



SynTech PCo, LLC

Resourceful. Renewable. Responsible

Agricultural Biomass Utilization

Challenges & Opportunities

Sustainable Power, Heat, RNG, SAF, GH2, Biochar & Graphene

October 5-6

Winters, CA

Overview



“De-Carbonizing the planet by generating carbon-negative clean energy, sustainable transportation fuels, graphene and valuable carbon capital opportunities while eliminating harmful methane release from environmentally devastating waste is one of the [single largest growth opportunities in human history](#). We accomplish this while solving many of mankind’s biggest energy, environmental, economic and social problems. **SynTech has the team and the technology needed to solve these problems and lead the way in decarbonizing the planet, reversing global warming and combatting climate change.**” –Wayne McFarland, CEO



SynTech’s **BioMax**[®] advanced thermal conversion technology delivers **CARBON NEGATIVE CLEAN ENERGY** from biomass and other problematic wastes



Multiple revenue streams from Power, Heat, Fuel, Biochar & Graphene, Project Development, Manufacturing, Waste Remediation and Carbon Capital Opportunities



BioMax[®]—History and Development

Over 126,000 hours of operation at commercial scale *(equivalent to 14+ years)*

Organic Walnut Producer, CA



Then—1st Commercial Unit

2008

BioMax[®] 50
Continuous Operation

**50kW
Gross**



Now—Gen 1 and Gen 2 Array

Dec 2012

BioMax[®] Gen 1
Runs 24x7

**125kW
Gross**

Jan 2015

BioMax[®] Gen 2
Runs 24x7

**155kW
Gross**

Mushroom Farm, CA



3 Gen 1 Array

Jan 2015

(3) BioMax[®]
Gen 1 Units

**375kW
Gross**

Pecan Producer, TX



4 Gen 2 Array

September 2017

(4) BioMax[®]
Gen 2 Units

**620kW
Gross**

<https://www.youtube.com/watch?v=X2iwiHY6Q0k>

For additional information on Technology, please see Appendix A “Technology Details”

BioMax[®]—Feedstock Flexibility



Abundant localized feedstock supplies

Ready to Use

Many biomass feedstocks require no pre-processing beyond simple sorting, including:

Nut Shells



Wood Chips



Fruit Pits



Coconut Shells



Jojoba Pulp



Olive Pits



Processed Biomass

Additional biomass feedstock is abundantly available with sorting, drying and densification, including:

Bamboo



Wood Pellets



Green Waste



Grape Vine



Sugar Cane



Slash/Trimmings



Future Feedstocks

Global demand for small scale remediation of site-produced, problematic waste streams provide growing markets for new products, including:

Institutional Solid Waste from:

- Hospitals & Medical Centers
- College & University Campuses
- Resorts & Hospitality Centers
- Defense and Correction Facilities
- Sport Stadiums & big box stores
- Big Box Retailer & Grocers



Processed Municipal Solid Waste

- Curbside MSW
- Can be blended to remediate Bio-solids
- Processed into Refuse Derived Fuel Pellets
- Remediate two horrific waste problems



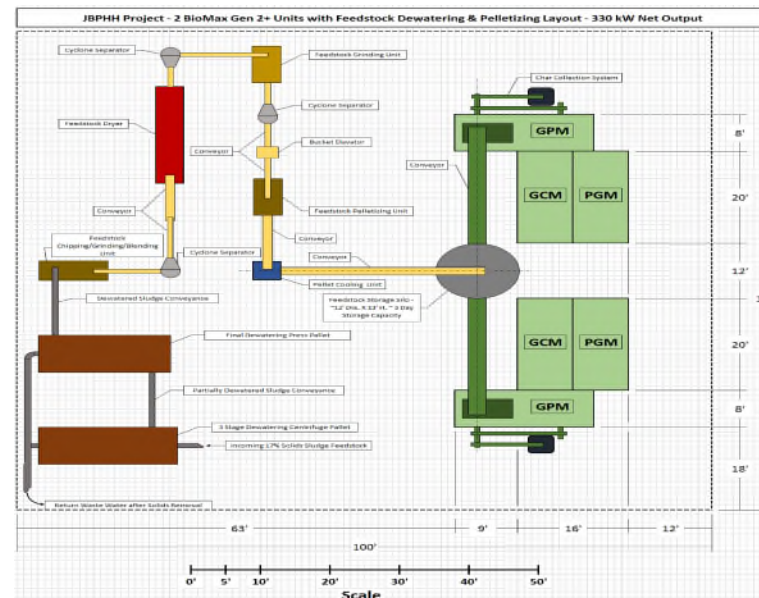
BioMax[®]—Scalability without technology or scale-up risk

- BioMax[®]—can be scaled from 155kWe to 25MWe+**
- with absolutely no new technology risk and**
- with absolutely no scale-up risk**

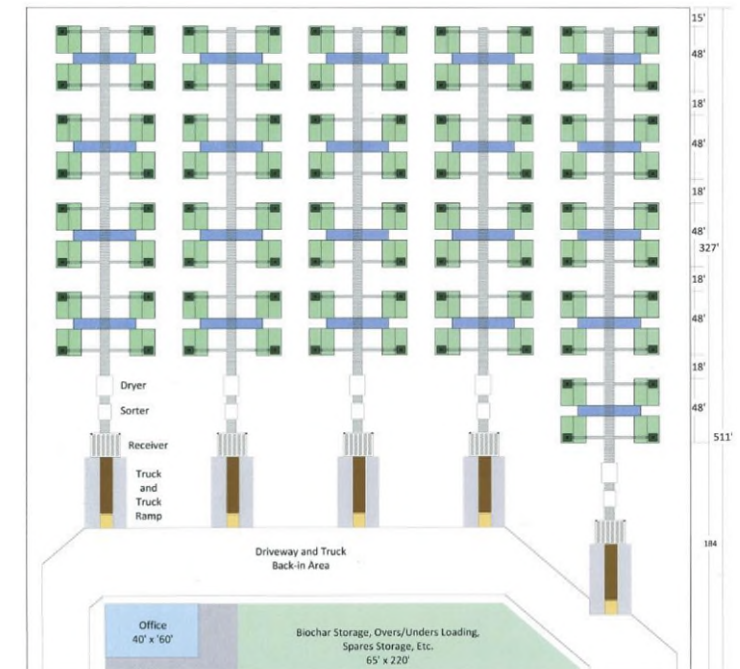
A single BioMax[®] Gen2
(165kWe gross output)



A twin BioMax[®] Gen2 array
(330kWe gross output)



A BioMax[®] Gen3 Array
(15MWe+ gross output)



For additional information on Technology, please see Appendix A “Technology Details”

BioMax[®] Biochar—High Quality Byproduct Enhances Project Economics



- Biochar is the **only byproduct** created by the BioMax[®] process.
- Biochar is an excellent **carbon “sequestration”** media
- SynTech’s Biochar has been **Certified Organic by USDA and IBI**
- Highest quality biochar meeting **“activated carbon standards”**
- Selling price of \$200 - \$5,000 / ton **creates significant project returns**

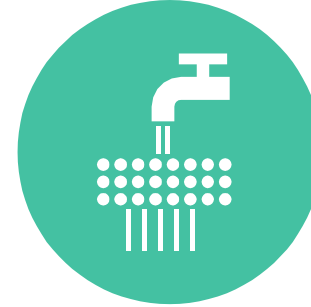
Biochar has many market applications including



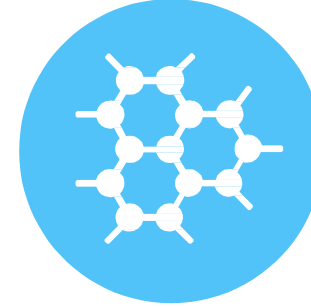
Organic fertilizer
and soil
amendment



Enhancement for
anaerobic digesters
and composting
processes



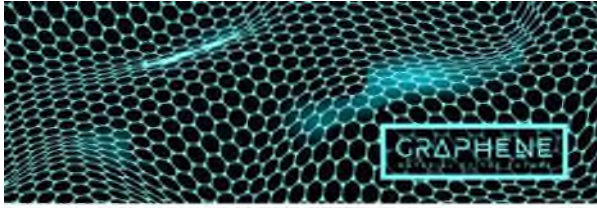
Activated carbon for
air/water filtration,
desalination, fracking
fluid clean-up



Raw material for
refined production of
carbon black, graphite
and graphene

Each 75 pounds of feedstock yields +/- 1 pound of market ready graphene

BioMax[®] Graphene—leading the way forward in material sciences

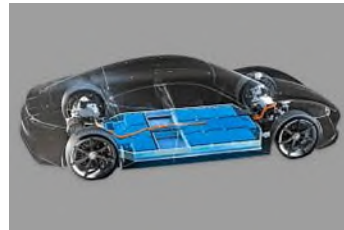


Graphene is pure carbon and highly conductive with exceptional thermal properties
Extraordinarily light (*A sheet of graphene of one square meter of weighs only 0.77 milligrams*)
200 times stronger than steel with a density like to that of carbon fiber
One of the most sought-after elements on the planet.

Graphene—has a extremely high market value per ton
—is produced from high-quality SynTech Biochar[®]
—has many market applications including



Solar & Photo
Voltaic
Composites



Electric Vehicle &
other advanced
energy storage



Aerospace & Defense
composites &
applications



BioMed & Medical
technologies &
appliances

BioMax[®]—Environmental Benefits/Annual Carbon Displacement analysis



	Single BioMax Gen2 Unit	BioMax Gen3 System (4 reactors and 1 Dresser-Rand engine)	3MW BioMax Gen3 System
Biochar Carbon Sequestration	57.8 ~ 232.3 (typically 115) short tonnes CO2 per year	231.2 ~ 928.8 (typically 460) short tonnes CO2 per year	1,192 ~ 4,791 (typically 2,372) short tonnes CO2 per year
Fossil Fuel Displacement	1,121 tonnes CO2 from coal <u>or</u>	4,484 tonnes CO2 from coal <u>or</u>	23,120 tonnes CO2 from coal <u>or</u>
	660 tonnes CO2 from natural gas	2,640 tonnes CO2 from natural gas	2,640 tonnes CO2 from natural gas
Methane and CO2 Emission Avoidance	7,255 tons CO2 E/year	29,020 tons CO2 E/year	149,600 tons CO2 E/year
Total Carbon Negative Impact	Up to 8,608 tonnes CO2 E/year	Up to 34,432 tonnes CO2 E/year	Up to 177,500 tonnes CO2 E/year

Market Reach & Industry Opportunities



Nut Processors



Forestry



Biomass Producers



Agriculture



Landfill Operators



Wastewater Treatment
Facilities



Digester Operators



Animal Bio-solids
Producers



Colleges & Universities



Hospitals & Medical Centers



Defense Installations



Correctional Facilities



Resorts, Hospitality & Sports Stadiums



Shipboard Applications



Distributed Infrastructure



Micro, Smart & Off-Grid Applications



Energy Traders



Electric Vehicle Operators



SAF Consumers



Public Utilities



Municipalities



Impact Investors



Foundations & Family Offices

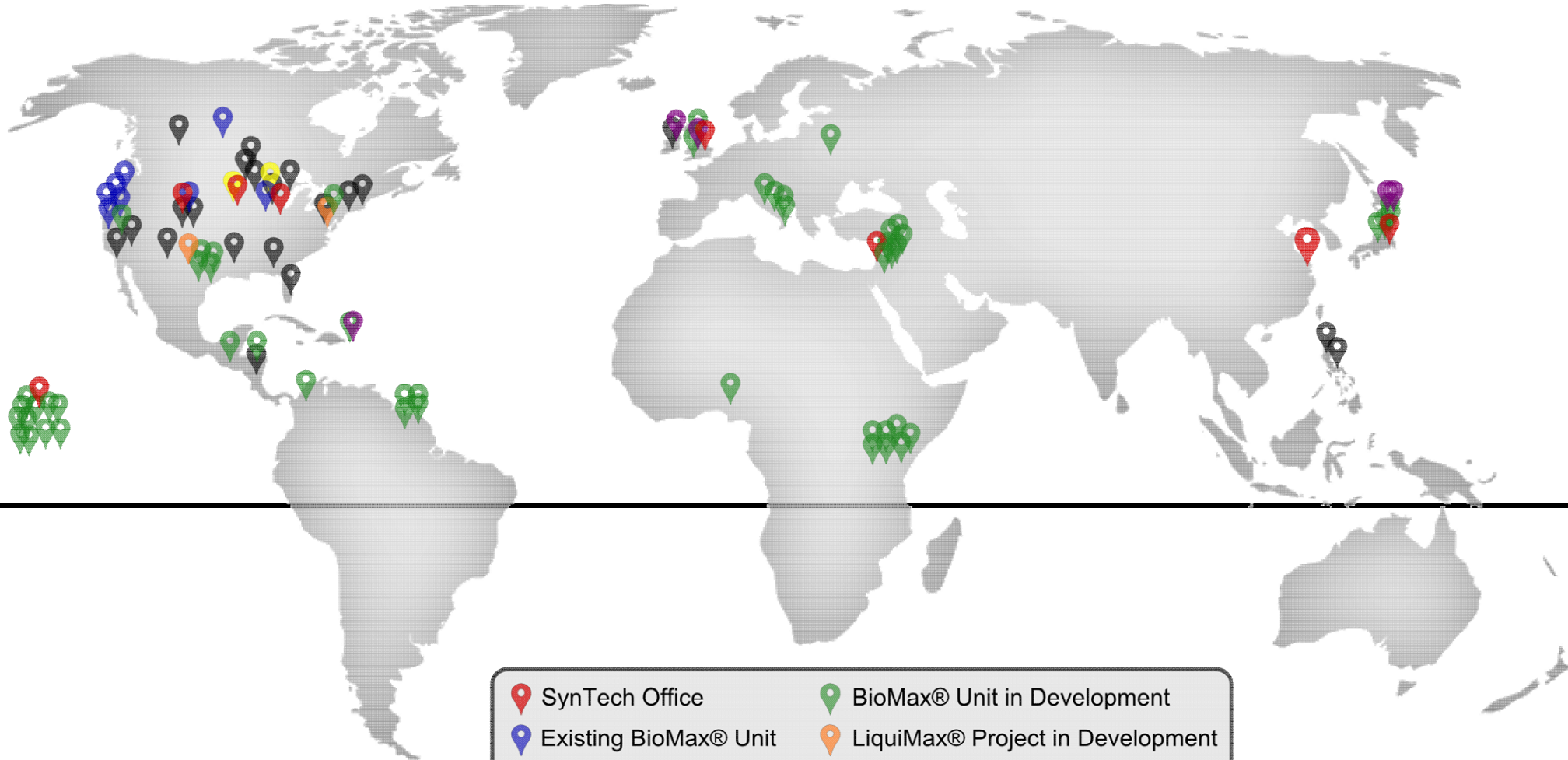


Villages and Communities

Historic & Planned Global Reach



SYNTECH
BIOENERGY LLC
Resourceful. Renewable. Responsible.



Legend:

- Red pin: SynTech Office
- Blue pin: Existing BioMax® Unit
- Yellow pin: Existing FluiMax® Project
- Black pin: Pre-commercial BioMax® Unit
- Green pin: BioMax® Unit in Development
- Orange pin: LiquiMax® Project in Development
- Purple pin: FluiMax® Project in Development



Thank You!

For Further Information, Please Contact:

Wayne McFarland, CEO

SynTech PCo, LLC

wmcf@syntechpco.com

Mobile: 815-302-3002

www.syntechbioenergy.com