(*) THIRD WAY

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On the Grid: SPECIAL EDITION: Carbon Management Across America 12/02/22





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If we want to achieve large-scale decarbonization of the US economy, then we *must* embrace every clean energy source available, including carbon management technologies.

Carbon removal solutions such as Direct Air Capture (DAC) are essential to eliminating the carbon pollution that has been circulating in the air for decades and preventing new emissions from entering the atmosphere. But with few DAC facilities currently operational, it can be difficult to imagine how these technologies will fit into our everyday lives.

As Dr. Rudra Kapila, Senior Policy Advisor for Carbon Management, explains, Third Way partnered with global design and architecture firm Gensler to create <u>five visual renderings</u> that illustrate what carbon management technologies such as DAC look like in practice when paired with other clean

energy options and demonstrate how different communities can safely live and work in a changing energy landscape and economy.



In this week's *On The Grid*, we'll offer insights on our new renderings and highlight milestones that make it clear that our net-zero future is on the path from imagination to reality.

Suburban Direct Air Capture



Created in partnership with Dr. Simone Stewart at National Wildlife Federation, this rendering highlights how small-scale DAC projects can be integrated within a suburban community. Captured carbon dioxide, which has diverse uses like manufacturing food, fertilizer, and low-carbon cement, is on full display in this scenario.

Projects We're Excited About:

 In collaboration with RTI International, global building materials company Cemex USA, received a <u>\$3.7 million grant</u> from the US Department of Energy to conduct an 18-month front-end engineering design (FEED) study that will evaluate how carbon capture technology can best be integrated into its New Braunfels, Texas cement manufacturing plant.

Rural Direct Air Capture



his scenario, also a collaboration with Dr. Stewart, shows how modular DAC units can fit well into the natural landscape of a rural community, and complement nearby clean energy sources like wind and geothermal power. Captured carbon dioxide also has a wide variety of localized uses within a rural community, like producing low-carbon cement at the plant in the distance or helping package the beer at the local brewery.

Projects We're Excited About:

Using Chart Industries' Earthly Labs' technology, <u>Maine Beer Company</u> will capture carbon
produced during the fermentation process, purify it, and then utilize it for beer carbonation and
packaging. Earthly Labs' carbon capture technology is not limited to breweries but can also be
applied to distilleries and wineries, helping to decarbonize various small-scale emissions
sources.

Large-Scale Direct Air Capture Hub



Set in an arid desert environment, this scenario illustrates a large, megaton-scale DAC hub at work, drawing down legacy carbon emissions at a significant scale for permanent geological storage, all powered by zero-carbon nuclear power. The transmission infrastructure that delivers clean nuclear energy to the DAC hub can doubly support local needs like electric vehicle charging stations.

Projects We're Excited About:

- CarbonCapture's newest Wyoming-based initiative, <u>Project Bison</u>, aims to capture 5 million metric tons of carbon dioxide annually by 2030. Expected to become operational by 2023, the modular unit design makes it easy to scale up the technology over time and increase the capture capacity of the facility.
- <u>1PointFive</u>, Occidental's carbon capture utilization and sequestration (CCUS) platform, is employing Carbon Engineering's carbon capture technology on its ambitious path to deploy 70 large-scale DAC hubs by 2035. The first of which, located in Ector County, Texas, is progressing through its front-end engineering and design (FEED) phase and will be up and running by 2024, making it the largest carbon management plant of its kind.

Carbon Capture Utilization and Sequestration Industrial Cluster



Integrated within a diverse industrial facility, this rendering highlights the decarbonization power of DAC when paired with point-source carbon capture utilization and sequestration (CCUS) technology. Together, these carbon management solutions can help cut emissions in hard-toabate sectors of the economy like steel-making.

Projects We're Excited About:

- US Steel, Equinor, and Shell have entered a <u>non-exclusive cooperation agreement</u> to collaborate on a carbon capture and hydrogen hub across the Pennsylvania, West Virginia, and Ohio regions that works to cut emissions while expanding economic opportunities in the area.
- HeidelbergCement, a German material company, was <u>awarded</u> \$3.7 million from the US Department of Energy for a front-end engineering design (FEED) study to evaluate the company's aim of capturing and storing 95% of the carbon emitted from their Mitchell, Indiana cement plant.

Hydrogen Hub & Direct Air Capture



Developed with Dr. Meron Tesfaye at Bipartisan Policy Center, this port-centered scenario showcases how DAC technology can be embedded within a clean hydrogen hub to draw down emissions while hydrogen is produced using nearby clean power sources.

Projects We're Excited About:

• <u>Plug Power</u> is working with New Fortress Energy, an LNG infrastructure company, to build a 120megawatt green hydrogen plant on the Beaumont, Texas coast. The facility is scalable, offering an opportunity to add new infrastructure and expand electrolytic hydrogen production capacity. Facilities such as Plug Power can be combined with nearby DAC technology to utilize the captured carbon to produce a synthetic fuel that can be transported domestically and exported internationally.



• <u>Emily Pontecorvo</u>, in *Grist*, details the motivation behind our <u>direct air capture (DAC) renderings</u> and the importance of widely deploying carbon capture technology. As Dr. Rudra Kapila states in the article, "Point source carbon capture, it's as glamorous as urban plumbing. But the thing is, we need these systems. To say that we can function without steel would be, you know, we can't."

- <u>Brian Eckhouse</u>, in *Bloomberg*, argues that new clean energy projects, many of which are in conservative-leaning states, and the jobs they bring to local areas, are shifting opinions in support of clean energy.
- James Lawler, host of the *Climate Now* podcast series, tours the Lawrence Livermore National Lab's Carbon Capture Lab and chats with the scientists working at the frontier of carbon capture research on the importance of removing historic carbon emissions.



The clean energy policy conversation is expanding...and so are we! The Climate and Energy Program is looking for people with talent and a passion for climate solutions to fill two new roles on our team. If you've got anyone in your mental Rolodex who you think might be a fit, please send them our way. And if you wanted to circulate these job postings more broadly with your networks, we wouldn't mind that either!

<u>Deputy Director</u>: This person will directly supervise 3-4 policy experts working in fields that could include clean energy innovation, industrial decarbonization, and carbon management. They'll guide these direct reports in developing policy and advocacy strategies that ensure US energy is clean, reliable, affordable, and secure. This person will contribute to program-wide strategy and represent Third Way in public events, coalitions, and high-level meetings. *Our ideal candidate will have 5+ years of energy policy experience and experience managing staff.*

<u>Policy Advisor for Innovation</u>: This team member will take the lead on our cross-cutting efforts in clean energy innovation. That includes working on implementation of demonstration, financing, and other DOE programs; developing recommendations to advance energy innovation across federal agencies; and building support for RD&D funding priorities. *Our ideal candidate will have 3+ years of experience in a relevant field. Job responsibilities can be scaled for candidates with exceptional qualifications.*

<u>Multimedia Designer</u>: As part of the communications team, the Multimedia Designer will manage the program's visual brand and amplify the program's initiatives by delivering compelling designs

and data visualizations for reports, events, social media, videos, and presentations. *The ideal candidate will have 3+ years of experience in graphic or multimedia design.*



<u>Third Way's Climate and Energy Program</u> celebrates the 2nd annual Carbon Management Day and spotlights the debut event at Gensler's Washington, DC office, where attendees could get an early look at our architecturally-accurate technology-inclusive DAC renderings.

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The best way to debut art? A gallery! Yesterday, TW hosted a limited exhibition at @gensler_design launching five renderings that demonstrate carbon management technologies in different community settings. Learn more about each rendering \uparrow 3/ thirdway.org/blog/picture-i...

