



US Biochar Initiative Newsletter

October 2022

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Building the Biochar Industry Education and Outreach

by Tom Miles, Executive Director



USBI at WEFTEC

Earlier this month, USBI presented a biochar market and industry overview to 130 attendees in a pyrolysis session at **WEFTEC**, the Water Environment Federation's national convention in New Orleans. Dr. Isabel Lima, USDA Agricultural Research Service and USBI board member, presented work on biochar and activated carbon. **Stantec's** Ed Matthiessen and Erik Migow, reported on using biochar and iron-amended sand to filter e-coli and phosphorous from stormwater for the City of Minneapolis. Bryan Eagle and Doug Bogue of **Glanris** displayed their rice husk, char-based water filtration products. Valentino Villa and Dario Presezzi of **Bioforcetech** displayed their biosolid drying and pyrolysis system with biochar-amended consumer and building products developed by their collaborators. We also learned that carbon brokers and distributors are interested in contacting biochar producers who can provide reliable supplies of consistent quality biochar.

Other popular WEFTEC topics included reduction or filtration of the "forever chemicals", **PFAS and PFOS**, including reuse of the filtration media. Attendees in the biosolids pyrolysis and gasification sessions were interested to learn how carbonization can reduce PFAS/PFS in air, solid, and liquid effluents. While some tests show reduction of PFAS in biochars at high temperatures (850°C) with suitable retention times, complete data for these contaminants in air and liquid effluents from pyrolysis are not yet available. Analytical methods are still being reviewed by EPA prior to regulation. There is also interest in biosolids biochar characterization that would benefit the use of high ash, low carbon biochars.

USBI at SAF

At the **Society of American Foresters** (SAF) annual convention in Baltimore, USBI joined the US Forest Service to present a session on biochar and urban forestry. The session was well attended with foresters and contractors interested in the benefits of biochar for volume reduction, urban tree survival, and carbon removal.

New USBI Director of Communications

USBI welcomes **John Webster** as our new **Director of Communications**. Many of you know John, a Utah biochar producer (GoBiochar!), as the ever present videographer and trade show manager at the August Biochar 2022 in Morgantown, West Virginia, and for his frequent social media postings promoting biochar. This week John will join International Biochar Initiative at **The Verge** in San Francisco, an event which will illuminate the business opportunities created by radical efficiencies in energy, building, water and transportation technologies.

USBI Exhibit in Works for USCC

USBI is preparing an exhibit for the US Composting Council **Compost 2023** in January in Ontario, California. Producers interested in attending please contact us at usbiochar@gmail.com. Early registration ends soon. Biochar-amended composts have good consumer acceptance in a highly competitive market. (USBI presented a workshop and hosted a session on biochar at Compost 2020.) Look [here](#) for our newly-released USBI factsheet on biochar-amended growing media published on the USBI Learning Center.

Attention Biochar Producers - Investment Incentives and Label Claim Requirements

Be sure to investigate **Inflation Reduction Act** investment incentives available for energy products. These are good for installations prior to 2026 which should include most projects initiated in the next two years. Also, be aware of your state's requirements for registration and labelling of products used in soil amendments or filtration products. Claims made on labels and advertising for outcomes like reduction of bacteria or benefits for plant growth need to be registered with state environmental agencies — otherwise sale of your product may be prohibited. See the USBI website for [Labelling Guidelines for](#)

Discussions Underway with Carbon Consultants and Brokers

USBI is considering approaches to developing standards for biochar applications in specific markets and for carbon credits. Carbon Standards International, International Standards Organization (ISO T-238), American Association of Agricultural and Biological Engineers (ASABE) and the NSF Sustainability and Standards Group (NSF). Many thanks to those who have prompted these discussions.

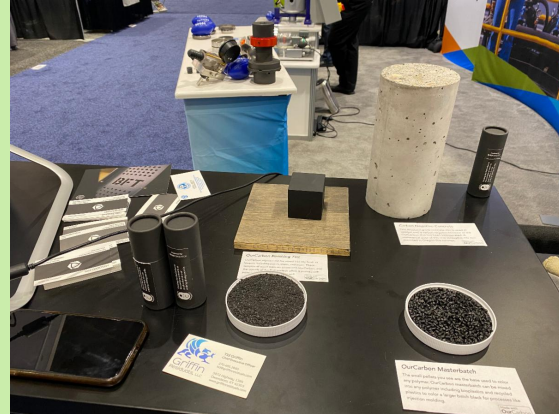
Tell Us What You Need to Succeed

We are excited to welcome many new North American projects and producers to the biochar community. USBI and the US Endowment for Forestry and Communities have issued a Request for Proposals for a stakeholder survey. We have not conducted an industry survey since 2018. The survey is intended to identify stakeholders and their needs. The application can be requested at usbiochar@gmail.com Responses are due November 15.

Biochar companies interested in participating in a **North American Pavilion** at the Bio360 conference in Nantes, France should contact Paul Stuart by October 28.



Glanris exhibits biochar-based filtration products at WEFTEC.



Bioforcetech exhibits products from biosolids biochar at WEFTEC.

Q What resources does GECA provide biochar producers and other clients?

Leung GECA helps producers optimize their projects through technology selection, market-product fit, and product development. We offer a wide array of services but are specialized in pyrolysis and biochar. Our firm has the capacity to work horizontally on projects and has three teams – 1) engineering and technology, 2) products, soil and environment, and 3) carbon markets. Most projects are multi-disciplinary, enhancing the understanding of change on any aspect of the project and providing solutions that take into account all factors. GECA employs engineers, agronomists, soil scientists, carbon specialists, ESG and sustainability experts.

Q What are the biggest challenges your clients are facing?

Leung The biggest challenges are 1) selling the biochar and 2) obtaining and closing financing. GECA is now developing brokerage capacity to support our clients in selling their physical biochar. We also work on multiple fronts to help producers gain access to alternative financing methods such as carbon credit pre-sales and carbon investment.

Q What steps are involved in your approach to project development? How long should clients expect these types of projects to take?

Leung If a client wants to develop a plant, the process, from business plan inception to commercial operations, would take about 3-5 years. We lead the client through business planning, feedstock, technology, product market, and site selection, permitting, financing, system manufacturing, delivery, installation, and commissioning. Of course, each project encounters its own challenges. GECA's

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**Melissa Leung, Director
Business Development & Carbon**

approach is holistic - our engineering, product, environment and carbon teams work hand-in-hand to deliver an optimized, integrated solution.

Q What steps are involved in your approach to biochar carbon removal projects? How long should clients expect these types of projects to take?

Leung For carbon project development, project length mostly depends on the standard used, the stage of the physical project (i.e. plant operations), and the structure behind the project. It can vary between three months to two years. The first and most important step is analyzing project characteristics against the available standards. The choice of the standard is critical to many components of the project such as:

- Timelines - when can you be certified and when can you have certified credits in hand to sell?
- Financials - which standard is best adapted to optimize my net revenue?
- Market - who are the best buyers for my project considering every standard or not?
- Complexity - which standard has the least risk of controversy for my type of project?

These are only some factors to take into account when selecting a standard. After, project development under PDD (Project Design Document) and an LCA (Life Cycle Analysis), auditing (by a 3rd party) will take place. GECA also takes care of commercialisation, including marketing, sales, negotiation and contracting with buyers to reach best terms for each project.

Q Can clients finance the costs of your services?

Leung Depending on project location and other factors, our clients may be able to obtain grants and subsidies for our services. In Quebec and Canada, GECA can find such programs and apply on behalf of project developers. In the rest of the world, it depends on the availability of local programs. In the carbon space, certain GECA collaborators, buyers and investors may be inclined to finance our service fees for client projects which interest them.



Q Does GECA help clients find investors?

Leung GECA is not a registered investment broker, therefore it is impossible to broker such deals. However, when possible, we do put entities in contact with each other if there is a potential collaboration opportunity.

BIOCHAR EVENTS CALENDAR

Jan 24-27 COMPOST 2023, The World's Largest Composting Event, Ontario, California Learn about a University of Vermont study on how biochar co-composting of dairy manure substantially reduces methane. [Register here.](#)



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STAY PLUGGED INTO ALL THAT'S HAPPENING IN THE BIOCHAR INDUSTRY!

USBI helps you stay connected to the latest developments with nearly an all-volunteer team. Please show your appreciation by making a generous gift this month!

GIVE GENEROUSLY



[USBI LEARNING CENTER](#)

[How to Use Biochar to Promote Plant Survival](#) Fact Sheet,

Not all biochar is created the same. Biochar from different feedstocks and temperature regimens behave differently



depending on the application. In this resource, learn from the biochar experiences shared by a turf manager, a vegetable farmer, and soil blend/compost producer.

Filter Pollutants with Biochar Fact Sheet When impervious surfaces prevent rain or snowmelt from being absorbed into the ground, pollutants carried by this water find their way into rivers, lakes and coastal waters. Learn how pollutant levels can be reduced when biochar is integrated into stormwater management best practices.



Biochar Removes Carbon Fact Sheet Companies are purchasing biochar carbon credits as one strategy to become carbon neutral. But is investing in biochar carbon revenue potential markets right for your business? Learn about the pros and cons, the value of biochar carbon credits, and how they are sold in the voluntary market.

BIOCHAR NEWSLINKS

► **A Soil Breakthrough Plants Hope for City Rooftops**. University of Toronto researchers are working with biochar as a growing medium for green roofs. The low-density material could allow for larger green roofs, making it easier to cool buildings with rooftop gardens.



This University of Toronto green roof provides research opportunities to undergraduates as a part of the Green Roof Innovation Testing (GRIT) Laboratory. Image courtesy of Wenxi Liao »



► **U.S. Forest Service and Air Burners Team Up to Fight Climate Change**. Wood waste is a big problem, and it's growing bigger every day. Seventy million tons of it are collected each year, with only 29% getting recycled. U.S. Forest Service and Air Burners, Inc. are working together through a Cooperative Research and Development Agreement (CRADA) to research, develop, and test the utility and marketability of the CharBoss, an innovative mobile machine that creates biochar out of wood waste piles.

► **CHAR Technologies Gets \$1.5M Boost for Ontario Renewal Natural Gas & Biocarbon Project**. CHAR Technologies Ltd. is receiving a \$1.5-million boost from the Canadian government through the Federal Economic Development Agency for Southern Ontario (FedDev Ontario). Once fully operational, the project is anticipated to simultaneously produce renewable natural gas and biocarbons, converted from clean, woody feedstocks that would otherwise be destined for landfills.



CHAR Technologies CEO Andrew White in front of demo facility. »
Photo courtesy of Annex Business Media.

Leacock Township Supervisors Support Farmer Seeking Grant to Use Biochar in Stormwater Management. Support for the innovative project will allow a Pennsylvania farmer to use biochar instead of stone-filled trenches to control runoff from high tunnel agricultural buildings. Biochar provides more

flexibility if the structures are ever moved, because it is difficult to remove the stone for the return of the soil to farmland.

> **Biochar-bioenergy Tradeoffs Examined in California.** Biochar is planned to be a byproduct of the biomass-to-energy plant that Frontline BioEnergy proposes to build for handling 300,000 tons per year of nut shells and other waste. The plant will produce 3.5 billion megajoules of energy per year in the form of methane and 36,000 tons of biochar.

> **Challenge Filed Over Moreau, NY Biochar Plant** Concerned about potential emissions of PFAS and other pollutants, New York's Clean Air Action Network of Glens Falls is filing a petition against the Town of Moreau Planning Board and Northeastern Biochar, developer of a proposed facility to pyrolyze sewage sludge to make biochar.



WEF and Partners Explore Option to Destroy PFAS with Heat. The Water Environment Federation's \$500,000 study with Brown and Caldwell, Western University, and North Carolina State University will explore the use of pyrolysis to destroy PFAS while producing biochar and

energy. PFAS, or Per- and Polyfluoroalkyl Substances, are present in soil, fish, and water. "The water and wastewater industry urgently needs a solution to stop the cycling of PFAS in the environment," said principal investigator Lloyd Winchell. "This groundbreaking research will use state-of-the-art analytical methods to address this complex issue and fill a critical gap in the ever-changing PFAS landscape."

> **Manitoba Province Funds Conservation and Climate Projects, Including Biochar.** Canada's Carbon Lock Technologies Inc. received \$125,000 for a project to carbonize biosolids to address methane emissions and nutrient loading. The company sees an opportunity to use this biocarbon as a soil amendment in Manitoba.

Cities Can Recycle Urban Tree Waste to Renew the Urban Forest with Biochar. A new analysis from Yale University suggests that the dry waste from urban trees in the US — leaves, cuttings, and so on — could be diverted from landfills or incinerators, and instead be reused to grow new trees, reduce logging, and lower carbon emissions. It's a potentially huge resource — US cities generate more than 45 million tons of tree waste every year.



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