

# USBI presentation Bagasse Biochar Technology



# American BioCarbon

- We produce and sell biochar carbonized from sugar cane waste fiber (bagasse) at our facility in Louisiana, USA
- American BioCarbon creates a unique biochar from the waste biomass that what was previously either burned or left to decompose
- American BioCarbon is currently constructing the largest industrial bagasse biochar plants in the USA
- Our unique self powering, fully auto electric and auto thermal carbonization process makes beneficial use of Bagasse by producing highest quality biochar, green electricity and green industrial heat
- Our process is PURO certified and we produce highest quality CORCs



# Sugar Cane Waste (Bagasse)



What is bagasse?

What has traditionally happened with bagasse?

Anyone see a problem here?

**American BioCarbon has the solution.**

# Growth Opportunity

- The USA grows 42.5 million tons of sugar cane, producing a waste stream of over 10 million tons of bagasse annually
- Over 1 million acres of land are dedicated to sugar cane production in the USA
- Future capacity increasing biochar production and more carbon credits are coming to the market
- American BioCarbon sees a clear path to expansion

Abundant raw material +  
High market demand =  
huge opportunity to grow



# American BioCarbon Solution



## American BioCarbon Products

- ABC Bagasse Biochar
- Renewable Industrial Heat & Electricity
- RenCO<sub>2</sub> Removal Credits (CORCs)
- Sustainable bagasse pellet products



## Markets

- CO<sub>2</sub> Removal Credits Market (Puro.earth CORCs),
- Carbon removal technology
- Renewable Heat & Electricity
- Agriculture & farming
- Lawn, garden & commercial landscape



## Process Technology

- Patented Biomass Separation Unit separates and reclaims leafy material from harvested cane before entering mill
- Unique self powering fully auto electric and auto thermal Biochar carbonization process produces highest quality biochar, renewables electricity & industrial heat



## Biochar Production

- Our unique carbonization technology produces highest quality Biochar with an ultralow H/C ratio and the highest water holding capacity



# ABC Louisiana Production Facility



## Cora Texas Sugar Mill with ABC Biomass Separation Unit



### Commercial-Scale Plant in Construction

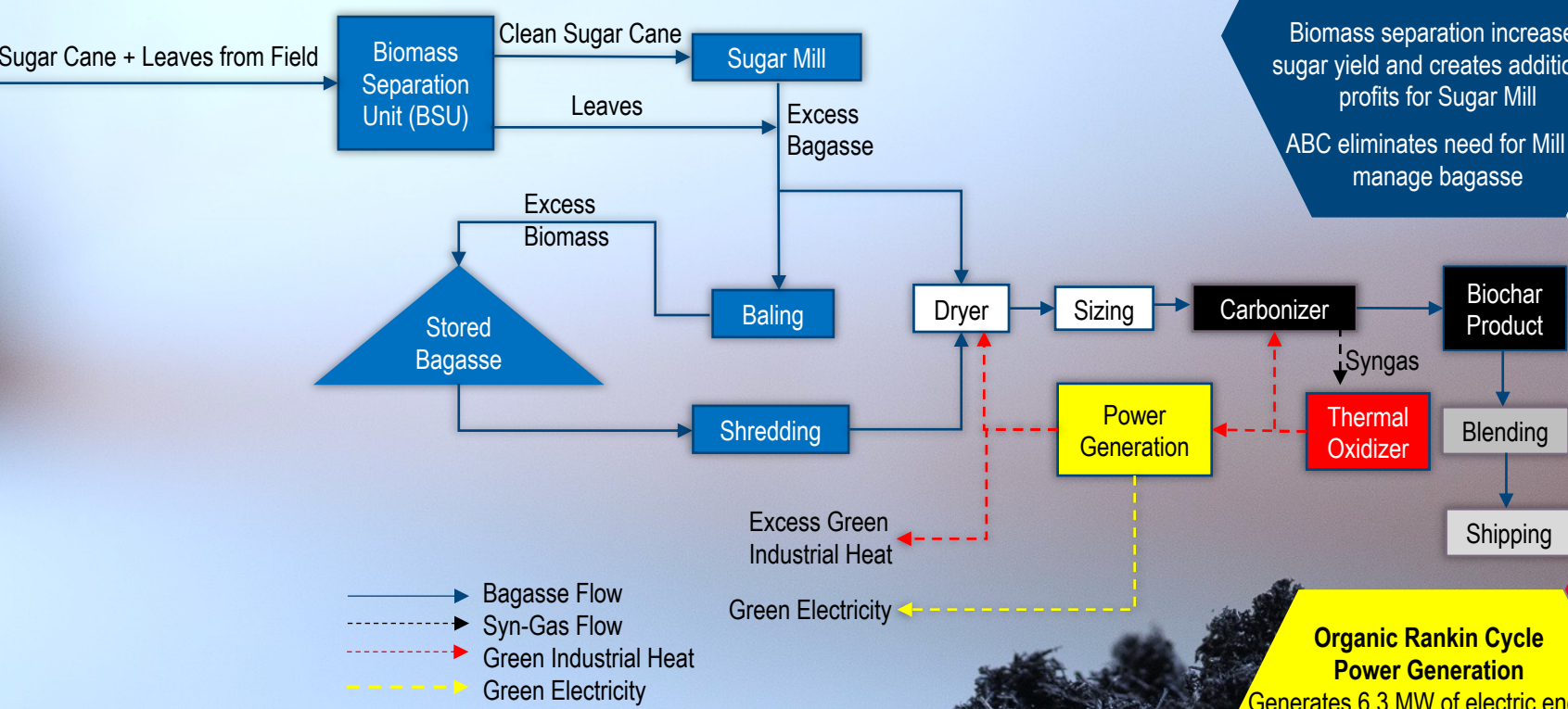
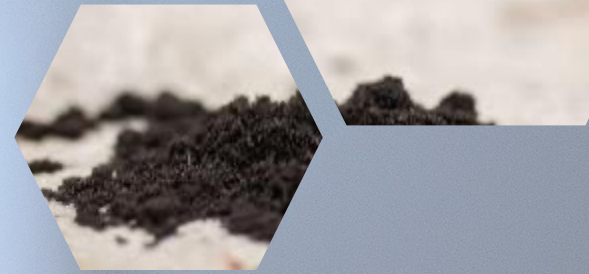
- Production Capacity:
- 107,000 MT/year Biochar
  - 150,000 MT/year Bagasse pellets

## ABC Industrial Size Demonstration Facility

- Production Capacity:
- 3000MT/year Biochar
  - 15,000 MT/year Bagasse pellets



# ABC Biochar Process Technology



**BSU & Bagasse Feedstocks**

Integration into Sugar Mill supplies feedstock directly to ABC process

Biomass separation increases sugar yield and creates additional profits for Sugar Mill

ABC eliminates need for Mill to manage bagasse

**Dryer and Sizing**

Utilizing Belt dryers to use low grade industrial heat for drying

Thermal energy for drying supplied by combustion of syngas

Milling & screening create uniform granulation for biochar production

**Carbonization**

Continuous Carbonization process produces biochar + Syngas

100% of Syngas is combusted provides heat for Carbonization, Drying, Power generation and excess green industrial heat

**Organic Rankin Cycle Power Generation**

Generates 6.3 MW of electric energy

Provides 100% of electricity (2.2 MW) required for the carbonization process

Excess electricity (4.1MW) goes to Pelletizing, Sugar mill + Power grid

**Blending**

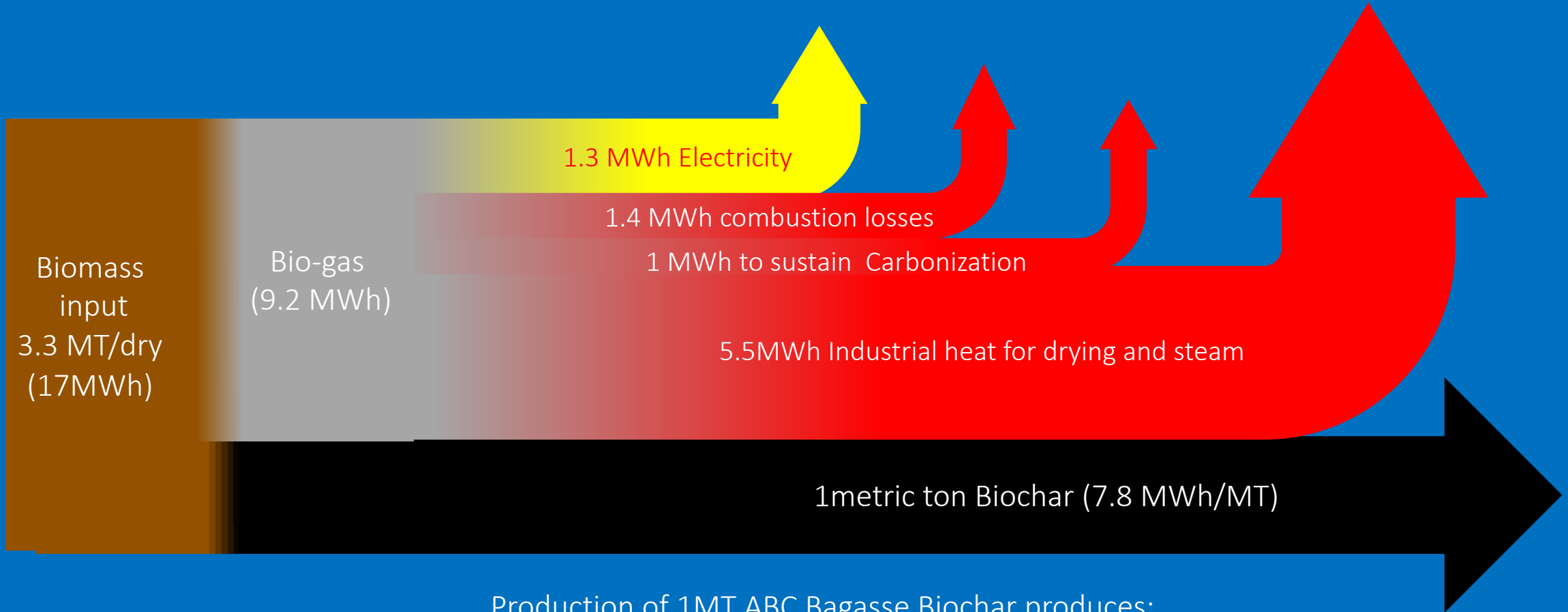
Biochar is mixed with Compost and Bagasse Boiler ash supplied by the sugar mill

Biochar blend is bagged or shipped in bulk to customers



# Carbonization of Sugarcane Bagasse

- 1 MT/dry Bagasse HHV: 5.38 MWh
- 1MT/dry Bagasse Biochar HHV: 7.8 MWh



Production of 1MT ABC Bagasse Biochar produces:  
1.3 MWh of electricity + 5.5MWh of excess industrial heat  
Biochar Quality: Carbon > 70%, H/C < 0.4 , Surface area >300m<sup>2</sup>/g



# American BioCarbon Product

## Bagasse Biochar

American BioCarbon manufactures highest quality biochar. The ABC's process and feedstock result in a technical-spec biochar more closely akin to activated charcoal than traditional wood-based biochar.

Annual Volume: >100,000 TPY

### Product Specifications:

- Moisture: > 30%
- Carbon (MAF): > 70%
- H/C: < 0.4
- Surface Area: > 300 m<sup>2</sup>/g
- Water holding capacity: > 3.5 : 1
- Form factor: < 10 Mesh

### Product Uses:

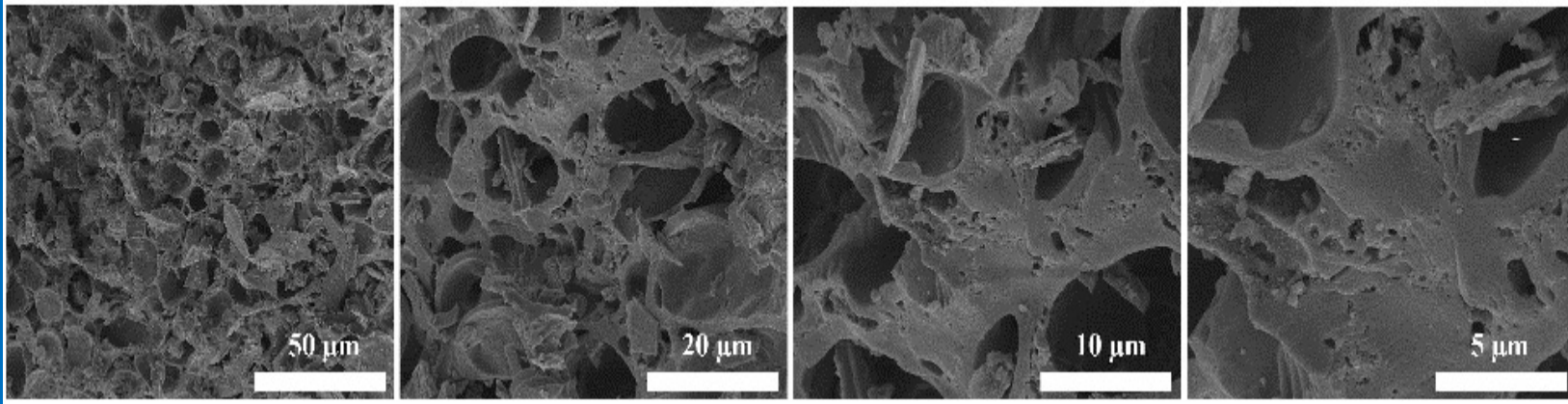
- Agricultural soil amendment
- Carbon sequestration



# SEM Images of Bagasse Biochar vs. Wood Biochar

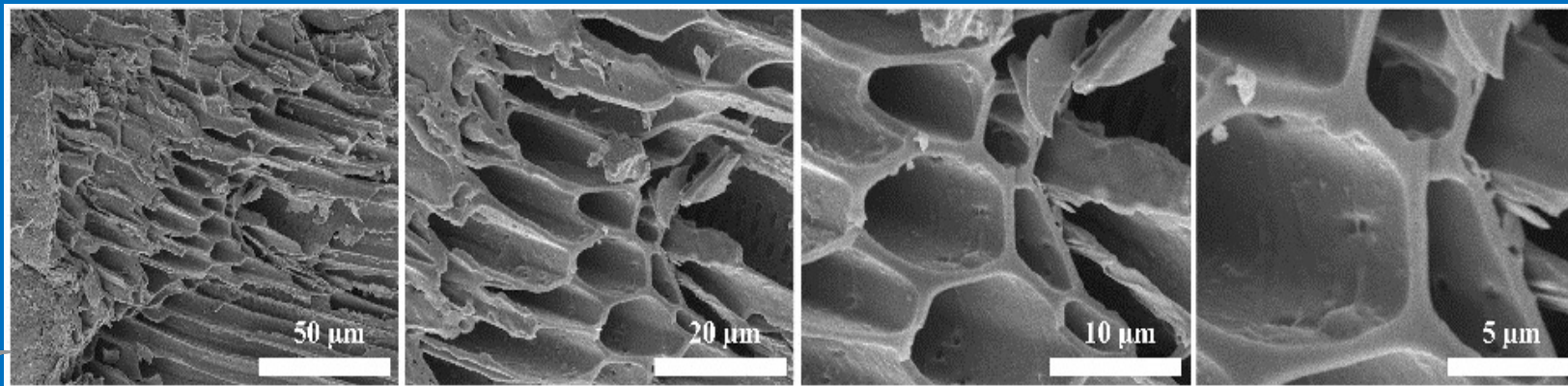


## SEM Biochar Carbonized from wood



Water holding Capacity of < 2.5:1

## SEM Biochar Carbonized from Bagasse



Superior  
Water holding Capacity of > 3.5 :1

# ABC Bagasse Biochar Process + Quality



- Produced from an annually renewable agricultural waste material (no front-end transportation)
- ABC technology produces biochar via a fully auto electric and auto thermal process
- The process produces 60% excess electrical energy & 35% excess Industrial heat
- Required off-taker for the excess renewable energy (additional revenue)
- The unique water holding capacity of ABC Bagasse Biochar ( $> 3.5 :1$ ) produces superior soil conditioning blends (Provides largest available low-income housing for beneficial Microbes)
- The ABC Biochar carbonization and catalytic oxidation process produces biochar ultra low H/C  $< 0.2$  ratio
- No front-end transportation, Auto electric + thermal, high carbon, ultra low H/C ratio, equals high CORCs

## Questions??

# Thank You

For more information:

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