



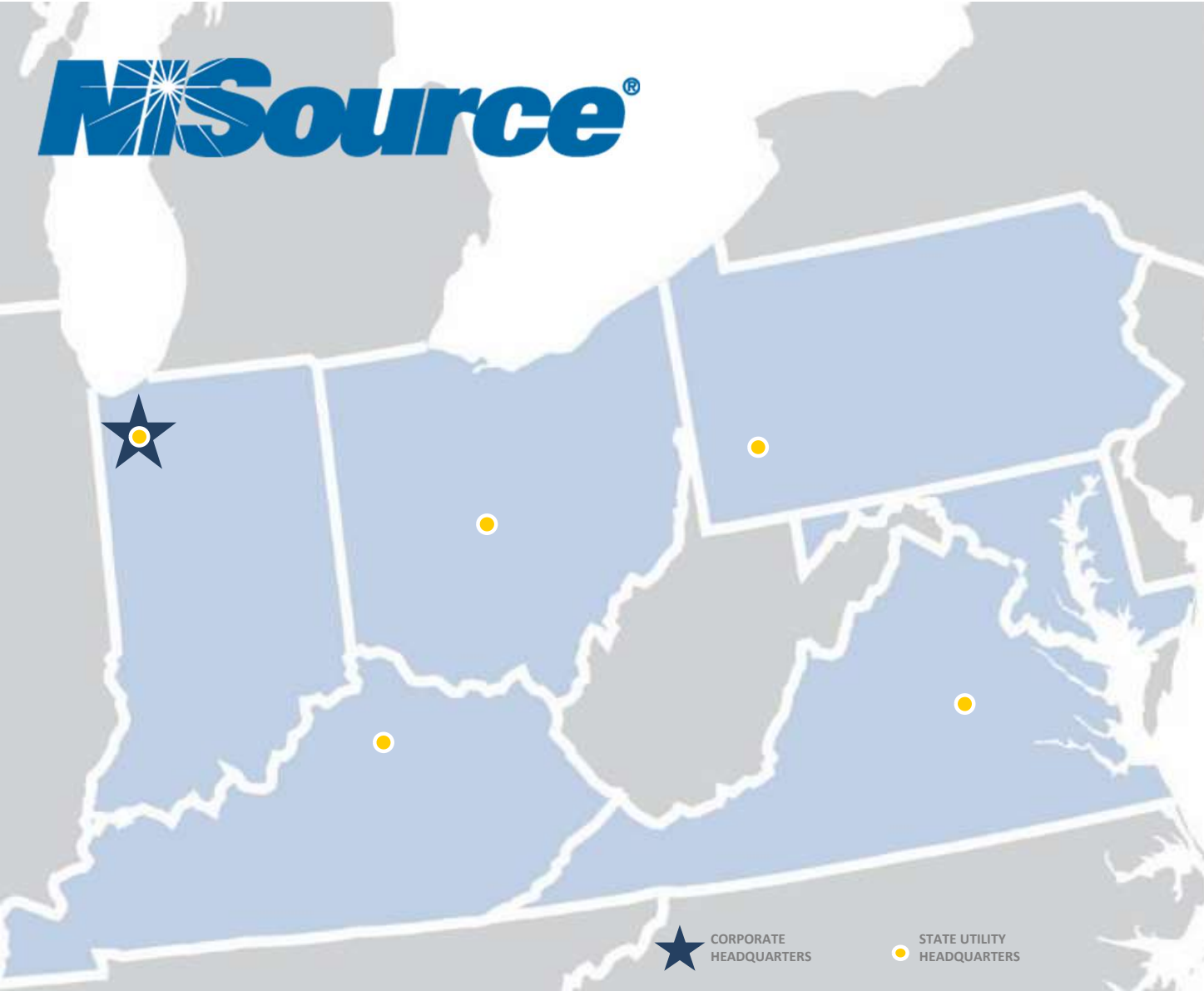
*We exist to deliver safe, reliable energy that drives value to our customers*

## **Natural Gas Utilities Sustainability**

Erich Evans  
Director of Sustainability Strategy & Integration



# NISource®



# Columbia Gas®

# NIPSCO®

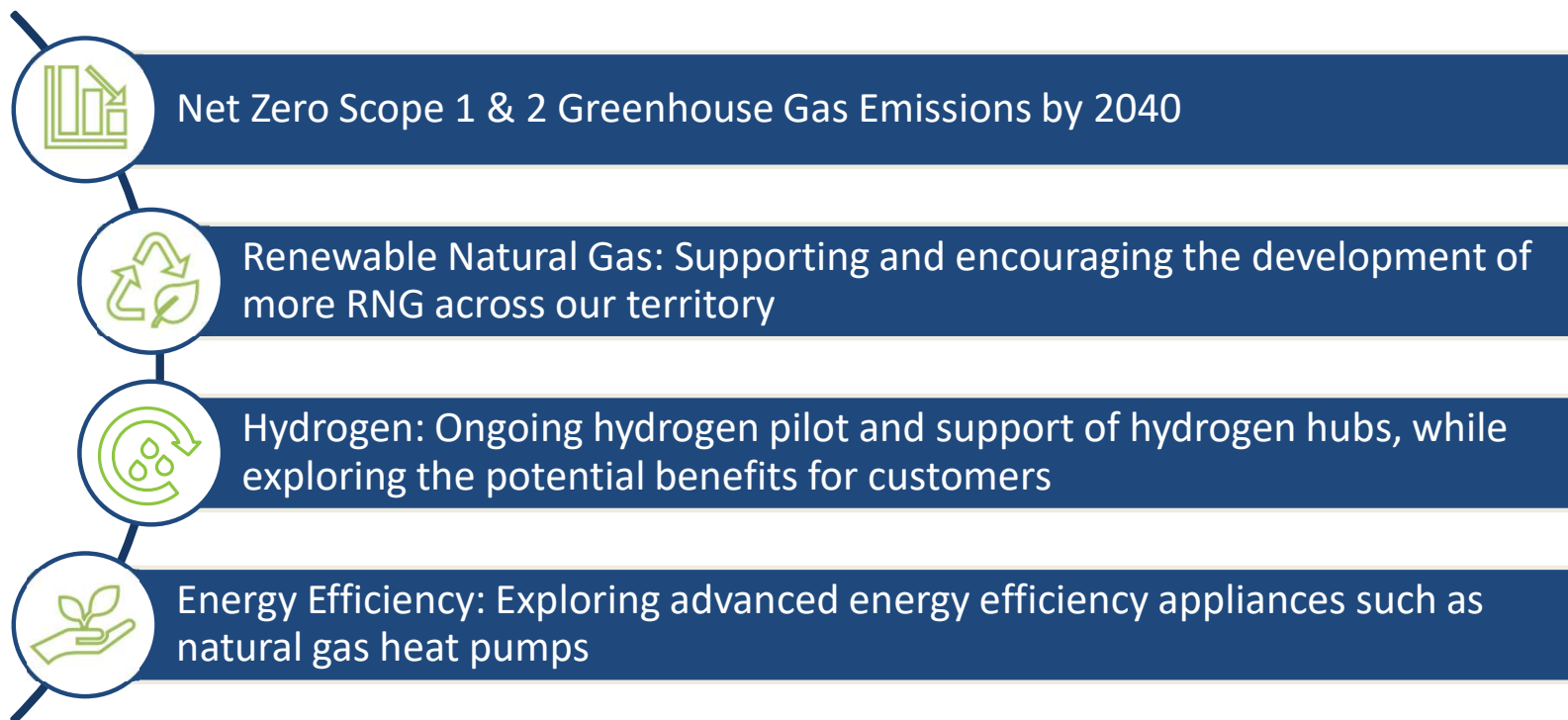
**6-State Footprint**  
**~7,500 Employees**  
**~3.4M Natural Gas Utility Customers**  
**~500K Electric Utility Customers**  
**~\$30B, 20+ Year Infrastructure Enhancement Plan**



### **COLUMBIA GAS OF OHIO Business Profile**

- Largest Gas-Only Utility in OH (~1.5M customers)
- ~20K miles of pipe
- ~2,300 employees

## NiSource is designing a blueprint to ensure the work it does satisfies its customers' long term energy needs



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# Renewable Natural Gas

- **RNG is pipeline compatible gaseous fuel derived from biomass or other renewable sources that has lower lifecycle CO<sub>2</sub>e emissions than geological natural gas**
  - Sources of biomass include wastewater treatment plants, landfills, livestock manure, municipal solid waste, agricultural residues and energy crops.
  - Once produced, the gas must be cleaned and processed before being injected into the natural gas pipeline system
- **Considered a ultra-low to zero carbon renewable energy source**
  - Methane would be released into the atmosphere if it was not captured
  - Commonly flared off or used in co-gen plants (if not injected into pipelines)

**1** **Feedstock**



RNG begins with a feedstock to produce the gas:

- Farm waste
- Municipal waster
- Landfill
- Energy Crops

**2** **Anaerobic Digestion/ Gasification**



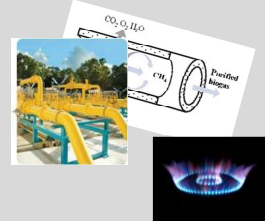
The feedstock produces biogas through gasification or anaerobic digestion. The biogas is captured to become RNG

**3** **Upgrade & Clean**



The captured biogas has impurities striped out to raise the Btu and remove harmful substances. It is now considered RNG

**4** **Injection of Pipeline Quality Gas**



The RNG is compressed, odorized, and injected into the pipeline system and delivered to end users

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## Renewable Natural Gas



### RNG Gas Quality

- Published RNG gas quality standards to protect the system and provide transparent information to RNG producers



### Promote RNG

- Published RNG information on websites to encourage and streamline process for interconnections and delivery of RNG



### FERC Tariffs

- Implemented FERC tariffs to allow RNG to be transported off of our system, allowing producers to access larger market



### Internal Processes

- Established an internal process to streamline processing RNG requests from producers



### Outreach

- Advocating for RNG & to increase amount available on system

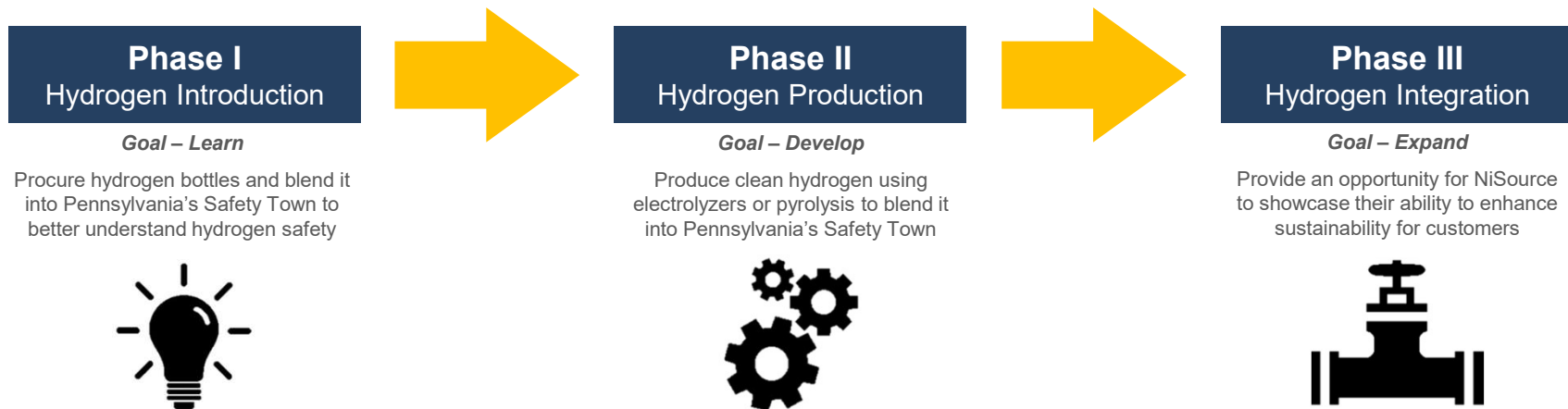


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## NiSource Hydrogen Pilot

Our Hydrogen Pilot is planned to be accomplished in a phased approach where each phase has a distinct learning outcome to prepare NiSource for continuation into the next phase

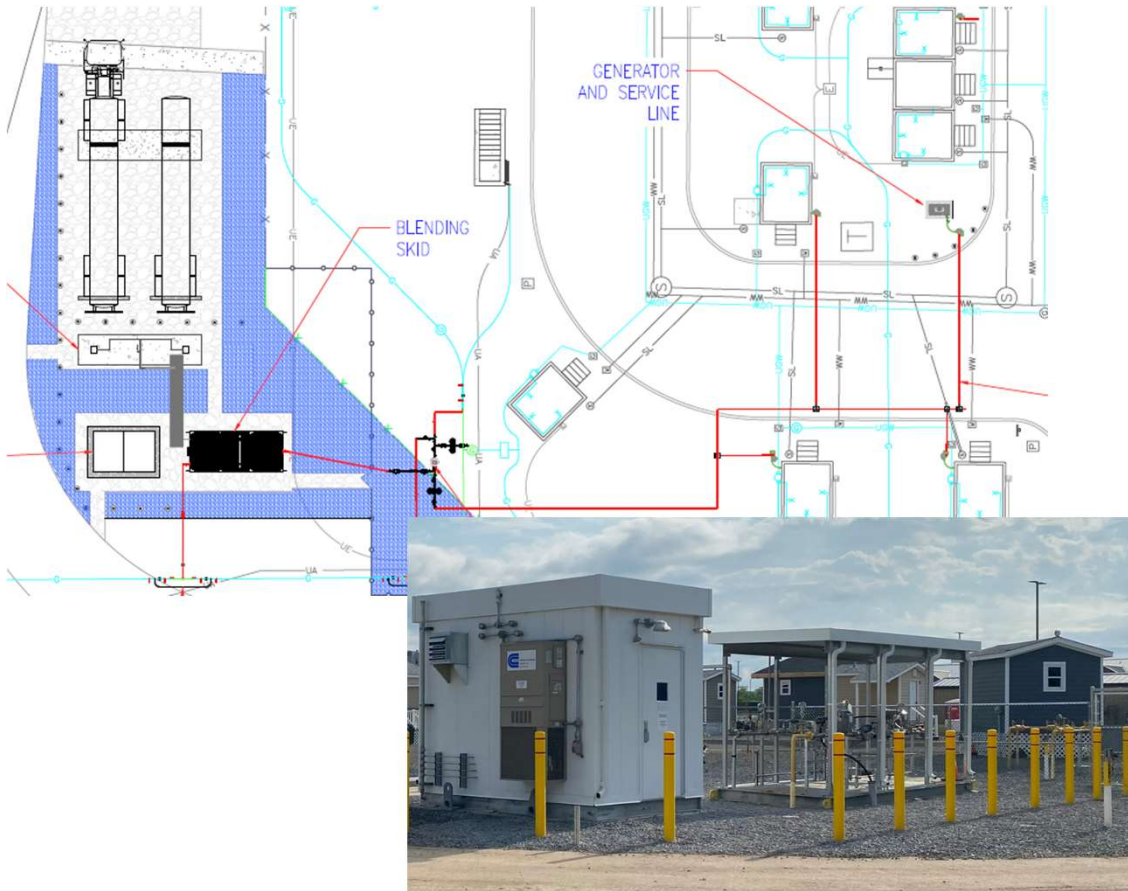


Phase I began in 2022 and will continue through mid-2024  
Phase II or III could follow in later years depending on the results of Phase I

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## Phase I – Hydrogen Blending



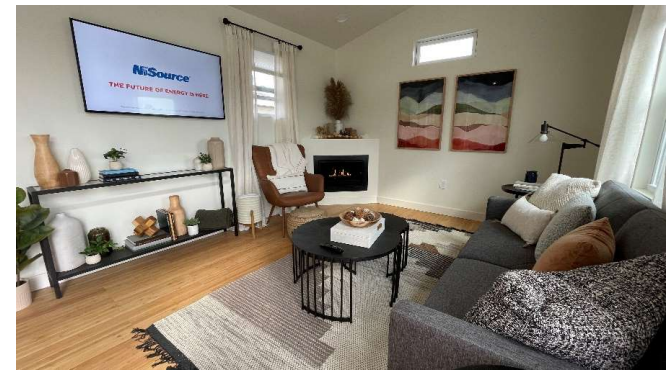
- Installation of blending system into our Safety Town in Pennsylvania in spring 2023
- Able to maintain a precise blend from 0% - 20% hydrogen
- Allows long term and extensive trials and working with hydrogen blends
- Working with partners to verify gas distribution equipment & infrastructure performance with hydrogen blends

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## NiHome – hydrogen home

- Completed in September 2023
- Equipped with natural gas appliances to simulate everyday usage in a residential home environment



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## Phase I – Customer Experience evaluations to date

- Focused on what an average customer would see and experience, with hydrogen blends
- Appliances evaluated includes a range, a gas dryer, and a gas furnace.
- Used scientific methods but have not completed enough trial runs to confirm statistical significance.
- Indicated no noticeable difference in performance, up to a 20% hydrogen blend



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## Overall hydrogen observations & Next Steps

- **Other than the color of the flame on the range, it is not believed that a customer would notice a difference with hydrogen blends in the system**
  - Higher gas throughput on the furnace is believed to have alleviated the color difference between pure methane and hydrogen blends
- **Some observations will require further study**
  - Decrease in CO in flue gas with hydrogen blends
  - Significance of heating difference
- **Next Steps:**
  - Will proceed with collecting data on blends up to 20% & continued evaluation of customer experience
  - Further study on system performance, including meters, valves & fittings
  - Evaluation of leak testing with hydrogen blends
  - Continuation of overall evaluation of system procedures

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**Thank you**

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**Director of Sustainability Strategy & Integration**

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# Hydrogen

The Next Frontier  
of Clean Energy

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# Agenda

- 1 H2 External Outreach
- 2 H2 Blending Pilots
- 3 H2 Task Force & Standards Alignment
- 4 H2 Hubs

# Hydrogen Heights – Outreach



# Media Releases



# Collaboration & Partnerships







# Agenda

2 H2 Blending Pilots

# Getting Started: Gas Distribution Blending Projects

**3** Utah

**2** Ohio

**1** North Carolina



# Hydrogen Heights – Ohio H2 Blending Pilot



# Hydrogen Heights – Ohio H2 Blending Pilot



# Hydrogen Heights – Ohio H2 Blending Pilot





# Agenda

- 3 H2 Task Force & Standards Alignment

# H2 Task Force & Standards Alignment

Workforce ready starts with ...





# Agenda

4 H2 Hubs



# DOE Regional Clean Hydrogen Hubs

- Up to \$8 billion federal investment to establish regional clean hydrogen hubs.
- In October 2023, DOE announced 7 hydrogen hubs selected for award negotiations.
- Dominion Energy Ohio is a project development partner in Appalachian Regional Clean Hydrogen Hub (ARCH2).



# Resources



[Dominion Energy: Hydrogen: The Next Frontier of Clean Energy](#)

[Dominion Energy: 2022 Sustainability & Corporate Responsibility Report](#)

[Dominion Energy: 2022 Methane Report](#)

[Regional Clean Hydrogen Hubs Selections for Award Negotiations](#)

## Biographical Information

**Moderator: Joseph M. Clark, Esq., Assistant General Counsel**  
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Joe Clark is an Assistant General Counsel at NiSource, primarily representing Columbia Gas of Ohio at the Public Utilities Commission of Ohio and Columbia Gas of Kentucky at the Kentucky Public Service Commission. Joe has worked at NiSource for over eight years. Before coming to NiSource, Joe worked in-house for two competitive retail commodity suppliers, and worked at a law firm in Columbus primarily representing Ohio large industrial customers on electric matters. Joe is a graduate of the Moritz College of Law at The Ohio State University and earned his undergraduate degree in International Affairs from Muskingum University.

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**Erich Evans, Director, Strategy & Risk Integration**  
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Erich Evans is the Director of Sustainability Strategy & Integration of NiSource, Inc. In this role, he is responsible for developing NiSource's sustainability strategy. He works with senior leaders to identify, refine and analyze strategic issues across the gas and electric industries, while developing a long-term strategy with a focus on sustainability initiatives. In addition, Evans oversees scenario analysis and alternate fuels strategy, such as work on renewable natural gas and hydrogen.

Evans has over 25 years of experience in energy and utilities. Most recently, he served as Director of Strategy and Risk at NiSource. In this role, he was responsible for overseeing the development of NiSource's long term strategy and risk management. Prior to his current role, he held leadership positions over regulatory strategy, commodity sales and gas transportation. He also previously held leadership roles at Enron and CSC Energy Services. He received bachelor's degree in economics from Miami University.

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**Joshua W. Davis Supervisor, Gas Design Project Management**  
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Joshua Davis is a visionary leader and passionate advocate for renewable energy and sustainability. With a background in Chemical Engineering and an MBA, Joshua has dedicated his career to driving innovation and advancing the adoption of clean energy technologies. As a seasoned project manager, he has successfully led multi-million-dollar initiatives, including Dominion Energy Ohio's hydrogen blending pilot project, showcasing his strategic vision and commitment to environmental stewardship. Joshua's collaborative approach and cross-functional leadership have earned him recognition as a thought leader in the energy industry, where he actively promotes diversity and inclusion as essential drivers of innovation and progress.

Outside of his professional endeavors, Joshua is deeply engaged in his community, serving as a board member for various organizations, including the Black Professionals Charitable Association. He is also an active member of the American Association of Blacks in Energy and the National Society of Black Engineers, where he mentors aspiring engineers and advocates for diversity in STEM fields. Joshua's dedication to service, leadership, and advocacy underscores his commitment to making a positive impact and building a more sustainable and equitable future for generations to come.