



FIRST IN NORTH AMERICA TO EMBRACE HTC

Phoenixville to Install Game-Changing Technology

PHOENIXVILLE, PA - December 10, 2021 - The Borough of Phoenixville has been unveiling history-making advancements that will guide the future of the revitalized steel town. Repurposed parks, connected trails and smart development accentuated by improved infrastructure have people buzzing about Phoenixville.

Now, with the Borough's population at its highest point in history, Phoenixville has announced a revolutionary project certain to have regional impact and global appeal.

Phoenixville will partner with SoMax BioEnergy (www.somaxhtc.com), Spring City, Pennsylvania, to modernize the Borough's current wastewater treatment facilities and to significantly improve the very nature of wastewater treatment on the entire continent.

The first municipally owned facility to implement hydrothermal carbonization technology in the U.S.—and the first of any type of facility to implement it on a commercial scale—the Borough's wastewater treatment plant will soon be transformed into a resource recovery system.

WHAT IS HTC?

The Borough's commitment to resource recovery is significant, and the technology they are adopting is revolutionary. The hydrothermal carbonization (HTC) process converts organic waste into sustainable and useful bioproducts by applying heat and pressure.

"We are mimicking the way nature produces coal and other fossil fuels, but we are using chemistry to speed up the process from 250 million years to a couple of hours," offers Dan Spracklin, founder and CEO of SoMax.

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On the site of the existing wastewater treatment plant, Phoenixville Pennsylvania borough representatives discuss the potential of the transformative new hydrothermal carbonization system to be installed in the coming months. Borough Manager Jean Krack, Mayor Peter Urscheler, Council President Jon Ewald, Wastewater Treatment Plant Manager Matt Mullin, and Public Works Director Brian Watson recently toured the upgraded facility that will house the first municipal HTC plant in North America.

The main product of this process is BioCoal, a solid carbon that has the attractive attributes of its fossil fuel cousin without the negative environmental impact.

“We are capturing today’s carbon from biomass, which captured it from the air via photosynthesis. If we use it as a fuel, we aren’t adding any additional carbon to the atmosphere,” Spracklin continued.

BioCoal can be used as a fuel to power all the energy-intensive activities at the wastewater treatment plant with leftover energy to supply back to the grid. Or it could be used in construction material, displacing carbon-intensive material with recovered and sequestered carbon that has effectively been removed from the atmosphere.

Any of these uses will significantly improve the current process of disposing of waste, especially when applying sewage sludge to land or landfilling it, which are the current standard methods for wastewater treatment plants across the United States.

The HTC process is highly efficient, capturing up to 95% of the carbon from the waste material. Currently, Phoenixville uses a biological process called anaerobic digestion that takes 28 days to produce biogas, which consists of methane and carbon dioxide.

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Biogas currently produced at the plant is used to heat the digestion tanks but does not produce any excess energy for use. Anaerobic digestion only has a carbon efficiency of 50%, or roughly half of what the new HTC system will capture. In addition, the HTC process removes harmful chemicals, pharmaceuticals, and microplastics from the sewage sludge.

“The current process of applying sewage sludge to agricultural land is actually detrimental to the environment,” says Spracklin. “Sure, the farmers are getting free nutrients and fertilizers, but they are also potentially polluting farmland with chemicals, microplastics, and pharmaceuticals, which make their way into our food, our water, and our bodies.”

Historically, waste treatment solutions have focused on near-term waste handling without looking at the problem holistically. Phoenixville’s HTC system upends the current treatment-disposal model and creates a sustainable zero-waste system for future generations of Phoenixville residents.

According to Phoenixville Borough Manager Jean Krack, “At capacity, the HTC system will capture and reduce the CO2 emissions equivalent to removing all of the emissions from every vehicle owned by Phoenixville residents. We can accomplish systems-level decarbonization at our existing centralized location that won’t require any change in residents’ behavior. Everyone in the community benefits.”

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SYSTEM UPGRADE

Phoenixville's new HTC system comes with a price tag of just over \$3 million, but it is expected that the cost will be recouped relatively quickly through savings on disposal costs, energy costs, and possible additional revenue if the bioproducts are sold.

"The system that SoMax BioEnergy and the Borough are developing to replace the current antiquated system—our largest user of costly energy—isn't just sustainable," adds Phoenixville Borough Council President Jonathon Ewald. "It is state-of-the-art efficiency."

The system that SoMax BioEnergy and the Borough are developing to replace the current underperforming system is a model approach for municipalities of all sizes throughout Pennsylvania and all around the world.

And so far, the project has attracted some serious funding, including a \$402,000 grant from Chester County and \$650,000 from the Commonwealth of Pennsylvania.

Most recently, SoMax was awarded a \$250,000 United States Department of Energy Water Resource Recovery Prize for the innovative project they are implementing for Phoenixville. SoMax is one of a growing number of clean-technology companies in Chester County positioned to develop processes, products, and services that reduce negative environmental impacts through significant energy efficiency improvements, the sustainable use of resources, or environmental protection activities.

The HTC system is currently in the construction phase at the existing wastewater treatment plant site on South 2nd Avenue, and the Borough is developing a website to communicate progress and showcase the innovative technology to others.

In 2017, the Borough of Phoenixville committed to a goal of transitioning to 100% clean energy by 2035, and the HTC wastewater treatment plant, proposed in 2018, is a significant step in the right direction.

The new plant is so innovative and newsworthy that the Borough plans to brand it with a unique identity and potentially include a STEM educational component.

For more information on Phoenixville's HTC plant, please visit www.phoenixville.org.

