

Heartland and Empire Partner to Produce Sustainable Hydrogen from Food Waste in West Virginia

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Heartland Water Technology and Empire Diversified Energy (“Empire”) have announced a collaborative effort, alongside Empire Green Generation (a wholly-owned subsidiary of Empire), to develop a groundbreaking facility at the Port of West Virginia.

This state-of-the-art plant will convert food waste into clean-burning hydrogen and sustainable carbon, contributing to the Department of Energy’s Appalachian Regional Clean Hydrogen Hub (ARCH2) initiative.

The partnership signifies a significant advancement in transforming waste into a source of renewable hydrogen. The project utilizes a multi-step process to achieve this goal:

1. **Anaerobic Digestion:** Food waste is initially processed within an anaerobic digester, producing biogas and a residual solid material (digestate).
2. **HelioStorm™ Technology:** Heartland’s proprietary HelioStorm™ ultra-high temperature ionic gasifier then employs a methane pyrolysis process on the biogas. This generates clean hydrogen and valuable, sustainable carbon.
3. **Dual Gasifier Pathway:** The digestate is further processed through Heartland’s LTC Dry™ and HelioStorm™ gasifiers in a separate pathway. This step produces an ultra-pure, tar-free synthesis gas.
4. **Clean Energy Generation:** The synthesis gas is then used to generate clean energy, powering the entire conversion system and reducing reliance on traditional grid power and fossil fuels.

“The project not only aligns with our vision to redefine waste, it underscores the critical role of renewable hydrogen in shaping a sustainable, circular economy. Hydrogen is more than an energy carrier; it represents a cornerstone for future sustainability goals, offering a path to decarbonize industries and energize communities in an environmentally responsible manner,” said Chris Beaufait, CEO of Heartland. “Empire is a world class developer of sustainable projects. We are excited to work together to deliver an exciting and impactful waste treatment and hydrogen generation plant.”

Bernard Brown, Empire COO, added, “The ARCH2 hydrogen hub is a beacon of innovation and leadership in the renewable energy sector. By leveraging this hub as a pivotal platform for collaboration, research, and development, we aim to demonstrate how strategic investments in decentralized hydrogen infrastructure and technology can yield significant environmental and economic benefits. The integration of Heartland’s HelioStorm™ technology into the project is a game-changer, harnessing groundbreakingly efficient methods to convert food waste into renewable hydrogen, propelling us toward our hydrogen goals.”

The project, designed to convert food waste into clean energy, is anticipated to commence operations in the third quarter of 2025.