



October 2013 News from the International Biochar Initiative

[Open Public Comment Period for American Carbon Registry's Methodology for Emissions Reductions from Biochar Projects](#)

Winrock International's American Carbon Registry (ACR) recently announced an open public comment period and is seeking stakeholder feedback on a [voluntary carbon offset quantification Methodology for Emissions Reductions from Biochar Projects](http://americancarbonregistry.org/carbon-accounting/methodology-for-biochar-projects) (<http://americancarbonregistry.org/carbon-accounting/methodology-for-biochar-projects>). **The comment period has now been extended to November 22, 2013.** You may submit your comments to ACR@Winrock.org by close of business on November 22.

The methodology quantifies and credits both the avoided emissions from combustion or decomposition of biomass in the baseline scenario as well as enhanced carbon sequestration at sites where biochar is applied. Under the methodology, biochar may be produced from any biomass residues from forestry and agriculture, municipal solid wastes, and other biomass-based materials approved for use under the International Biochar Initiative's [IBI Biochar Standards](http://www.biochar-international.org/sites/default/files/IBI_Biochar_Standards_V1.1.pdf) (http://www.biochar-international.org/sites/default/files/IBI_Biochar_Standards_V1.1.pdf) (2013) provided such feedstocks also meet sustainability criteria specified in the methodology.

ACR hosted a public webinar to review the methodology on October 28, 2013, which was presented by ACR and the methodology developers, including IBI and colleagues from The Climate Trust and The Prasino Group. The webinar, which was well-attended (98 individuals participated), was followed by a 30-minute Q&A session, and can be accessed for viewing at <http://youtu.be/Ou-xpscWYjw?t=5s>.

[Update on IBI Biochar Standards and IBI Biochar Certification Program](#)

IBI is working to develop the first major policy and technical revisions of the *Standardized Product Definition and Product Testing Guidelines for Biochar That Is Used in Soil* (aka the *IBI Biochar Standards*). Version 2.0 of the *IBI Biochar Standards* is being developed with the input of a panel of global experts familiar with various facets of biochar. Issues being addressed include identification of enhanced test methods for several physicochemical parameters, as well as clarification on acceptable biochar post-processing and biochar sampling procedures prior to laboratory testing.

Simultaneously, IBI is working to promote and enhance the *IBI Biochar Certification Program*—which is based on the *IBI Biochar Standards*. We continue to receive strong interest in certification and have several applications in process. As with any new program, we are striving to make the application process smooth and our responses timely, but these first few applications have pointed out some necessary clarifications in our required documentation and other aspects of the program. Thanks to all of you who have been working with us to make the program as clear

and transparent as possible, while also allowing us to do due diligence in order to ensure the quality of the program and process.

As always, we welcome your input and suggestions about how to further enhance the Program and clarify Program requirements and the application process. Please send any comments and suggestions to certification@biochar-international.org.

IBI Releases 2012 – 2013 Annual Report

IBI is pleased to release its Annual Report highlighting the organization's activities from July 2012 – June 2013. The year has been very busy for the organization and we thank all our members and supporters who have contributed to moving biochar further into the mainstream. To read the full report, please click here (link to:

http://www.biochar-international.org/sites/default/files/IBI_final_2012_2013_annual_report.pdf).

Business and Organization Member Profiles

A listing of all current IBI [Business](#) and [Organization](#) Members can be found on our website. For more information on membership opportunities and benefits, or to join, please see:

<http://www.biochar-international.org/join>. Please note, Business and Organization descriptions are submitted by each individual entity, and are not developed or written by IBI.

New Business Members

Seek Bio-Technology

Seek Bio-Technology (Shanghai) Co., Ltd is the first and only company in the world focusing on bamboo based organic fertilizers and soil conditioners. We research, produce, and sell these fertilizers globally. We have produced humic acid and amino acid for many years. The products we

make and trade are natural, organic fertilizers, soil conditioners and pest control agents in the forms of extruded granules, coarse powders and liquid concentrates. These organic fertilizers, soil conditioners, and pest control agents have been developed over a period of 5 years by professors at Waseda University in Japan. Since 2009, our organic fertilizers and pest control agents have been used commercially by organic fruit and vegetable growers in Japan. Our exports from China now exceed 10,000 MT/year. Our products are generally accepted by government agricultural departments and by farmers. For more information, contact export3@seekfertilizer.com or see the website at: www.seekfertilizer.com.



Select Carbon Biochar Pty Ltd

Select Carbon Biochar Pty Ltd produces large-scale quantities of high-grade biochar in north Queensland, Australia, for sale and distribution throughout the country. Select Carbon Biochar is a subsidiary of Select

Carbon Pty Ltd, a boutique carbon farming company that was established in 2011 by experienced forestry professionals from North Queensland. The company was the first in Australia to have their forestry carbon sink project approved under the Carbon Farming Initiative and offers a number of services in carbon farming, biochar production, and forestry consulting.



Our biochar is produced from sustainably managed forests and has a high fixed carbon content (>75%). We use state-of-the-art technology that was designed here in Australia. Our equipment has undergone an extensive testing process to ensure the technology delivers the highest quality product that our customers demand. We are able to provide our clients with a full suite of native hardwood-based biochar, as well as the highest quality softwood pine biochar.

For further information, please contact info@selectcarbonchar.com or visit www.selectcarbonchar.com.

Renewing Business Member

Earth Systems

Earth Systems is an international environmental consulting firm based in Australia. We develop effective solutions in diverse areas such as environmental management, carbon and bioenergy, and water quality. Our bioenergy team has recently developed a new mobile biochar technology for stick to log sized stranded woody biomass, where transport costs make recovery uneconomical. The CharMaker MPP (Mobile Pyrolysis Plant) is a simple to operate, safe and easily transportable batch pyrolysis furnace that goes to the biomass feedstock source. The technology is based on a shipping container design making transport simple. The CharMaker is designed for standalone operation and includes on board power and ignition generation and controls, and it safely operates itself. The furnace creates excess energy that can be used for high grade heat. Electricity generation with the CharMaker is currently under development. The furnace meets stringent environmental emissions standards and the afterburner ensures minimal smoke emissions. Key specifications per batch: 17m³ internal volume; 5~9 tonne wood; 1~2 tonne biochar; takes stick and log sized wood (no chipping required); 4 hours batch time. At this time, there are three commercial units in operation in Australia. For more information, see: <http://www.esenergy.com.au/services/charmaker> or contact Dr Adrian Morphett adrian.morphett@earthsystems.com.au.



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Biochar Briefs: News Roundup for October

We update the website daily with new articles on biochar. For more information, please see: <http://www.biochar-international.org/newsbriefs>.

Australia

The Australian Melon Association won a grant to reduce on-farm greenhouse gas emissions by investigating the role of soil amendments such as biochar and compost to decrease nitrous oxide emissions in melon, banana and blueberry enterprises. Says Australian Melon Association chairman Mark Daunt, "Australian melon growers produce \$250 million in product annually. Our industry is significant, as is our ability to effect positive change for the environment." (link to: <http://www.news-mail.com.au/news/climate-change-grant/2053738>).

Austria

Farmer John Gradwohl in the "ecoregion Kaindorf" area of Austria started using biochar and compost in his fields growing cabbages, strawberries, carrots and cherry tomatoes. The impetus to begin using these soil amendments was part of an overall regional initiative to be carbon neutral by 2020. As part of the "ecoregion Kaindorf" program founded in 2007, commercial

companies that want to be CO₂-neutral connect with farmers to bury carbon in the soil through voluntary agreements. One such method is the use of biochar. (link to: <http://www.taz.de/Treibhausgase-in-Oesterreich/%21124957/>)

Kenya

The African Christians Organization Network (ACON) in Kenya has recently won a \$10,000 “East Africa Prize” in The Nature Conservancy/ RARE “Solution Search” contest for ACON’s work on developing biochar-producing cookstoves fueled by water hyacinth fuel briquettes. The water hyacinth is an invasive plant harvested from Lake Victoria. (link to: <http://solutionsearch.org/contest/adapting-changing-climate>).

United States

A new report in the journal *Electrochimica Acta* highlights research by a team at the Illinois Sustainable Technology Center at the University of Illinois on the use of biochar to develop cheaper and greener supercapacitors. Researchers in the team have reported that wood-based biochar supercapacitors can produce as much power as current activated-carbon supercapacitors with a lower cost. (link to: <http://phys.org/news/2013-10-team-forest-cheaper-greener-supercapacitors.html>).

Cool Planet Energy Systems announced the launch of its trademarked Cool Terra biochar for commercial agricultural trials. According to Cool Planet, more than a dozen field trials are currently taking place with commercial growers in the U.S. and the company is targeting their biochar to high-value crops, such as tomatoes, berries, bell peppers, avocados and other produce. (link to: <http://biomassmagazine.com/articles/9562/cool-planet-announces-commercial-trials-of-biochar/>).

Scientists from Rice University’s interdisciplinary Biochar Research Group recently published research on how biochar affects chemical signaling used by soil microorganisms that interact with plants. Says co-author Joff Silberg, "Some microbes help plants and others are harmful. That means there's good communication and bad communication going on in the soil at the same time. We think it's likely that some biochars will knock out some conversations and not others, so we want to test that idea and, if possible, come up with a way to tailor biochar for the microbial diversity that's desired." (link to: <http://www.sciencedaily.com/releases/2013/09/130930121839.htm>).

2013 USBI North American Biochar Symposium Highlights Biochar Progress

The recent 2013 USBI North American Biochar Symposium, *Harvesting Hope: The Science and Synergies of Biochar*, was held at the University of MA Amherst campus October 13 – 16. The event was attended by many active practitioners in the biochar world—with over 300 researchers, entrepreneurs, and policy makers from around North America as well as Japan, Korea, France, Cameroon, Wales and Germany. In addition to the numerous plenaries, technical sessions, keynote addresses, networking events, and a Biochar Banquet, participants also had



the opportunity to attend a Farmer's Workshop and a Technology Field Day hosted by the New England Small Farm Institute (NESFI) as well as a Biochar Forestry Tour.

Some of the highlights from the conference included the great increase in understanding of biochar since the first US conference in 2009—presentations at the 2013 event focused on the science of characterization such as specific details of different biochars, new advances on testing methodologies for soil carbon sequestration, soil interactions of biochar with various substances, uses for biochar outside agriculture (such as in remediation), the state of technology on all scales, and the overall progression of a biochar industry. Although many of the presentations were focused on North America, there was a large contingent of Japanese researchers who provided updates on biochar research and programs in Japan.

Presentations from the event will be posted (along with presentation videos) soon at: <http://scholarworks.umass.edu/biochar/2013>.

Photo: USBI Director Gloria Flora delivers the opening plenary of the conference; courtesy of Lisa Merrill Photography.

Opportunities in Biochar

- New job postings can be accessed at: <http://www.biochar-international.org/network/jobs>.
- Looking for potential grant funding? Check out the Terra Viva Grants Directory which develops and manages information about grants for agriculture, energy, environment, and natural resources in the world's developing countries at: <http://www.terravivagrants.org/Home>.
- Submit a presentation abstract to a Biochar Symposium entitled "*Biochar Soil Amendment for Environmental and Agronomic Benefits*" at the 20th World Congress of Soil Science: due November 30th. For more information, please see: <http://www.biochar-international.org/node/4493>.
- Submit a presentation abstract to the 2nd Mediterranean Biochar Symposium: due November 30th. For more information, please see: <http://www.meditbiochar.org/index.html>.
- The Philippine Biochar Association is looking to explore the use of biochar to rehabilitate mined lands. The Philippines has seen an increase in mining activity in the past decades and this has left vast areas of land bare and highly acidic to the point that it can no longer sustain plant life. The Association would like to collaborate with a company or individual with experience and technical expertise on the rehabilitation of mined or deforested areas. If interested, please contact James Burke Ong at philippinebiocharassociation@gmail.com.

Upcoming Calendar Events

- November 15: The Illinois Biochar Group Fall Meeting. Location: Peoria, IL, US. For more information: www.biochar.illinois.edu.
- November 17 – 20: SETAC North America 34th Annual Meeting with "Environmental implications of biochar" symposium. Location: Tennessee, United States. For more information: <http://www.biochar-international.org/node/4094>.
- January 16 - 17, 2014: 2nd Mediterranean Biochar Symposium. Location: Palermo, Italy. For more information: <http://www.meditbiochar.org/the-symposium.html>.

See the [IBI Calendar page](#) for more events. To add an event to the calendar, send the information to info@biochar-international.org.

Regional Biochar Group Updates

To read more on the 55 regional and national biochar groups, please see IBI's website (link to: <http://www.biochar-international.org/network/communities>). This month includes updates from the Illinois Biochar Group (United States).

The Illinois Biochar Group (United States)

The Illinois Biochar Group fall meeting will be held on Nov. 15, 2013, at the National Center for Agricultural Utilization Research (NCAUR), 1815 University Ave., Peoria, IL. The meeting will begin at 1:15 p.m. Prior to that, from 11:15 a.m. – noon there will be lunch available and networking opportunities. From noon – 1 pm there will be tours of the Center and also additional tours at 3:45 p.m., after the meeting. Please contact Steve Peterson, Research Chemist at NCAUR, with any questions (Steve.Peterson@ars.usda.gov or 309-681-6325). The agenda for the meeting will be posted shortly on the IBG website at www.biochar.illinois.edu. The meeting is open to anyone interested in biochar production and applications.

Recently Published Biochar Research

IBI tracks all published research on biochar and includes it in our [online bibliography](#). The following articles were added in the last month. Please visit the website bibliography for more information on any of these articles. Due to copyright infringement laws, we cannot provide full copies of articles unless we have permission from the publisher. If you have published work that is not included, [please email us](#).

Bridges, Rhonda P.; A.H.J (Tony) Paterson; and Jim R. Jones (2013). Design and Characterisation of an 'Open Source' Pyrolyser for Biochar Production; <http://www.conference.net.au/chemeca2013/papers/27038.pdf>.

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Diez, M. Cristina; Levio, Marcela; Briceño, Gabriela; Rubilar, Olga; Tortella, Gonzalo; Gallardo, Felipe (2013). Biochar as a Partial Replacement of Peat in Pesticide-Degrading Biomixtures Formulated with Different Soil Types. *Journal of Biobased Materials and Bioenergy*, Volume 7, Number 6, pp. 741-747.

Elleuch, Amal; Ahlem Boussetta; Jinshuai Yu; Kamel Halouani; Yongdan Li (2013). Experimental investigation of direct carbon fuel cell fueled by almond shell biochar: Part I. Physico-chemical characterization of the biochar fuel and cell performance examination. *International Journal of Hydrogen Energy*.

Fang, Y.; B. Singh; B. P. Singh; E. Krull (2013). Biochar carbon stability in four contrasting soils. *European Journal of Soil Science*.

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Gustafsson, Mattias (2013). Pyrolysis for heat production - Biochar the primary byproduct. Thesis; University of Gävle, Faculty of Engineering and Sustainable Development;
<http://www.diva-portal.org/smash/record.jsf?pid=diva2:655188>.

Harter J, Krause HM, Schuettler S, Ruser R, Fromme M, Scholten T, Kappler A, Behrens S (2013). Linking N₂O emissions from biochar-amended soil to the structure and function of the N-cycling microbial community. *The ISME Journal*.

Houben, David; Philippe Sonnet; Jean-Thomas Cornelis (2013). Biochar from Miscanthus: a potential silicon fertilizer. *Plant and Soil*.

Hu, Liao; Lixiang Cao; Renduo Zhang (2013). Bacterial and fungal taxon changes in soil microbial community composition induced by short-term biochar amendment in red oxidized loam soil. *World Journal of Microbiology and Biotechnology*.

Hua, Z.; Zhaoqing Lu; Hongrui Ma; Susu Jin (2013). Effect of biochar on carbon dioxide release, organic carbon accumulation, and aggregation of soil. *Environmental Progress & Sustainable Energy*.

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Jiang, Junhua; Lei Zhang; Xinying Wang; Nancy Holm; Kishore Rajagopalan; Fanglin Chen; Shuguo Ma (2013). Highly ordered macroporous woody biochar with ultra-high carbon content as supercapacitor electrodes. *Electrochimica Acta*.

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Park, Junyeong; Ivan Hung; Zhehong Gan; Orlando J. Rojas; Kwang Hun Lim; Sunkyu Park (2013). Activated carbon from biochar: Influence of its physicochemical properties on the sorption characteristics of phenanthrene. *Bioresource Technology*.

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Zhang, Zhezi; Setyawati Yani; Mingming Zhu; Jianbo Li; and Dongke Zhang (2013). Effect of Temperature and Heating Rate in Pyrolysis on the Yield, Structure and Oxidation Reactivity of Pine Sawdust Biochar; <http://www.conference.net.au/chemeca2013/papers/30430.pdf>.