



Helping New York State address its climate goals

Cornell University, Rochester Institute of Technology, SUNY ESF, Syracuse University, Keuka College and City University of New York organized a workshop at Cornell University's biochar facility on July 16, 2019 to discuss opportunities for New York State to meet its climate goals using thermochemical conversion of biomass and waste.

Major Outcomes and Recommendations from Panel Discussions:

The **policy** panel addressed the recently signed New York State Climate Leadership Community Protection Act, designed to enshrine GHG emissions reductions targets into state law while creating a framework for implementation. Policy makers encouraged stakeholders to work on expanding education about pyrolysis as a technology well suited to assist in carbon sequestration, with an eye towards future developments of private or public sector carbon markets. The panel emphasized the importance of research in overcoming real world challenges to emissions reduction, and the need for scientific data to support applied solutions with an proven environmental and economic benefit.

The **stakeholder** panel highlighted the following status update and future needs:

- Pyrolysis coupled with biochar production is 1 of 5 major ways agriculture can contribute to mitigating climate change through C sequestration.
- TC success relies on a consistent and stable supply of substrate/feedstock. There appears an unmet coupling with livestock manure, wood waste and human sludge that could meet this supply.
- An example of the financial upside is that a dairy farm milking ~1500 cows spends ~\$850,000/year on manure management. If a TC process could separate the solids from the water (i.e. decrease the handling capacity needs), sequester C, and create another useful/saleable product it would be a win-win-win.
- Life-cycle analyses on biochar from pyrolysis are needed for various feedstock.
- Education of people, based on data would help social acceptance and investment .
- In general players in this field, whether they be producers of feedstock (e.g. farmers, loggers), inventors, engineers, entrepreneurs (e.g. private and academic sectors), and public servants (e.g. NGOs and government officials) should not be in defensive posture when working on TC, but rather offensive collaboration.

The **technology solutions and business** panel identified the following priorities:

- Biochar production equipment manufacturers should focus on the solutions they can provide to potential buyers rather than the features of the product they are trying to sell.
- Long Island has tremendous potential for manufacturers of biochar production equipment to sell in NYS due to its unique geography, regulatory environment and large generation of organic material.
- Universities within NYS need to help develop applications (and therefore markets) for the use of biochar which are unbiased and free of conflict of interest.
- Higher levels of environmental regulation (as those in the E.U.) would be good for the U.S. biochar industry.
- Explaining the difference between combustion & pyrolysis to policymakers is key to avoid misunderstandings.
- Capital (project) financing is a barrier to wide scale dissemination of biochar production technology throughout NYS

FOR MORE INFORMATION: <https://pyrolysis.cals.cornell.edu/workshop-july-16-2019/>

The next workshop will be held at RIT on Tuesday, April 7, 2020

Panels

Policy to address New York State's Climate Goals

Moderator: Julie Suarez

Patrick Hooker, Deputy Secretary, Executive Chamber, New York State

Donna Lupardo, Chair of the New York Assembly Agriculture Committee

Jen Metzger, Chair of the New York Senate Agriculture Committee

Elizabeth Wolters, Deputy Director of Public Policy, New York Farm Bureau

Stakeholder Needs and Opportunities

Moderators: Jan Nyrop, Daryl Nydam

Kathleen Draper, Finger Lakes Biochar

John Gaunt, GreenTree Garden Supplies, bio365, Ithaca

Jose Luis Lozano, Ithaca Area Wastewater Treatment Facility

John Noble, Noblehurst Farms

Andrew Pomeroy, Crystal Creek Organics, Rochester

Ken Schlather, CCE Tompkins County

Technology Solutions and Business

Moderators: Tom Trabold, Steve Barber

Taylor Myers, Biomass Controls

Marshall Mermell, Advanced Resilient Technology

Anders Ragnarsson, ROI

John Schwartz, Seneca Farms Biochar

Science Presentations

Moderator: Jan Nyrop

Tristan Brown, SUNY ESF

Marco Castaldi, City College of New York

Jesse Bond, Syracuse University

Thomas Trabold, Rochester Institute of Technology

Johannes Lehmann, Cornell University