Scaling the Biochar Industry

2013 North American Biochar Symposium
Scale, Sales and Marketing Track
“Scaling the Biochar Industry” Panel

Energy, Biochar, Agriculture Creating Currencies for Local Economies

Presenter

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Berkshire Harmony

Does Concrete Float

- Anyone hear of Henry J. Kaiser
- Coined the term
- Make it faster, Cheaper, and Better
- Finished the Hoover Dam One Year Ahead of Schedule
- Floated the Battleships of the Liberty Fleet in Seven Days –Concrete Vessels
- Innovators Think Differently- Entrepreneurial Thinking guided by Calculated Risk

University of Massachusetts

- Platinum Sponsors for this Symposium
- Celebrating 150 years of the Stockbridge School of Agriculture
- Leadership in innovative education
  - Common read for entering students
  - No Impact Man by Colin Beavens
  - Facilitated faculty and student discussions prompted by the book
  - Sustainability woven into the fabric of 30% of the courses offered by the University

Perspective Change

- If you carry the faculty/student discussion out to a logical conclusion, it will lead you to believe that the most highly respected business in town will be the one operating with the smallest carbon footprint resulting in it being the most popular, most highly patronized group to do business with.
- This company could be delivering two of the most needed commodities for the community: electric energy and food, the energy for

Presentation's Objective

- What I am presenting today is a blueprint for just such a sustainable, resilient business model combining the science and synergies of Energy, Biochar and Agriculture to produce the most efficient, cost effective, eco friendly, carbon negative growing and delivery systems for farm to family nutrient rich food and energy.

Challenges Ahead

- 21st Century Challenges we all must deal with: Energy, Agriculture, Water, Environment, and Community
- Deforestation: about 1/3 of the world's fertile soil is gone
- Land Use –Commercial, Industrial, Residential, and eroision
- Population Explosion
- Average age of America's Farmers
  - USDA

Opportunities Ahead

- Education:
  - Awareness of the promise of Biochar, presently we are the choir singing to the choir – the best kept energy source secret on the planet, relatively few people know what Biochar and the process for creating it is
  - Training a new generation of farmers, foresters, and backyard growers -
    - Fast Company Magazine – best green jobs for the decade, Farmers and foresters head the list, correctly so.
    - An abundance of opportunity for highly trained motivated employees and career seekers

New Generation fo Farmers, Foresters, and Backyard Growers

- USDA calls for 10 million new farmers over the next decade
- Michael Pollan suggests the way food will be grown – highly intensive, organic, locallize, four seasons of the year anywhere.
- Controlled environment agriculture

Who is going to train, where are they going to be taught, what are they going to learn

- Experiential Learning hands in the soil supplemented with digitially communicated lesson plan bricks and mortar are not essential component.

Research and Development:

- Research and Development is the backbone for the accelerated growth and scaling off the Biochar industry
  - Research into the promise of Biochar to scientifically prove, support, and document the promise of Biochar beyond where we are today
  - All Biochar is not created equal. We need the answers for which variation on the theme (characterization) best serves its desired application and how they are produced.
  - Advance growing techniques:
    - Millions of mouths to feed
    - Intensive four season growing

Research into Refining CHP and Biochar Production Systems

- Design, manufacture, assembly, testing, tweaking, installation, operating, and maintaining CHP systems in the manner best suited to their desired deployment.
- Create common shared facilities and trained work teams to execute the above processes
- Accelerate innovation and systems development through shared facilities for the above listed processes.
- Provide a source for one off projected with the capability to evolve into mass production if necessary

Plan for Shorter Life-Cycle for products

- What the average life cycle of an I-phone, I-Pod, I-Pad, less than 12 months
- Technical innovation has a much shorter life-cycle than you can begin to imagine
- Adam Retort evolved from a thrid world technology to a 21st century over the past six years
- Phoenix Energy emergaged over a few years with far more advanced systems-

The challenge is in financing these local systems locally

What is a CSA?

- Community Supported Agriculture- an agreement between an individual, family or community to support a local farmer in accepting the risk of growing food for their members to the extent of the cost for membership to receive an allocation or share of produce weekly across the growing season's membership period. Payment is made in advance providing the farmer with the money they need when they need it for planning, to purchase seeds and supplies

The CSA financial model works

- The first CSA in America was launched in the Berkshires of Western Massachusetts in the mid-eighties and has spread list a prairie fire ever since.
- Recently the USDA reported that in their survey of farmers over 12,000 farmers they had engaged in one form or another of CSA transaction during the past year
- The CSA DNA is in the Community Supported Energy model.

Relatively Recent Financial Model

- The first CSA in America was launched in the Berkshires of Western Massachusetts in the mid-eighties and has spread list a prairie fire ever since.
- Founded by Jan VanderTuin selling off about 15 shares of production in his human powered cider press in an apple orchard on the land of a community land trust in Great Barrington.
- The next year he and Robin Van Enn began selling off CSA produce shares from Indian

The CSA Financial Model

- Community Supported Agriculture(CSA) is a powerful tool for sustainable growth and survival.
- The CSA model is credited with the growth and survival of small farms across america over the past 25 years.
- There are more small farms in Massachusetts than at anytime in the history of the commonwealth.
- CHP Systems producing Biochar can use a

Focus on Producing the high value nutrient rich produce

- Join a movement that is bigger than Biochar to bring the product into the community – produce high value food – Join the locavore movement- consuming food grown within 100 miles of where it is grown
- The formula for meeting the community's needs is relatively simple – simply follow the road map they have given to you.

What will the community support?

- Eight criteria foodies are seeking
- Quality – this is not a vague concept – Quality is quantifiable – Brix Scale
- Local
- Diverse
- Convenient access
- Safe
- Secure

Local Food Distribution

- CSA's
  - Home delivery eco friendly, convenient
- Farmer's Markets
- Farm Stands
- Direct sales improves profitability for farmers and better for the environment

Energy

- CHP systems producing Biochar enables systems for lower cost electricity for the community
- Municipalities can be key players in the process, they can commit to PPA's Power Purchase Commitments
- Three elements need to come together to make these systems work
- Community- Buisiness, resources, Knowledge

Embrace the Synergies and Science of Biochar for a Hopeful Future

- Create currency systems for enhancing the health and enriching the wealth of communities
- Accelerate to time to market for bringing systems and permitting on line as swiftly as possible.
- Plant more trees in the process better forest management systems
- Leave a better world than we were given responsibility for

The End

- Thank You and God Bless Us All