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Connecting Community to Industry: A Field Trip to Explore the Future of Carbon Dioxide Removal Technologies



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Carbon dioxide removal (CDR) technologies offer a game-changing opportunity to eliminate meaningful carbon emissions from our atmosphere while creating hundreds of thousands of durable, well-paying jobs across the US. This is particularly true in communities with deep ties to the fossil fuel industry. But the United States cannot realize these benefits of CDR if these projects aren't accepted in host communities or are seen as harmful. Community engagement work, in which developers partner with host communities to ensure they too see the benefits of a new CDR project, is critical to ensuring successful project completion.

Research shows that meaningful community engagement can foster acceptance of new clean energy projects and, in so doing, speed up project timelines, increase project completion rates, and reduce project development costs in the long term. These efforts are integral to project completion but are often overlooked or undervalued by project developers.

To explore the role of community engagement in advancing CDR development, Third Way led an intergenerational group of fourteen Black American women from influential stakeholder organizations on a field trip to Canada in May 2024. The group included leaders from industry, environmental justice, labor, community organizing, and academia, many of them coming from communities that could potentially host CDR projects in the future. Together, they met with CDR technology developers to engage in an open dialogue on the pros and cons of CDR deployment and the impact of CDR on host communities. This memo summarizes our findings and insights collected from participants and suggests approaches for more productive community engagement.

The decision to focus on this specific group of women reflects the reality that carbon management projects—including CCUS, DAC, and CDR—are often sited in Black and Brown communities. Additionally, women are overrepresented within certain stakeholder groups that can influence community response to infrastructure projects. For example, women make up 90% of the membership of US environmental justice organizations. Women frequently lead and organize their communities, making their voices critical to the equitable and successful deployment of these technologies.

We chose Canada for its leadership in CDR technology, with several major CDR developers gearing up for large-scale US deployment in the coming years. Site visits included:

- Carbon Engineering's Innovation Centre, where the company is developing its direct air capture (DAC) technology for the South Texas DAC Hub.
- Svante's Centre of Excellence for Carbon Capture and Removal, where the firm is building a commercial facility to support projects across North America, including the Project Cypress DAC Hub.
- Arca Climate's headquarters, where Arca is working to accelerate carbon mineralization in mine tailings from operational mining quarries.

We also engaged with other groups impacted by the increasing deployment of CDR, including:

- Representatives of the **Squamish Nation**, a First Nation community that has first-hand experience with CDR project development.
- Representatives of **Carbon Removal Canada**, an independent policy advocacy group focused on equitably advancing carbon removal solutions in Canada.

Findings

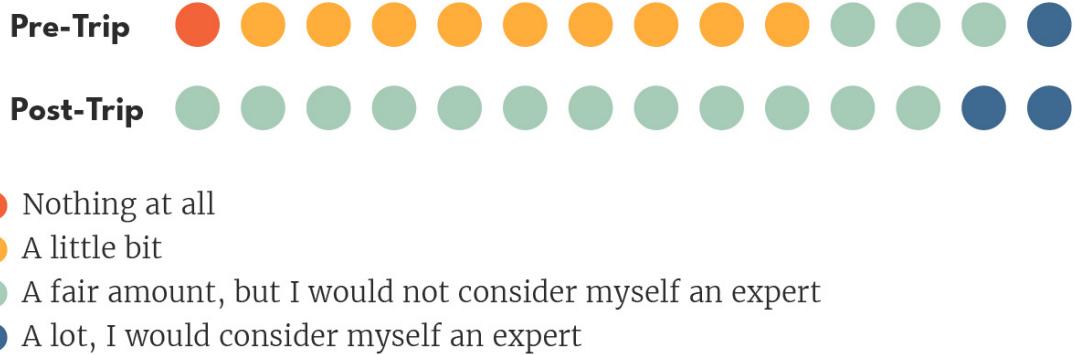
Below, we highlight trends and key takeaways derived from the pre- and post-trip survey and interview data. In the coming weeks, Third Way will release a separate paper including more granular data and analysis from participant surveys and interviews.

Survey Findings



Figure 1: All participants reported a significant increase in their knowledge of CDR after attending this field trip.

Q: How much do you know about carbon removal?



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Source: Connecting Community to Industry: A Field Trip to Explore the Future of Carbon Dioxide Removal.” Third Way, Jan. 2025. <https://www.thirdway.org/memo/connecting-community-to-industry-a-field-trip-to-explore-the-future-of-carbon-dioxide-removal-technologies>

Survey Finding 1: Trip Expanded Participant Understanding of CDR

Before the trip, most participants reported having limited knowledge of CDR technologies. This aligns with existing public opinion research indicating that most people outside the clean energy

space are unfamiliar with how these technologies work. By the end, many felt they had a solid understanding of the technology's basic mechanics (see Figure 1).



Figure 2: All participants gained enough knowledge of CDR to develop an informed stance, with a majority expressing support.

Q: How do you feel about carbon removal after attending this trip?

Pre-Trip



Post-Trip



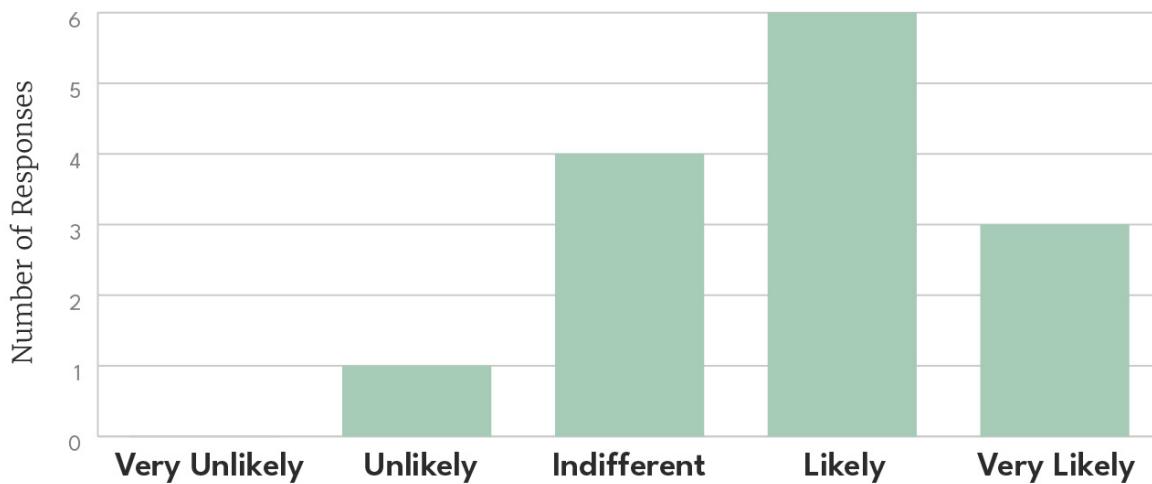
- I don't know enough to have a position
- I am not a fan of carbon removal
- I am indifferent about carbon removal
- I am a supporter of carbon removal

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Figure 3: The majority of participants indicated that they would be somewhat to very likely to support policies that promote advancing CDR technologies.

Q: How likely are you to support policies that promote carbon removal technologies?



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Survey Finding 2: Participant Support for CDR Increased Post-Trip

Encouragingly, support for CDR increased as participants learned more about it (see Figure 2). By the end of the trip, an overwhelming majority identified as supportive or neutral on the idea of hosting CDR technology in their community. Just one participant remained opposed to CDR in their community. Additionally, the majority of participants ranged from indifferent to very likely to support policies advancing CDR technologies (see Figure 3). It is important to note that not all community members have to be champions of projects, and that a mix of positive and neutral stances can contribute to public acceptance of a project.

Figure 4: The majority ranked pollution management as their top concern in community-level priorities, with job creation and labor training tied for second.

Q: Please rank what community-level aspects of carbon removal technologies interest you the most.



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Survey Finding 3: Participants Cited Pollution Management and Economic Opportunity as Primary Motivators for Supporting CDR Deployment

We asked participants to rank the community-level impacts of CDR deployment from most to least compelling. For most participants, using CDR to mitigate local pollution emerged as the most important impact surveyed, followed by job creation and labor training (see Figure 4). For our participants, the *local* environmental benefits—not just broader climate impacts—of CDR were exceptionally motivating. Participants wanted to know how CDR would reduce local pollution in

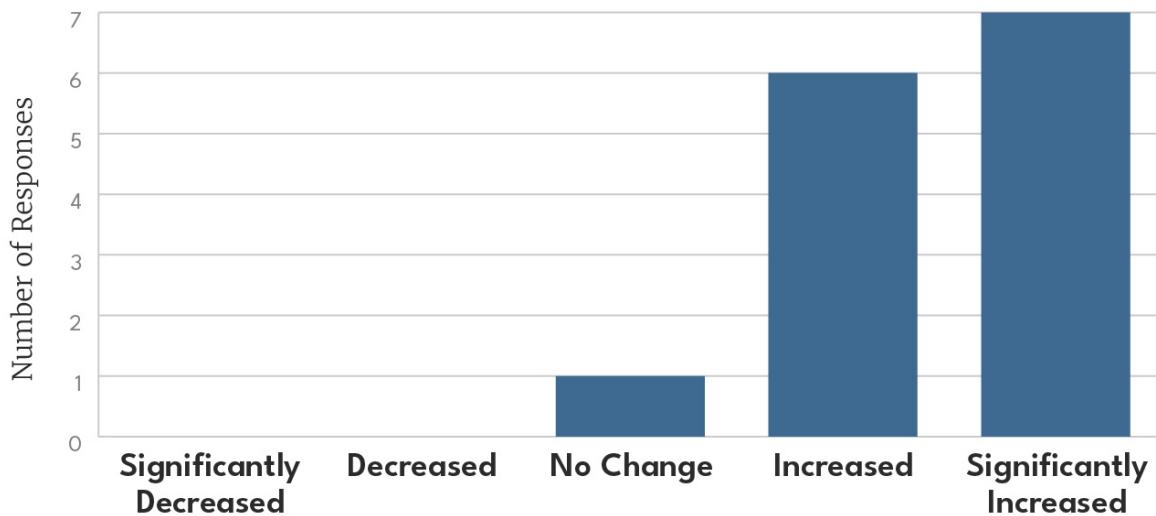
addition to carbon emissions. For example, some participants showed strong interest in CDR approaches that also reduced ocean acidification or improved soil health. This is perhaps unsurprising given that many in our group had an existing interest in environmental justice, but we feel it bears emphasizing: it's not enough to simply tout the community-level economic benefits or more macro climate benefits. Participants wanted to understand the positive impact of CDR on each facility's surrounding environment.



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Figure 5: Nearly all participants reported a deeper understanding of the global impact of CDR, highlighting the trip's holistic perspective.

Q: How has your understanding of the global impact of carbon removal changed after this trip?



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Survey Finding 4: Participants Better Understood the Global Relevance of CDR

Finally, an overwhelming majority expressed an understanding of the global value of CDR technologies (see Figure 5). We wanted to ensure that participants understood that mitigating the dangerous impacts of climate change benefits all, and that these technologies could advance that effort.

Interview Findings

During participant interviews, we asked five to six questions covering participant opinions about CDR technology and impressions of visits to CDR sites and the Squamish Nation. To summarize the data, we organized our interview responses into thematic categories, and then coded each response as positive or negative.

Figure 6: Participant Interview Themes, Negatives

Aspects of CDR that raised concern for participants, ranked from most to least frequently referenced in responses.

Ranking	Theme
1	Lack of Meaningful Community Engagement
2	Lack of Benefits Beyond Jobs
3	Lack of Legitimate Business Model
4	Lack of Accessible Local Job Creation
	Community Displacement
	Cost
5	Land-use Impact
	Safety
6	Lack of Focus on Local Pollutant Removal
7	Noise
	Aesthetic

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Interview Finding 1: Lack of Community Engagement Breeds Distrust Among Participants

While most attendees recognized the technological viability and utility of CDR, they expressed hesitation about how it would be integrated into their communities, citing concerns about the lack

of meaningful community engagement as a major hurdle to their support for CDR in their community.

This critique was heavily influenced by their firsthand experiences with CDR developers during our trip. Local developers had underscored their early outreach to the Indigenous Squamish Nation, and how their efforts led to Squamish Nation representatives attending and performing at the project's ribbon cutting ceremony. However, during our visit with the Indigenous leaders of the Squamish Nation, attendees heard how limited outreach had been from local CDR developers since the opening ceremony and expressed outrage that community engagement had not been more robust. Participants emphasize that the onus is on developers to not only maintain engagement with communities but to also ensure they are making themselves as accessible as possible to communities.

Many participants noted that, though they supported job creation from new CDR projects and viewed those jobs positively, jobs alone were not a sufficient reason for them to support CDR development. Many participants felt that CDR projects should be reinvesting profits into the host community or finding other ways to improve local quality of life, beyond just creating jobs. That effort goes hand-in-hand with the need for meaningful community engagement: firms cannot generate the kind of quality-of-life improvements that spur support for CDR without routine, honest engagement with host communities. In other words, to gain the trust of the community and learn what motivates and concerns them, they have to show up and keep showing up.

Interview Finding 2: Obscure Business Models Generate Anxiety Among Trip Participants

Many attendees expressed concern that the business model for CDR was overly dependent on the goodwill of the private sector. Without a private sector commitment to lowering emissions, participants noted no real incentive for CDR development to continue. Participants noted that this made CDR investments particularly vulnerable to shifting political dynamics: what incentive would the private sector have to abate emissions if the federal government chose to deprioritize such efforts? Participants more familiar with carbon business models voiced concerns that carbon removal credits would not result in actual emissions reductions, as has been the case for carbon offset markets.

Figure 7: Participant Interview Themes, Positives

Aspects of CDR that participants found encouraging, ranked from most to least frequently referenced in responses.

Ranking	Theme
1	CDR's Role in a Net-Zero Future
2	CDR's Technological Viability
	CDR's Technological Diversity
3	CDR's Diverse Job Creation Potential
4	CDR's Economic Potential
	CDR's Fit in an 'All-of-the-Above' Energy Strategy
5	Fossil Fuel's Role in CDR
	CDR's Nascent Allowance for Early Equitable Deployment
6	CDR's Ability to Repurpose/Replace Harmful Industrial Plants
	CDR's Potential Role in Environmental Justice

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Interview Finding 3: Better Understanding of How CDR Works—and its technological diversity—Boosts Support for CDR Deployment

Both qualitative interviews and survey responses revealed that most participants recognize CDR as essential to achieving a net-zero future. They were particularly encouraged by the variety of technologies under the CDR umbrella, which they see as providing greater opportunity to tailor CDR projects to the unique needs and strengths of a community. Participants also expressed optimism about CDR's potential to deliver real economic benefits to their communities, including career-advancing jobs that provide long-term opportunities.

Helpful Approaches for Community Engagement

By fostering a dialogue among influential women from potential host communities, Third Way was able to gather helpful perspectives and rich insights. This information will not only shape our policy work but also serve as a valuable resource for other stakeholders, including project developers, government officials, and community advocates. Below are helpful approaches for community engagement.

Helpful Approach #1: To build support, CDR technology developers must prioritize community education.

While this paper uses the term "education" broadly, it's crucial for industry developers to avoid a "one-size-fits-all" approach when engaging with communities. Instead, prioritizing direct communication and leveraging tools like surveys and workshops to understand what specific information communities want is a smart and effective first step. When planning engagements with communities, technology developers should also be prepared to provide resources to maximize accessibility to all community members, such as childcare, meals, compensation for participation, etc. For example, one participant also highlighted actions developers should take to make community engagement more accommodating by providing a mix of online and in-person engagement, as well as translation services when appropriate.

Helpful Approach #2: CDR technology developers should explain why their technology is a good fit for communities in comparison to other approaches.

Research shows that not every CDR approach makes sense for every community, both technologically and socioeconomically. For example, a CDR project that creates jobs in agriculture would not benefit a community in a city. CDR technology developers should be forthcoming about this fact and explain why their specific technology can fit well for a particular community. Using this strategy also addresses transparency concerns from communities and "why are you here?" —a common question brought up by participants.

Helpful Approach #3: CDR technology developers should be more collaborative and transparent

about their business models with communities.

Technology developers should seek opportunities to partner with communities in carrying out their carbon removal approaches. Doing so not only benefits communities but can also improve project operations for developers. For example, CDR approaches tied to the agricultural sector can partner with farmers to use their existing equipment to help with operations and reduce capital investment for developers. Going beyond operational partnerships, developers can also create financial ones with communities such as implementing profit-sharing mechanisms or project co-ownership models.

Helpful Approach #4: Industry must communicate additional local benefits, beyond jobs, to increase community acceptance.

Throughout the trip, participants acknowledged the significant job creation potential of CDR technologies but emphasized that communities need to see a broader range of advantages. These include addressing local concerns like pollution removal, fostering industry partnerships, and making direct investments in community priorities. Highlighting these benefits can make a meaningful difference in gaining community acceptance and support for hosting CDR projects.

Helpful Approach #5: CDR technology developers should pursue a continuous and bottom-up approach to community engagement.

The trip revealed a disconnect between developers and communities on meaningful engagement. Developers highlighted their efforts, but the Squamish First Nation viewed these as minimal and largely performative. Participants found it disheartening that much of the community engagement plans “exist only in the theoretical.” This highlights the critical need for authentic, community-centered collaboration. Third Way’s Pathways to Accelerating Clean Energy (PACE) findings underscore this point, noting that “community and stakeholder engagement and opposition emerged as perhaps the most crucial factor in determining the outcome of a project.” (More research on this is forthcoming.)

Community engagement isn’t just a “nice-to-have.” It’s a non-negotiable for ensuring the deployment and long-term success of carbon removal projects.

Methodology

To accurately capture the evolving perspectives of the participants, we gathered data using written surveys and interviews between Third Way staff and trip participants. We interviewed each participant twice: once in person during the trip and once online after the trip. Participants completed online surveys both before and after the trip.

Surveys and interviews focused on understanding participants' experiences interacting with technology developers and other stakeholders. We asked how participants felt about the technology itself and explored their perceptions of its benefits and drawbacks. By asking these same or similar questions at different points in time and in different formats, we sought to track participants' evolving sentiment towards CDR and the industry's community engagement efforts.

Though all 14 participants completed their written surveys, two participants chose not to complete their post-trip interviews.