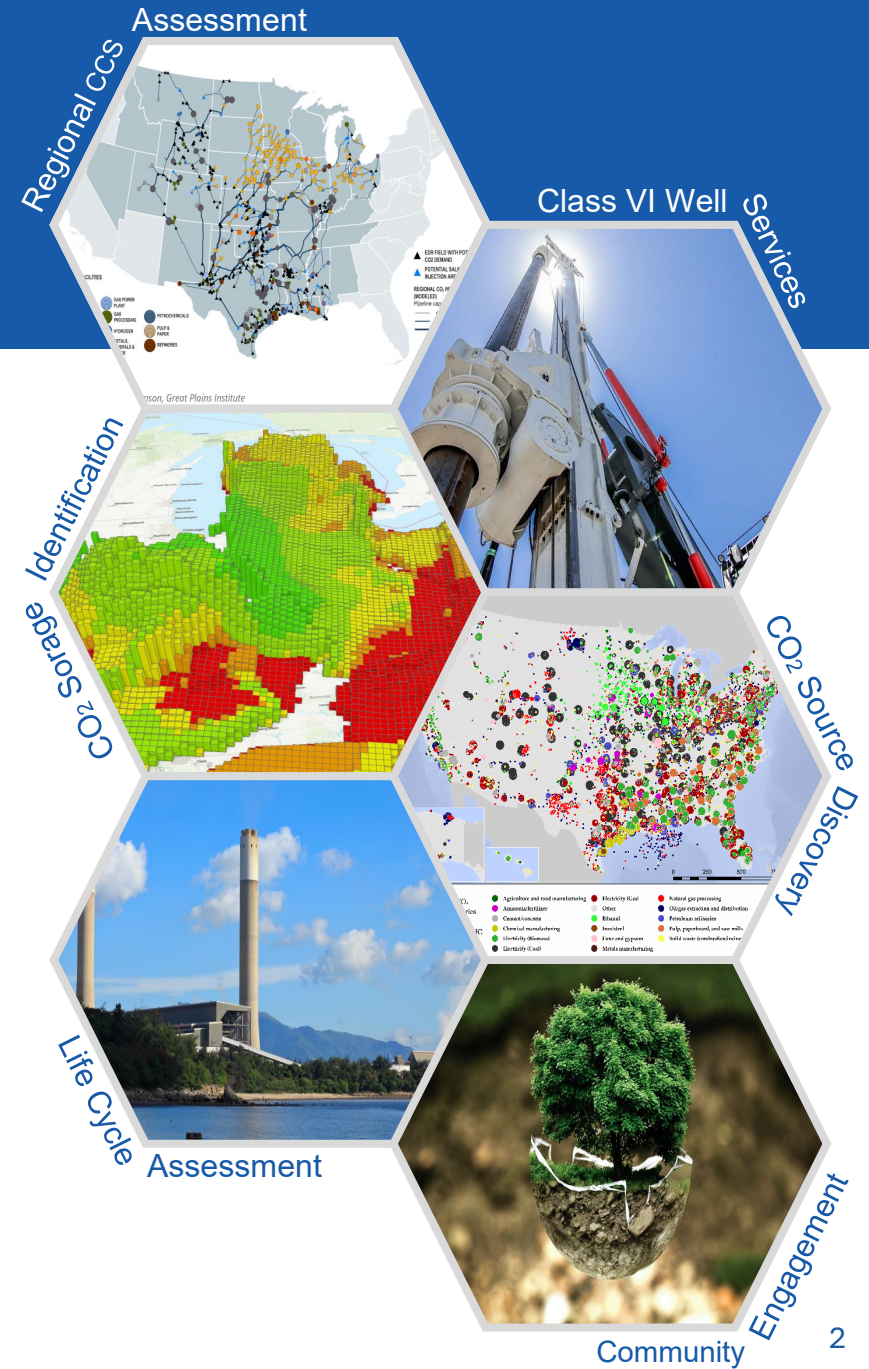# Carbon Solutions

Solutions for a net-zero carbon economy.

Carbon Solutions works with industry, government, non-profits, researchers, & other stakeholders to identify & implement real-world solutions for low-carbon energy challenges.

Applied experts in CO$_2$ capture-transport-utilization-storage, hydrogen, direct air capture, geothermal, wind, energy storage, grid modeling, next-generation and decarbonized transportation, environmental justice, energy equity, community engagement, science-technical communication, and more.

Regional CCS Assessment

Class VI Well Services

CO$_2$ Storage Identification

CO$_2$ Source Discovery

Life Cycle Assessment

Community Engagement

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Learn more at our website: *https://www.carbonsolutionsllc.com/*

Meet the Presenters

Erin Middleton, PhD
President

Jessi Eidbo, AICP
Director of Engagement

Agenda

1. What is **community engagement** and why are we talking about it?

2. Value of **custom engagement strategies** for DAC deployment

3. **Immediate relevance**: Federal funding requirements related to community engagement

4. Next Steps: **Real-world strategies** for CDR technology developers

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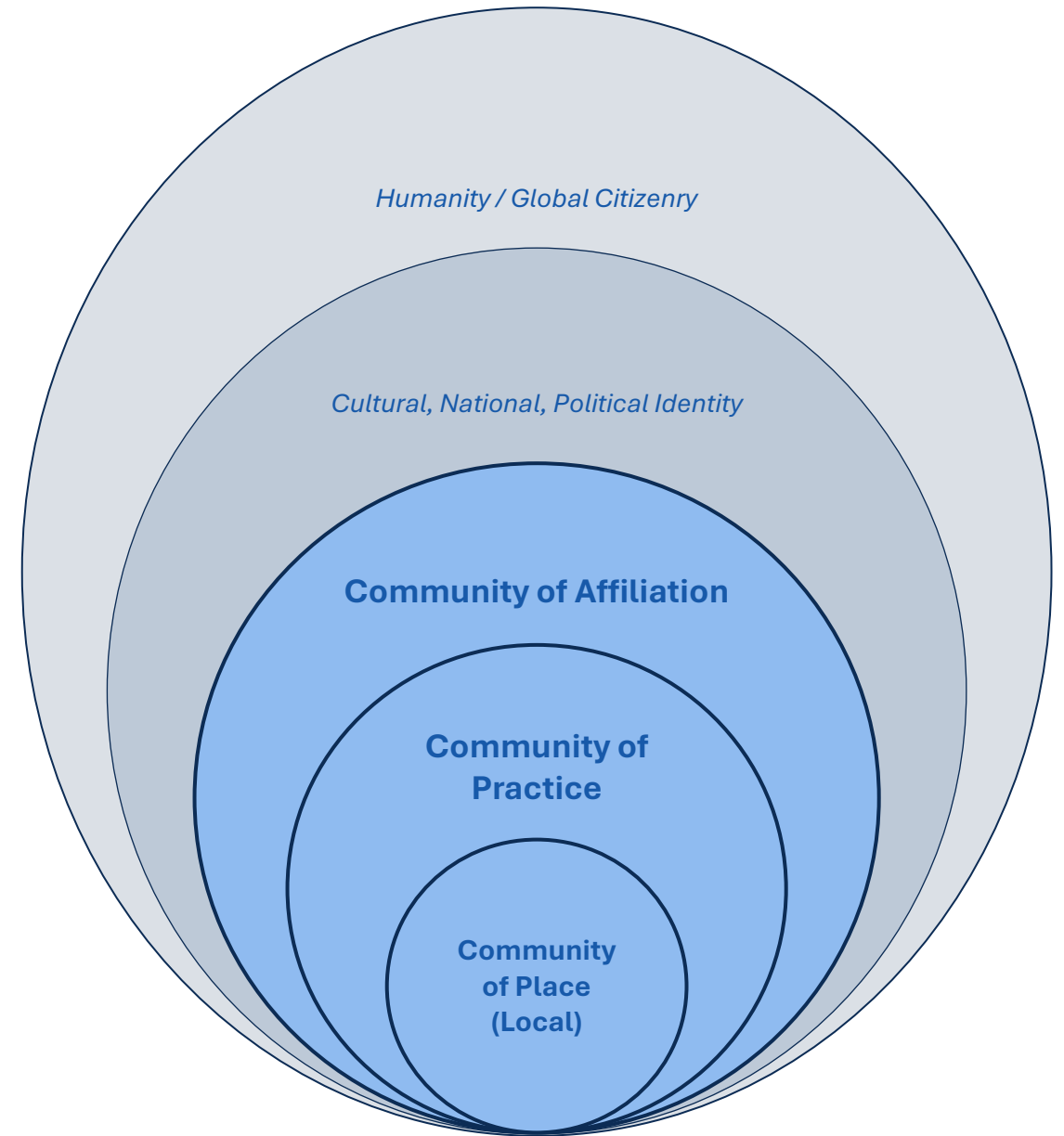
What is community engagement?

How do we think about community?

Scholarship, theory, and modern **guidance** on best practices for engagement **is expansive** – spanning academic disciplines and applied practice.

Community *is a term that can apply to* ***any set of stakeholders.***

Communities are often defined by a common geography or relationship to place ***but can also be defined by any set of organizing principles or shared commonalities.***

In practice, engagement with community will vary by type (of community or stakeholder).

Humanity / Global Citizenry

Cultural, National, Political Identity

Community of Affiliation

Community of Practice

Community of Place (Local)

Hierarchy of social identities

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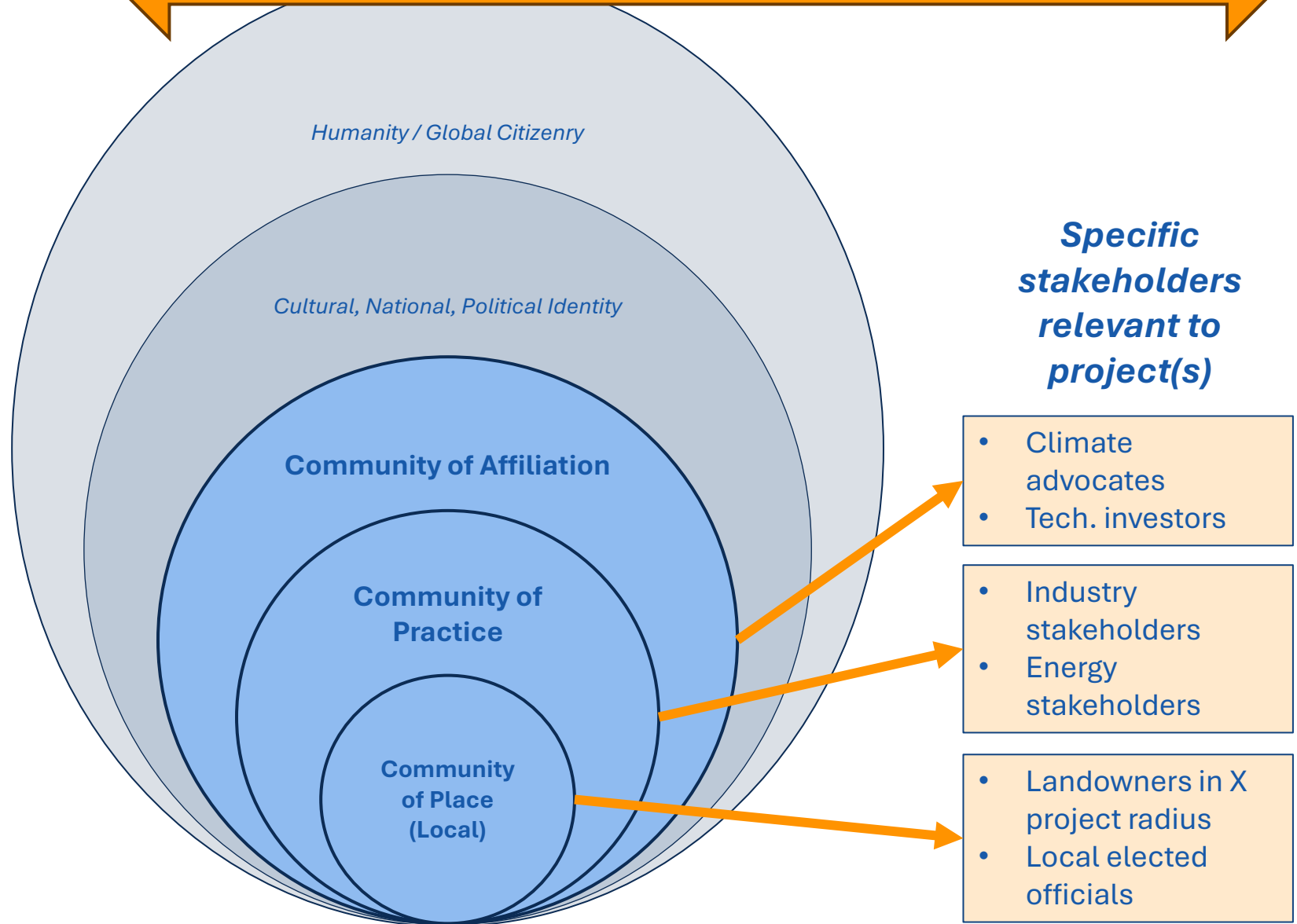
Moving from Theory to Applied Practice

Humanity / Global Citizenry

Cultural, National, Political Identity

Community of Affiliation

Community of Practice

Community of Place (Local)

Specific stakeholders relevant to project(s)

- Climate advocates
- Tech. investors

- Industry stakeholders
- Energy stakeholders

- Landowners in X project radius
- Local elected officials

Hierarchy of communities

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Moving from Theory to Applied Practice

The **relevance** of these "tiers" within hierarchy are **determined by many factors in your engagement strategy**, including:

- **TRL level** – how ready is your technology to go to market? Need to remember that the tier informs components of "readiness" to engage (i.e., grass tops care a lot more about

- **High/low company profile** – How public does your company want to be about development? Are you a champion or leader in your tech, or happy to be more behind the scenes?

- **Attachment to place** – how bound to a location is the project? Do you already have a development site or are you still scoping? It's easier to conduct or engage with local stakeholders when your technology (e.g., project) is in a specific geography.

Specific stakeholders relevant to project(s)
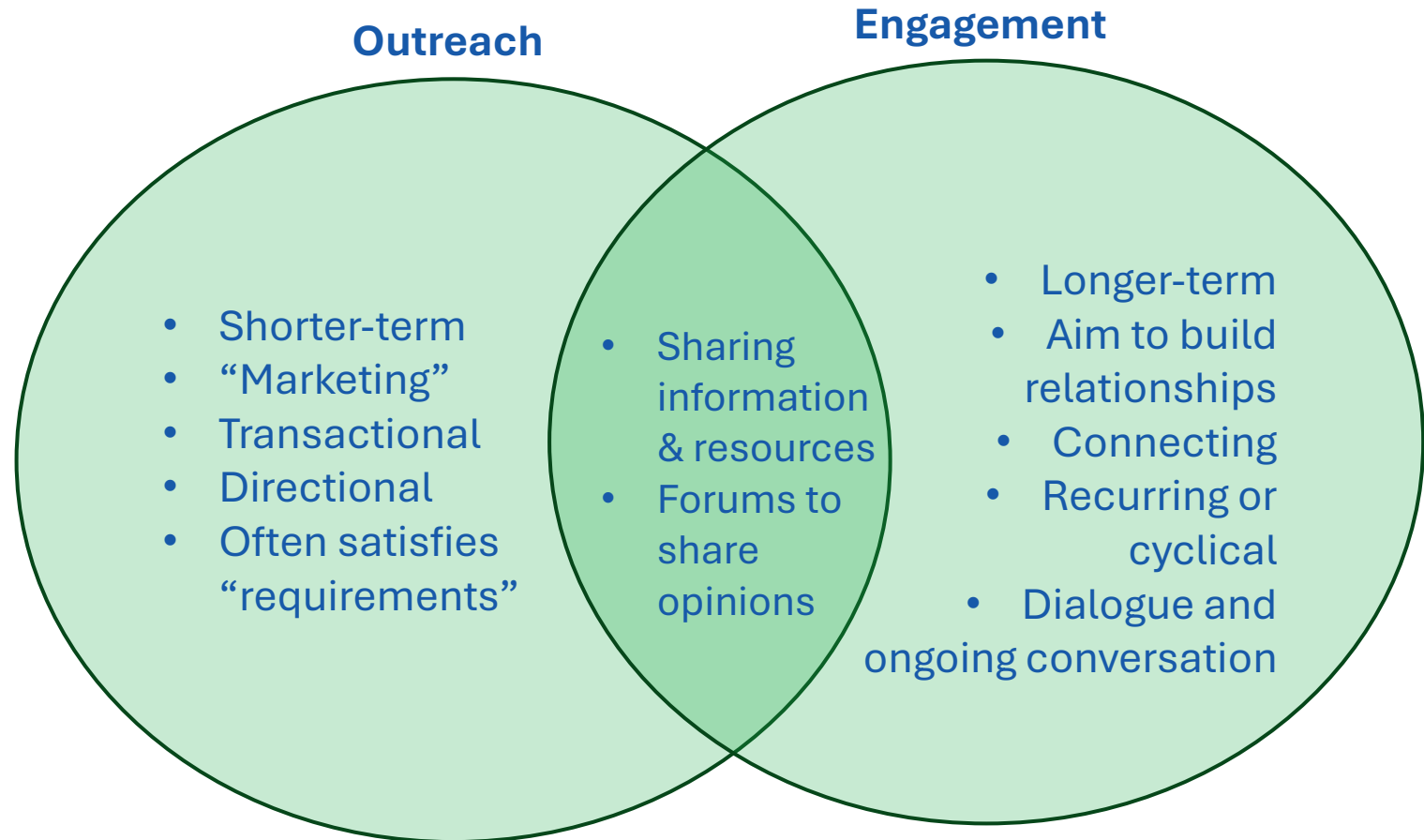
- Climate advocates
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- Industry stakeholders
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How do we think about engagement and outreach?

*While __engagement__ is a **two-way dialogue**, __outreach__ is **one-way**.*

- **Engagement** is more than just a public meeting, it's about **relationships, trust, and image.** It's helpful to think of engagement less as a "model" and more so as a "framework of guiding principles, strategies, and approaches."

- Both engagement and outreach have a role in project development

- Outreach is tailored to the community (audience) it intends to reach and can happen much earlier

- Outreach can be a component of engagement **and** engagement often needs an outreach and education component to level-set

Outreach

Engagement

- Shorter-term
- "Marketing"
- Transactional
- Directional
- Often satisfies "requirements"

- Sharing information & resources
- Forums to share opinions

- Longer-term
- Aim to build relationships
- Connecting
- Recurring or cyclical
- Dialogue and ongoing conversation

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Why are we talking about community engagement?

# Why are we talking about community engagement?

Tremendous **urgency for industry players** – both established and new – **to act in good faith** to both (a) continue to foster trust and (b) pave the way for future development projects in emergent and quickly evolving technology landscapes.
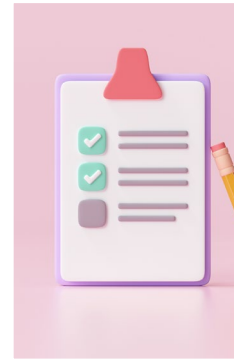
Requirements for community (labor and stakeholder) engagement **for federal funding** opportunities. Engagement underlies each plan component.
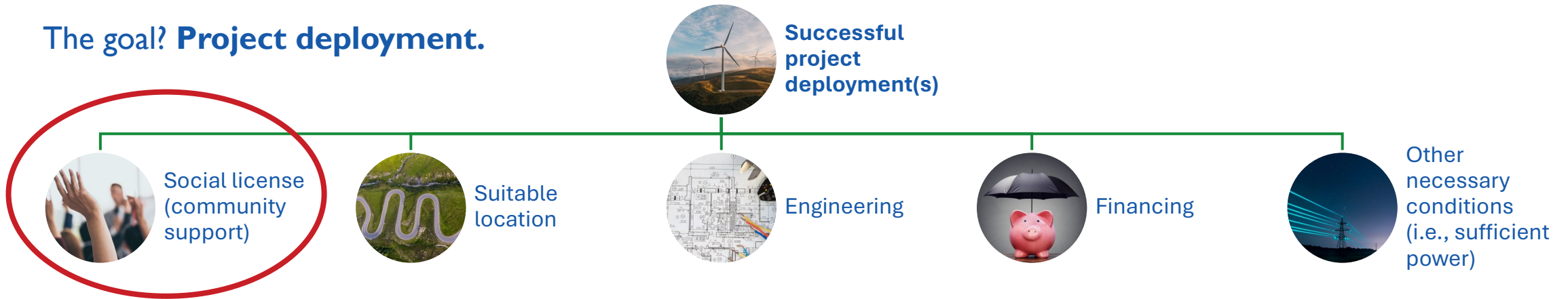
Ethical questions raised of stakeholder power, particularly relevant with expanded insight into **environmental justice** and the legacy of development's unequal, often negative, impact on community health and well-being.
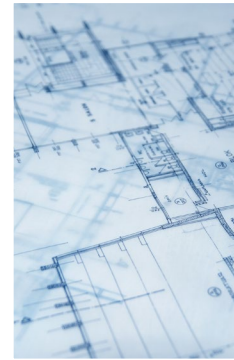
There' no "one size fits all" solution for "correct" engagement, and each technology, community, and project requires tailored engagement strategies & solutions. **Building expertise now ensures mutual success to project(s) and place.**

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Climate imperative also urging resolve to move projects forward successfully

The goal? **Project deployment.**

Successful project deployment(s)

Social license (community support)

Suitable location

Engineering

Financing

Other necessary conditions (i.e., sufficient power)

- The urgency required to address the increasing impacts of climate change require both adaptation and mitigation strategies.

- Emerging potential of carbon dioxide removal (CDR) including direct air capture (DAC) is no longer considered optional by global experts like the International Panel on Climate Change (IPCC)

- **Community support (often "social acceptance" or "social license") is a key piece of the overall puzzle of successful technology deployment**

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Tales of Caution: Wind and Solar

The wind and solar industries are **decades** ahead of emergent CDR technologies, including DAC, when it comes to siting and scaling.

Green or carbon neutral DAC (by most accounting) requires siting not only DAC infrastructure itself but renewable power generation to sustain capture processes.

Wind and solar became economically competitive with conventional energy resources in the late 2000s into the early 2010s

Economics lead development, and communities were variably consulted and/or informed; development occurred at "unprecedented scope and scale"

Growing antagonism (often organized) leveraged powerful local land use controls to stymie or completely prevent development in many parts of the U.S. (and E.U.)

Developers are having to backtrack to try to regain or establish trust, as well as overcome prohibitive local land use policies – increasing project cost and reducing likelihood of project success

Opportunity: What can the DAC industry simultaneously learn from and improve upon when it comes to siting and achieving social license to operate?

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So how do decarbonization technology developers achieve social license?

There are pre-conditions to "Social Acceptance"

*Key to remember that CDR and nascent climate technologies like DAC are **not starting with a blank social canvas***

- **Communities vary tremendously** – in understanding, information, willingness to learn, appetite to engage, ability to engage, perspectives on climate change in general – all which color the *method*, *strategy*, *tactics*, *timing*, and *medium* of a successful strategy for outreach and engagement.

- The **history of development** in every community **uniquely informs the pre-existing conditions** that a DAC project faces as well as the pre-conditions that developers must satisfy to (attempt to) successfully arrive at social acceptance, all while **"right of refusal" remains top of mind.**

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Why is this particularly relevant now?

Federal funding requirements for community engagement

- **Federal Requirements for Community Benefits Plans (CBPs)* introducing novel asks of development community, particularly novel with TRL < 5-7 technologies. Each component fundamentally relies on engagement.**
- Any federal awards allocated under the Bipartisan Infrastructure Law (BIL) or Inflation Reduction Act (IRA) require Community Benefits Plans, which consist of four components:
  - Diversity, Equity, Inclusion, and Accessibility
  - Justice40 (and Community Benefits)
  - Community Stakeholder and Labor Engagement
  - Quality Jobs and Workforce Development

Diversity, Equity, Inclusion, and Accessibility (DEIA)

Justice40 and Community Benefits

Quality Jobs and Workforce Development

Community Stakeholder and Labor Engagement

CBP requirements are also continuously evolving despite nascency

'21 — BIL / IIJA passed

'22 — IRA passed

'23 — Executive Order 14008
→ *J40 Initiative and DACs*
→ *White House EJ Advisory Council (WHEJAC)*

'23 — CBP Amendments and Expansion

'23 — Introduction of alternatives to CBPs: CBOOs, PIER, DEI Plans

'24 — Wholesale implementation of awarded CBPs begins

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Progress Update - Summer 2024
U.S. Department of Energy
Bipartisan Infrastructure Law and Inflation Reduction Act Funding

On Track to Supercharge the Clean Energy Economy

The U.S. Department of Energy's (DOE) Office of Infrastructure serves as the demonstration and deployment arm of the Department, tasked with stewarding billions in historic investments from the Bipartisan Infrastructure Law (BIL) and Inflation Reduction Act (IRA) to renew our nation's infrastructure, rebuild domestic manufacturing, create millions of good-paying jobs, address climate change, and increase American competitiveness.

100% programs launched

| $82.5B+ funding opportunities announced for clean energy | $48.7B+ for 1,000+ selected projects and 4,000+ formula funding awardees | $60B+ of private capital in matched federal dollars for selected projects | $24.3B+ in closed or conditionally committed loans |

Our Priorities

- Building Out a More Resilient Grid
- Reducing Energy Costs through Building and Home Upgrades
- Securing Key U.S. Clean Energy Supply Chains
- Supercharging Clean Industrial Innovation
- Creating High-quality, Accessible Careers
- Investing in Underserved Communities
- Bolstering Clean Energy Generation and Storage
- State, Local, and Tribal Clean Energy Partnerships

Summary excerpt from U.S. Dept. of Energy's Office of the Under Secretary for Infrastructure Summer 2024 Progress Update on BIL and IRA Funding
More information available at: https://www.energy.gov/infrastructure/articles/summer-2024-office-infrastructure-progress-update

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The industry value for preparing an engagement strategy is manifold.

- Despite importance, reality for community engagement is often limited by **project finances**

- Inclusion of **CBP* requirements** equates to dedicated project budget for engagement activities

- BIL, IRA, and other **federal dollars unlock tremendous potential** for R&D and commercialization

- Despite complexity and constant evolution, CBPs start to **create a standard for expectation of engagement as project component** (beyond permitting or regulatory requirements)

What does tailored community engagement look like (both within and without a CBP)?
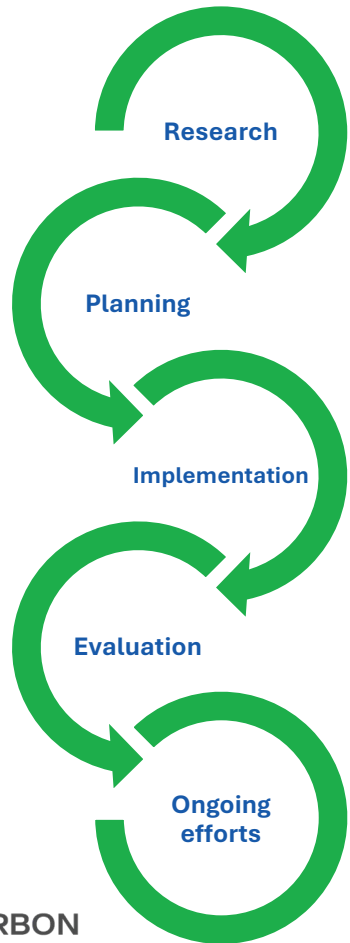
- **Research** grounded in current best practices with an aim to understand the history of development the community and social landscape going into a project
- **Planning** the engagement and communication strategy for the entire project duration, or for the company if aiming to develop in multiple locations. Planning also involves development of communications and engagement materials (i.e., hands-on activities, website or other information platforms, hand-outs, and project summaries)
- **Implementation** of the Engagement Plan, tailored to the community and stakeholders
- **Evaluation** of the engagement strategy, only one measure of which is successful project development
- **Ongoing efforts** to manage relationships and make good on the project benefits offered through the development

How does Carbon Solutions approach engagement?

0 Pre-Work
- Grant writing support for Community Benefits Plans, PIER plans & CBOOs
- Proposal development for other funding opportunities
- Leverage suite of Carbon Solutions software tools, including NECTAR, to ID project site
- Scoping conversations with local stakeholders as part of project location identification
- Research on funding opportunities

1 Research
- Grounded in modern engagement theory and best practices
- Reliant on emerging case studies from global CDR and CCS project development
- Establish **community stakeholder assessment** and **development landscape brief** to contextualize social context

2 Planning
- **Customized engagement plan** with engagement (and communication) strategy unique to each DAC development, including specific engagement events, timelines, support materials for outreach and communication, and more
- **Leveraging acquired insight into community socio-political landscape to ensure successful relationships** are developed and managed towards an aim for achieving social license

3 Implementation
- Execution of **engagement plan,** which may include **public engagement events** (tabling, youth activities, town halls or forums, focus groups, stakeholder presentations, and more) over the timeline of project execution
- **Communication tactics** may leverage social media, online web-based platforms, in-person relationships or event attendance, and more – wholly determined by the stakeholder assessment and insights generated in the research phase

4 Evaluation
- Rigorous **evaluation of the engagement plan and execution**, including engagement summaries and synthesis of findings
- Sometimes occurs in tandem to implementation
- Evaluation leverages data acquired during planning and implementation to **dynamically accommodate changes in the engagement landscape**
- Aims to leverage forecast(s) from planning for potential pitfalls and deploy strategy to mitigate social risk to development as necessary

5 Ongoing Efforts
- Methods aim to be both replicable (for similar projects) and scalable
- Strategies for **managing ongoing relationships** and **ensuring project benefits (and mitigation of risks) maintained** through operation and evaluation decommissioning (or "repowering")
- Includes evaluating or procuring models for sustainable project financing to protect project objectives

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Carbon Solution's Community Engagement Toolkit

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What could YOU be doing now?

Before the Proposal

- Determine your project goals
- Meet with state or regional officials and **document who you have met!**
- **Downselect site(s)**
- Articulate ideal project schedule
- Articulate other goals: K-12 outreach? Tribal Outreach? Do you need investors?
- What letters of support might you want/need?
- Understand what Justice40 communities are in your project area.

During the Proposal

- Determine partner strengths: Do you need labor involved? Social license research? Regulatory support?
- Who will be the face of your project - your company?
- Will you hire someone on the ground?
- Continue outreach to folks writing letters of support.
- Understand what non-technical challenges you need to address.

During the Project

- Monitor progress in solving non-technical challenges.
- What landholders, regulatory agencies, or other officials do you need to meet?
- Will you hire someone on the ground? What will be there tasks, and what about the project can they share?
- Consider updates to local orgs writing letters of support.

After the Project

- If the project isn't successful, what will you communicate to partners?
- If it is successful, what next steps should be taken, and how should your outreach/engagement strategy change (new TRL?)
- Consider what, if any, labor agreements, profit-sharing, direct support of schools or non-profits, etc., may be a fit for your organization.

As the Project scales

- Extend network of people engaged: local communities? General public? Join business organizations?
- Draft – even if only for internal use - Labor Agreements. Community Agreements, or other similar documents

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This was a long presentation! What should prioritize?

$ A pre-condition of any public or private funding opportunity often requires some degree of community engagement. This can happen early, but "community" needs some definition!

Community Benefit Plans and grants requiring Equitable project development requirements have rapidly evolved; many mix social science, public health, science communication, and marketing in complex ways.

Determining short- and long-term engagement priorities, tied to TRL, allows communities to have right-sized expectations of project benefits. **It's never too early to start your engagement strategy.**

CBPs – and their labor agreements, community agreements, and more – will continue to rapidly evolve!

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Thank you! Questions?

With questions and to connect, reach us at:

Erin Middleton, erin.middleton@carbonsolutionsllc.com

Jessi Eidbo, jessi.eidbo@carbonsolutionsllc.com

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Engagement Resource Appendix

1. **What is Community Engagement?** From PennState College of Agricultural Sciences available at https://aese.psu.edu/research/centers/cecd/engagement-toolbox/engagement/what-is-community-engagement
2. **Outreach versus Engagement** from Leading Differently (June 2019) available at https://leadingdifferently.com/2019/06/06/community-outreach-vs-community-engagement/
3. **CCS and Community Engagement: Guidelines for Community Engagement in Carbon Dioxide Capture, Transport, and Storage Projects** from the World Resources Institute (2011) available at https://www.wri.org/research/guidelines-community-engagement-carbon-dioxide-capture-transport-and-storage-projects#:~:text=This%20report%20was%20designed%20to%20provide%20guidance%20to%20Carbon
4. **Augmenting the communication and engagement toolkit for CO2 capture and storage projects** by E. Buah, L. Linnanen, and H. Wu (May 2021) available at https://www.sciencedirect.com/science/article/abs/pii/S1750583621000219
5. **Best Practices: Public Outreach and Education for Geologic Storage Projects** from the National Energy Technology Laboratory (revised 2017) available at https://www.netl.doe.gov/sites/default/files/2018-10/BPM_PublicOutreach.pdf
6. **Public perception of carbon capture and storage (CCS): A review** from S. L'Orange Seigo, S. Dohle, and M. Siegrist (October 2014) available at https://www.sciencedirect.com/science/article/abs/pii/S1364032114004699

Additional Resources
7. Furman, Carrie, Wendy-Lin Bartels, and Jessica Bolson. "**Participation, process and partnerships: Climate change and long-term stakeholder engagement.**" Anthropology in Action 25.3 (2018): 1-12.
8. MacQueen, Kathleen M., et al. **"What is community? An evidence-based definition for participatory public health."** American journal of public health 91.12 (2001): 1929-1938.
9. Solman, Helena, et al. "**Co-production in the wind energy sector: A systematic literature review of public engagement beyond invited stakeholder participation.**" Energy Research & Social Science 72 (2021): 101876.

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