

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF SOUTH DAKOTA

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HP 22-002

IN THE MATTER OF THE APPLICATION :  
OF NAVIGATOR HEARTLAND :  
GREENWAY, LLC FOR A PERMIT UNDER :  
THE SOUTH DAKOTA ENERGY :  
CONVERSION AND TRANSMISSION :  
FACILITIES ACT TO CONSTRUCT THE :  
HEARTLAND GREENWAY PIPELINE IN :  
SOUTH DAKOTA, :  
:  
:

**REBUTTAL TESTIMONY OF  
LAURA McGLOTHLIN**

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**1. Please state your name, business address, and present position.**

Answer: My name is Laura McGlothlin. I am Executive Vice President and Chief Commercial Officer (“EVP & CCO”) of NES II LLC (“NES”) and Navigator CO2 Ventures LLC (“NCO2V”).

**2. What are your duties and responsibilities as EVP and CCO of NES and NCO2V?**

Answer: I am responsible for the commercial development and execution of contracts to add revenue to the company. Commercial development includes strategy creation, outreach to customers, deal structuring, and evaluation of commercial offerings and markets for future projects or expansion. I am also responsible for commercial development activities of the affiliated companies Navigator Heartland Greenway LLC (“Navigator”), Navigator Carbon Services, LLC, and HG Carbon Storage LLC.

**3. Please state your educational background and employment and business experience.**

Answer: I graduated with a Bachelor of Arts in Accounting and Mathematics from Southwestern University in 1996. After graduation, I began my career in public accounting

working for Arthur Andersen in the energy sector. After reaching the position of manager, I left in 2001 to join Enron Energy Services as Director of Operational Analytics. In 2002, I joined Duke Energy Corporation, progressing to jobs of increasing responsibility covering risk management, trading operations and budgeting/forecasting. In 2007, I joined Shell Trading US Company, where I moved from being a finance advisor to a manager of business development to a lease crude oil trading supervisor. At Shell, I negotiated and executed structured business deals worth over \$1.5 billion in value and managed a 150,000 barrel per day crude oil trading portfolio. In 2018, I started with Navigator Energy Services LLC as the EVP & CCO responsible for the commercial development for pipeline and storage assets, adding over \$750,000,000 in deal value to the portfolio. My role continues with NES and NCO2V in a similar capacity. A copy of my CV is marked as Exhibit A.

**4. Did you provide direct testimony in this case?**

Answer: No.

**5. To whose testimony are you responding in rebuttal?**

Answer: I am responding to the testimony of landowners, like Denis and Janet Anderson, who have challenged the commercial viability of the Navigator Heartland Greenway Pipeline (“the Project”) after the expiration of the 45Q and 45Z tax credits.

**6. Are the 45Q and 45Z tax credits important to the initial success of the Project?**

Answer: Yes. The customers who have signed agreements to ship carbon dioxide with Navigator derive significant economic value from the tax credits.

**7. Does that mean that the Project offers no value to current or future customers after the expiration of the tax credits?**

Answer: No. It is unknown today whether the tax credits will be extended in their current or some different form. The 45Q tax credit has been in existence since 2008 and has been significantly modified twice since. However, even if the credits expire, there are still several ways in which current and future customers of the Project can derive economic value from pipeline transportation of carbon dioxide.

**8. Please describe one way in which a customer derives economic value from the Project beyond the tax credits.**

Answer: The first way is through the qualification of a customer with the benefits outlined in Low Carbon Fuel Standard (LCFS) programs, which offer ethanol and other fuel producers marketable credits as incentives for meeting certain low carbon standards imposed by a state or another sovereign on fuel shipped to that state or country. For instance, California has a LCFS program that requires a reduction in the carbon intensity of transportation fuels that are sold, supplied, or offered for sale in the state by at least 20% through 2030 and beyond. The LCFS program allows producers and importers to generate, acquire, transfer, bank, borrow, and trade the credits offered for meeting the standard. The value of the credit is determined by the spot market. A fuel producer that captures and permanently sequesters carbon obtains a lower carbon intensity score, which allows the producer to qualify proportionately for more credits. Once applied, these marketable credits essentially allow the fuel producers with a lower carbon intensity score to benefit from a higher price per gallon of fuel sold in these markets. California has the most developed LCFS program for fuels with a lower-than-average carbon intensity score, but Oregon has a similar standard for low-carbon biofuel and other states are developing similar standards. Canada also has clean fuel regulations that provide market-based incentives

for liquid fuel producers who obtain a lower carbon intensity score. These LCFS and market-based incentives are different from the federal tax credits and do not expire with the tax credits.

**9. Please describe a second way that customers may derive economic value from the project beyond tax credits.**

Answer: There are developing voluntary carbon offset markets around the world where businesses buy and sell carbon offsets, or credits. Each carbon offset represents one metric ton of carbon dioxide removed, reduced or avoided in the atmosphere. By purchasing carbon offsets from companies that remove or reduce carbon, buyers in both the private and public sectors can mitigate the impact of their emissions as they work toward meeting or exceeding their sustainability goals. According to Morgan Stanley's research, a copy of which is attached as Exhibit B, the voluntary carbon offset market is expected to grow from \$2 billion in 2020 to around \$250 billion in 2050. This increase in demand for carbon offsets will provide additional value to sellers beyond the tax credits.

To further the pathway for customers to monetize the value of their carbon offsets, Navigator announced an agreement on May 23, 2023 with Puro.earth, a subsidiary of Nasdaq and the world's leading carbon crediting platform for engineered carbon removal, to validate and certify Navigator's carbon dioxide removal credits. As described in the press release attached as Exhibit C, Puro's Geologically Stored Carbon Methodology is endorsed by the International Carbon Reduction and Offset Alliance. Once validated, Puro issues digital tradable CO<sub>2</sub> removal certificates, which may be purchased directly from buyers to help neutralize the buyer's residual carbon emissions. This market is attractive for businesses that do not have other ways to capture carbon dioxide or reduce their production of carbon dioxide economically.

In this way, carbon dioxide has become a tradable commodity and Navigator expects that the volume of trading will increase significantly in the future. Additionally, a disproportionate amount of carbon offset trades today is developed from nature-based solutions. However, the practical limitations around nature-based solutions (lack of permanence, limited quantity) will drive an increase in reliance on technology-based, engineered, and verifiable removals derived from permanent carbon storage and removal. This shift in reliance on technology and permanent removal coupled with an increase in demand should improve the value for the carbon offsets created from projects like the Heartland Greenway. Of note, a company that removes or reduces their carbon dioxide emissions may not both sell carbon offsets and benefit from LCFS incentives. So for companies that cannot efficiently or economically transport their fuels to reach LCFS markets and monetize that value, tradable carbon offsets offer added economic benefit beyond the tax credits.

**10. Is there a commercial market for the use of carbon dioxide from which Navigator’s current and future customers may benefit?**

Answer: Yes. Carbon dioxide is currently used commercially in many ways, including, use in the food and beverage industry, dry ice, welding, fire extinguishers, cleaning, and in other products like cement. In addition to these uses, other companies are developing ways to use carbon dioxide in the production of electrofuels, also known as eFuels. On May 18, 2023, Navigator issued a press release, a copy of which is attached as Exhibit D, announcing that it had entered into a Memorandum of Understanding and long-term relationship with Infinium to deliver 600,000 tons per annum of biogenic carbon dioxide from the pipeline to a future facility for the production of eFuels. Project developers like Infinium need access to a diversified, consistent, and reliable supply of carbon dioxide that the Navigator Heartland Greenway pipeline

can deliver. Navigator is currently working on similar long-term agreements with other potential customers who will need a larger and more reliable supply of carbon dioxide for their commercial and industrial purposes that could not be efficiently or economically satisfied through the shipment of carbon dioxide by truck or rail. Navigator expects that there will be significant expansion and development of such commercial uses that will drive future demand for carbon dioxide shipped through the Navigator Heartland Greenway pipeline. The term of these long-term agreements and demand for use of carbon dioxide to make various products exceeds the term of the tax credits, adding alternative value streams to customers.

**11. Do current shipper agreements reflect demand for the Project after the expiration of tax credits?**

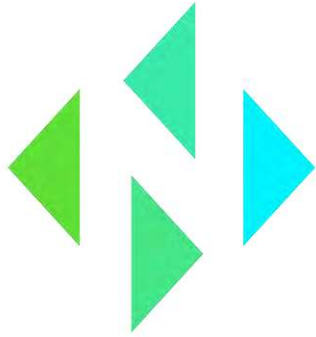
Answer: Yes. Navigator's current agreements with its shippers all include options that would extend the term of the agreements beyond the expiration of tax credits.

**12. Does this conclude your testimony?**

Answer: Yes.

Dated this 26th day of June, 2023.

/s/ Laura McGlothlin  
Laura McGlothlin



## Navigator CO<sub>2</sub>

### PROFILE

As EVP and CCO, Laura is responsible for managing all commercial business development and execution for Navigator, including strategy creation, customer outreach, deal structuring, and evaluation of commercial offerings and markets for future projects or expansion.

### CONTACT

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# LAURA MCGLOTHLIN

## EXECUTIVE VICE PRESIDENT AND CHIEF COMMERCIAL OFFICER

### WORK EXPERIENCE

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Navigator, **EVP and CCO**  
[2018-current]

Serves as CCO for two of the Navigator companies, Navigator Energy Services (Oklahoma and Texas crude oil pipelines) 2018-current, and Navigator CO<sub>2</sub> Ventures (carbon capture and sequestration system) 2020-current

Shell Trading US Company, **Lease Crude Trading Manager**  
[2014-2018]

Led regional crude oil trading office focused on crude acquisition, asset optimization, logistics and refinery supply. Set strategy, identified and developed business opportunities, managed P&L, built customer relationships and tracked market fundamentals. Managed 150,000 barrels per day book, \$7M in annual P&L and \$215M in annual asset commitments.

Shell Trading US Company, **Business Development Manager**  
[2010-2014]

Developed and executed long-term structured business opportunities for crude oil trading centered around midstream infrastructure. Managed projects end to end. Secured supply, pipeline and storage commitments valued at over \$1.5B to position the group with a first-mover advantage.

Shell Trading US Company, **Finance Advisor**  
[2007-2010]

Provided finance support to crude and products traders to implement new business strategies, driving incremental revenue to the organization. Modeled deal economics, tested assumptions, collaborated with business functions and resolved issues for quicker deal execution.

### EDUCATION

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**Southwestern University**

Bachelor of Arts, Accounting and Mathematics

### CAREER HIGHLIGHTS/CERTIFICATIONS/ASSOCIATIONS

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- Completed Commercial Academy and facilitated Women's Career Development Program at Shell



RESEARCH

# Where the Carbon Offset Market Is Poised to Surge

Apr 11, 2023

Decarbonization strategies are driving a rapidly evolving market for offsets. Where are the opportunities?



## Key Takeaways

- Although many companies are working to eliminate emissions entirely, carbon offsets will remain a critical tool in fighting climate change.
- The voluntary carbon-offset market is expected to grow from \$2 billion in 2020 to around \$250 billion by 2050.
- Three shifts now underway will bring new opportunities for investors as product mixes grow and evolve to help meet net-zero targets.

Voluntary carbon offsets are helping companies and countries meet ambitious climate targets. By purchasing “credits” from projects that remove or reduce carbon output, the private and public sectors hope to mitigate the impact of their emissions in the short term as they work toward



eliminating their carbon emissions.

To reach the sustainability goals in the 2015 Paris Climate Accords and various national and company-level targets, Morgan Stanley Research estimates that the world must remove at least 1 gigaton of carbon dioxide per year by 2030, based on analysis of data from Network for Greening the Financial System, though the opportunity for avoidance or reduction credits could be up to 10 gigatons per year. Each carbon offset represents one metric ton of carbon dioxide removed, reduced or avoided in the atmosphere.

"The carbon-offsets market has evolved rapidly, prompting increasing interest from investors and corporates," says head of ESG fixed income research Carolyn L Campbell. While offsets should be used only against unavoidable emissions for which there are no other viable alternatives, they represent an important runway while other methods to decarbonize develop, she says. Campbell and her team estimate that about 4,000 carbon-offsets projects have issued credits for roughly 1.7 billion offsets (or 1.7 gigatons of carbon). With 3,800 more projects listed, pre-registered or registered and awaiting credit issuance, the voluntary carbon-offsets market is expected to grow from around \$2 billion in 2022 to about \$100 billion in 2030 and around \$250 billion by 2050.

Just where that growth occurs, however, is largely dependent on three key shifts in the carbon offset market, centered around which credits to buy and whether to buy any at all. Here Morgan Stanley Research outlines the risks, opportunities and emerging trends.

## 1. From Reduction and Avoidance to Removal

Currently, projects that focus on avoiding or reducing atmospheric emissions of carbon dioxide account for 82% of the offsets market. Buyers of this type of offset get credit for preventing future emissions by, for example, protecting forests or opting for renewable energy over fossil fuels.

By contrast, removal credits ameliorate the impacts of past emissions. Accounting for 5% of the market, removal credits are based on projects that directly remove carbon dioxide from the atmosphere—such as tree planting to sequester carbon or technology-based techniques for capturing carbon directly from industrial processes and fossil-fuel run power stations, for instance. (The remaining 13% of offsets represents a mix of avoidance/reduction and removal projects.)

Removal projects are likely to gain importance in the long term, but scaling and cost hurdles are currently constraining the supply. Avoidance and reduction credits will continue bridging the gap until the transition is complete.

"Avoidance credits are still needed now, and can finance important transitions ahead of regulations, legislations or economic feasibility," says Campbell.

Once buyers shift toward removal projects over the course of the decade that demonstrably and permanently take out carbon dioxide out of the atmosphere, they should generate enough carbon-offset credits to reach companies' net-zero targets.

## 2. From Nature to Technology

Nature-based carbon-offsets projects are largely designed to reduce emissions from deforestation and forest degradation. Their impact is difficult to measure, but they represent an important interim solution until there is no more land left to reforest, or until countries pass more aggressive laws to conserve existing forests and natural systems.

After 2030, however, technology-based carbon removal will likely outpace nature-based measures. "Indeed, most well-established net-zero models rely on tech-based removal after 2030, seeing upward of 5 gigatons of carbon dioxide removed per year by 2050," says Campbell.

Tech-based offset projects include such measures as deploying new renewable technology; preventing or capturing methane leakage from fossil fuel production, mining, landfill or livestock; replacing wood-burning stoves with clean cookstoves; capturing carbon dioxide directly from the air; and storing captured carbon from emission sources and permanently storing underground.

## 3. From Offsets to Investments

In an ideal world, a company or a country should invest in technologies, improvements and efficiencies to set itself on a path toward absolute zero—that is, no emissions whatsoever—while offsetting current emissions in the interim. Indeed, some companies, most notably certain airlines, are increasingly shifting more of their sustainability budgets to research and development and stepping back from offset purchases. For air carriers, which face sector-specific decarbonization

rules and have a high degree of control over the majority of their emissions, the ability to invest in available—albeit expensive and still maturing—tech solutions to help meet decarbonization goals represents a unique case, says Campbell. While the high-emitting steel and cement industries share a similar profile, they aren't subject to global emissions regulations as airlines are and don't share the same proximity to consumers either.

*For more Morgan Stanley Research insights and analysis on the future of carbon offsets, ask your representative or Financial Advisor for “Carbon Offsets: Rapid Growth and Product Evolution (Feb. 21, 2023).*

FOR IMMEDIATE RELEASE

**NAVIGATOR CO<sub>2</sub> PARTNERS WITH PURO.EARTH TO GENERATE CDR CREDITS FROM HEARTLAND GREENWAY CCUS PROJECT**

OMAHA, Neb. MAY 23, 2023 - Navigator CO<sub>2</sub> (“Navigator”), a leading carbon capture, utilization, and storage (CCUS) company, today announced the signing of an agreement with Puro.earth, the world’s leading carbon crediting platform for engineered carbon removal, to validate and certify Navigator’s carbon dioxide removal (CDR) credits. For Navigator, this strategic partnership builds upon the momentum created by their recent groundbreaking [announcement](#) and serves as a testament to Navigator's comprehensive growth strategy within the industry.

The framework pairs Puro’s Geologically Stored Carbon Methodology endorsed by the International Carbon Reduction and Offset Alliance (ICROA), with Navigator’s Heartland Greenway CCUS system, providing the first megaton scale access to stakeholders across the CDR spectrum. This collaboration marks a foundational launch for the Voluntary Carbon Market (VCM), enabling unprecedented scalability and impact.

Heartland Greenway, one of the largest in-development CCUS projects in North America, will have the capacity to permanently sequester up to 15 million metric tons of biogenic carbon dioxide (CO<sub>2</sub>) per year once fully operational, a volume equivalent to the annual emissions of over 3 million cars.

“We are thrilled to announce this key partnership with Puro.earth, shortly following last week’s landmark [announcement](#), as it demonstrates the diversity and steady progress of the Heartland Greenway platform,” stated Matt Vining, CEO of Navigator. “This will help Navigator and its customers bring high-quality CDR credits to the global VCM at an unprecedented scale. The Puro Standard, based on superior methodologies, third-party verification, and transparency, ensures that carbon credits issued through the platform meet the highest standards, empowering our customers to achieve their sustainability goals successfully.”

Through Puro.earth's Standard, Navigator's activities will be certified as carbon net-negative, and the capacity of the Heartland Greenway project to remove CO<sub>2</sub> from the atmosphere will be independently verified through a comprehensive lifecycle assessment. The Puro Standard is the first crediting program focused on durable carbon removal with a storage time of 100+ years to obtain endorsement by the ICROA. In addition, Puro's issued CO<sub>2</sub> Removal Certificates (CORCs) are recorded in the Puro Registry, ensuring traceability, transparency, and the avoidance of double counting, thereby enabling corporate buyers to confidently address their sustainability goals.

Antti Vihavainen, CEO of Puro.earth, expressed excitement about the partnership, stating, "The scale of the Heartland Greenway project is very significant to the whole carbon removal market as it raises the supply by an order of magnitude. These large-scale projects deliver efficiency gains across the value chain that will enable more companies to use carbon removal credits as part of their net zero goals. By applying scientific rigor to measuring, reporting and verification of the CDR credits, we can unlock the full potential of carbon capture and removal technologies and help create a more sustainable future.”

The Heartland Greenway project represents a significant advancement in scaling CDR and positions Navigator and its partners as key suppliers of net-negative emissions to the VCM by 2025. The partnership between Puro.earth and Navigator ensures access to the highest quality engineered removals, with rigorous verification, permanence, and associated co-benefits. In addition, this collaboration addresses the fundamental undersupply in the marketplace for high-quality CDR products. Navigator is actively negotiating offtake frameworks for its initial credit vintage with interested counterparties ahead of the project's construction, with plans to deliver CDR at a multi-megaton scale on an ongoing basis as early as 2026.

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### **About Navigator CO2**

Navigator CO2 is a company developed and managed by the Navigator Energy Services management team with over 200 years of collective industry experience. The company specializes in CCUS, and the management team has safely constructed and operated over 1,300 miles of new infrastructure since 2012. The company is committed to building and operating its projects to meet and exceed safety requirements while minimizing the collective impact on the environment, landowners, and the public during construction and ongoing operations. Navigator CO2 is headquartered in Omaha, NE at 13333 California St., Suite 202. For more information, visit: [navigatorco2.com](https://navigatorco2.com) or [heartlandgreenway.com](https://heartlandgreenway.com) and visit us on [Facebook](https://www.facebook.com/navigatorco2) and [Twitter](https://twitter.com/navigatorco2).

### **About Puro.earth**

Puro.earth is the world's leading carbon crediting platform for engineered carbon removal. Our mission is to mobilize the economy to reward carbon net-negative emissions by helping voluntary corporate buyers accelerate carbon dioxide removal at an industrial global scale. Through the Puro Standard we create carbon credit methodologies for processes that remove carbon dioxide from the atmosphere for at least 100 years. We then certify suppliers that run those processes and issue digital tradable CO2 Removal Certificates (CORCs) into the public Puro Registry per metric ton of carbon dioxide removed. CORCs are then purchased directly from suppliers or via sales channel partners by ambitious corporations like Microsoft, Shopify, and Zurich Insurance, to help reverse climate change and neutralize their residual carbon emissions. With Puro Accelerate, our program to scale the carbon removal ecosystem, we assist suppliers who require financing to launch or expand operations through CORC advance market commitments and prepayments.

In 2021, Nasdaq acquired a majority stake in Puro.earth and together we are driving forward the carbon removal industry, via Puro Standard certified CORCs enabling new revenue streams to accelerate its growth. Visit us at <https://puro.earth/> or on LinkedIn Puro.earth and Twitter @PuroCO2Removal.

For Navigator media inquiries, please contact:

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For Puro.earth media inquiries please email: [puro@gongcommunications.com](mailto:puro@gongcommunications.com)

### **Infinium and Navigator CO<sub>2</sub> Collaborate on eFuels Project in US Midwest**

*Navigator to provide approximately 600k TPA of CO<sub>2</sub> as a feedstock for ultra-low carbon Infinium eFuels*

SACRAMENTO, Calif. and OMAHA, Neb. (May 18, 2023) – Electrofuels provider Infinium and comprehensive carbon management company Navigator CO<sub>2</sub> (“Navigator”) announced today that they have entered into a Memorandum of Understanding and long-term relationship for Navigator to deliver 600,000 tons per annum (TPA) of biogenic carbon dioxide (CO<sub>2</sub>) from its Heartland Greenway system to a future Infinium facility for the production of electrofuels, also known as eFuels.

The Heartland Greenway Carbon Capture, Utilization, and Storage (CCUS) project is one of the largest aggregations systems for biogenic CO<sub>2</sub> in development globally. The system will provide the infrastructure and network to connect industrial emitters of CO<sub>2</sub> to new and developing markets for their carbon, while ensuring project developers, like Infinium, have access to a diversified, consistent, and ratable CO<sub>2</sub> supply.

Infinium is developing next-generation fuels that will accelerate the market's progress toward achieving climate goals during the ongoing energy transition. Infinium eFuels are created using CO<sub>2</sub> that would otherwise be emitted into the atmosphere and renewable power-derived green hydrogen. Ultra-low carbon eFuels contain no sulfur and are cleaner burning than petroleum-based fuels.

“We are committed to delivering long-term, sustainable decarbonization solutions from our growing Heartland Greenway platform, and it’s exciting to see Infinium’s innovative approach to leverage carbon,” said Navigator CEO Matt Vining. “This agreement serves as a great example of how we help our partners optimize their carbon usage and minimize emissions while maximizing value.”

Infinium eSAF and Infinium eDiesel can be used in today’s planes, ships, and trucks as an immediate replacement for petroleum jet and diesel fuels without modifications to engines or distribution infrastructure. Infinium eNaphtha can be used to produce gasoline fuel alternatives as well as replace petroleum-derived naphtha in chemical and industrial processes for the creation of goods like plastics and solvents.

“The demand for eFuels as a climate-friendly alternative to petroleum-derived products continues to grow from both the heavy transit and the chemicals sectors,” said Robert Schuetzle, CEO at Infinium. “Partnerships like this with Navigator are essential to growing our capacity with access to multiple connected CO<sub>2</sub> sources as we scale eFuels production globally.”

Infinium has over a dozen projects in various phases of development across the US, Europe, Japan and Australia.

#### **About Infinium**

Infinium is an electrofuels provider on a mission to decarbonize the world. Electrofuels are a new class of synthetic fuels made using renewable power and waste carbon dioxide, not petroleum or resources needed to produce food. Infinium electrofuels can be dropped into existing trucks, planes and ships, significantly reducing harmful carbon dioxide emissions compared to fossil-based fuels. In addition to

helping the transport industry meet carbon reduction goals, Infinium electrofuels are a lower carbon alternative for chemical processing, including plastics production. Learn why Amazon and other leading cleantech investors have chosen Infinium at [www.infiniumco.com](http://www.infiniumco.com).

**About Navigator CO<sub>2</sub>**

Navigator CO<sub>2</sub> is a company developed and managed by the Navigator Energy Services management team with over 200 years of collective industry experience. The company specializes in CCUS, and the management team has safely constructed and operated over 1,300 miles of new infrastructure since 2012. The company is committed to building and operating its projects to meet and exceed safety requirements while minimizing the collective impact on the environment, landowners, and the public during construction and ongoing operations. Navigator CO<sub>2</sub> is headquartered in Omaha, NE, at 13333 California St., Suite 202. For more information, visit: [navigatorco2.com](http://navigatorco2.com) or [heartlandgreenway.com](http://heartlandgreenway.com) and visit us on [Facebook](#) and [Twitter](#).

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