



Carbon Capture and Re-utilization

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Carbon Capture and Re-utilization

<u>HY-TEK Bio, LLC</u> is a private, Maryland based, corporation that uses the natural efficiency of photosynthesis to digest carbon and optimize algae production for a growing global market.

HY-TEK Bio reduces the carbon footprint of any powergenerating facility with a customizable breakthrough technology. Large bioreactors containing algae absorb up to 100 percent of the greenhouse gas emissions from flue gases produced in industrial manufacturing and power generation.



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It's all done using an optimized photosynthesis process, HY-TEK Bio isolated a unique strain of algae - named it HTB-1 (for HY-TEK Bio 1) - with the assistance of the University of Maryland Center for Environmental Science (UMCES).

HTB-1 is singular among thousands of strains of algae because it excels in numerous criteria, including wider ranges of tolerance for temperature, CO_2 and pH levels. Its fast reproduction rate and high market value as biomass made it the perfect candidate for HY-TEK Bio's technology.



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HY-TEK Bio, LLC operates a test facility at Back River Wastewater Treatment Plant in eastern Baltimore County, MD, with operations for the reduction of GHG through optimized photosynthesis, and the production and harvesting of algae biomass.

The company operates with a combination of private investment, and Maryland State grants, and is poised to move into commercialization.



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Technology is currently in place mitigating a portion of a 3MW methane-fired power plant.

Siemens' Control Automation is built into the system, ensuring full automation, from flue gas collection through algal growth and harvesting, to post-production packaging.



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Bioreactors

UV

Clean

Final

Filter 3

Color &

Odor



HTB-1 thrives on nutrient developed from chicken manure in conjunction with UMCES.

Product Reservoir Hvdro Primary Mix Filter 1 Filter 3 Mix Mix Cyclone High N Reservoi Reservoi Reservoir High F N&P Large bioreactors give HTB-1 the ability

to digest injected flue gas at volume for growth and mitigation.







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Anti-freeze

Chest Freezer

Warm Glycol



An automated system regulates the collection and flow of flue gas.

Gas Injection

Flue Gas

Condensate from Coils

Dry-Cool Flue Gas

To Nutrient Mix Station

to Air Compressors



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is returned to the system

The control system automates harvesting of the algae, and recycling of the water.



Biomass is packed and

refrigerated for distribution.

The Harvest





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THANK YOU.

More information -

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