Bioforcetech intro

Bioforcetech is committed to protecting nature and human health by providing technologies that deliver a zero waste future, transforming organic waste into sustainable products.

Affordable
waste management

Self sustained and
green process

Protect human health
from harmful disposal
practices

Valuable products
from waste

Background

The **Presezzi Extrusion Group** has decades of experience in multiple mechanical and industrial sectors.

PRESEZZI GROUP

Inspike

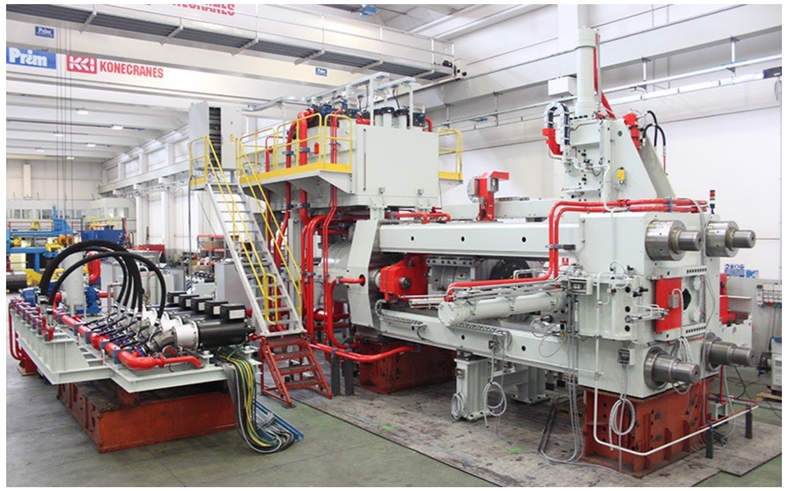
PA PROFILE AUTOMATION

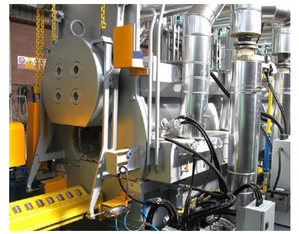
TEC HYDRO

COIM Gas-fired Billet Heaters - Annealing Furnaces

TCC

RC REITER & CRIPPA





BIOFORCETECH Corporation

Founded in 2013, Bioforcetech takes advantages of a long history of success.

Our Story

Summer 2012 - Introductory Meeting

Summer 2013 - First Pilot

Summer 2014 - Full scale Pilot

Our Vision

TODAY

SEWAGE SLUDGE

ORGANIC WASTE

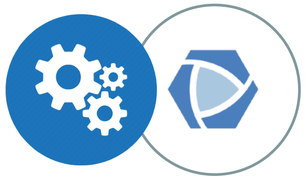
LANDFILLS, INCINIRATION
OR OPEN FIRE

Today, over 100M tons of organic waste are sent to landfill, burned, or land applied creating environmental and health problems

BIOFORCETECH

SEWAGE SLUDGE

ORGANIC WASTE



AGRICULTURE

COMPOSITES

CONSTRUCTION

FILTRATION

Bioforcetech locally transforms organic waste into renewable energy and valuable products

THE SOLUTION

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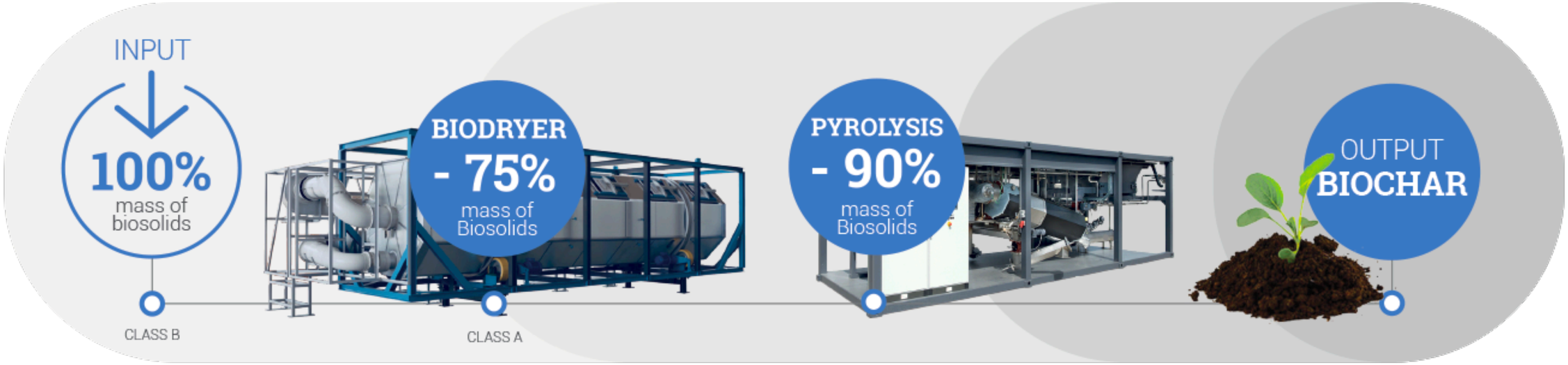

TECHNOLOGY

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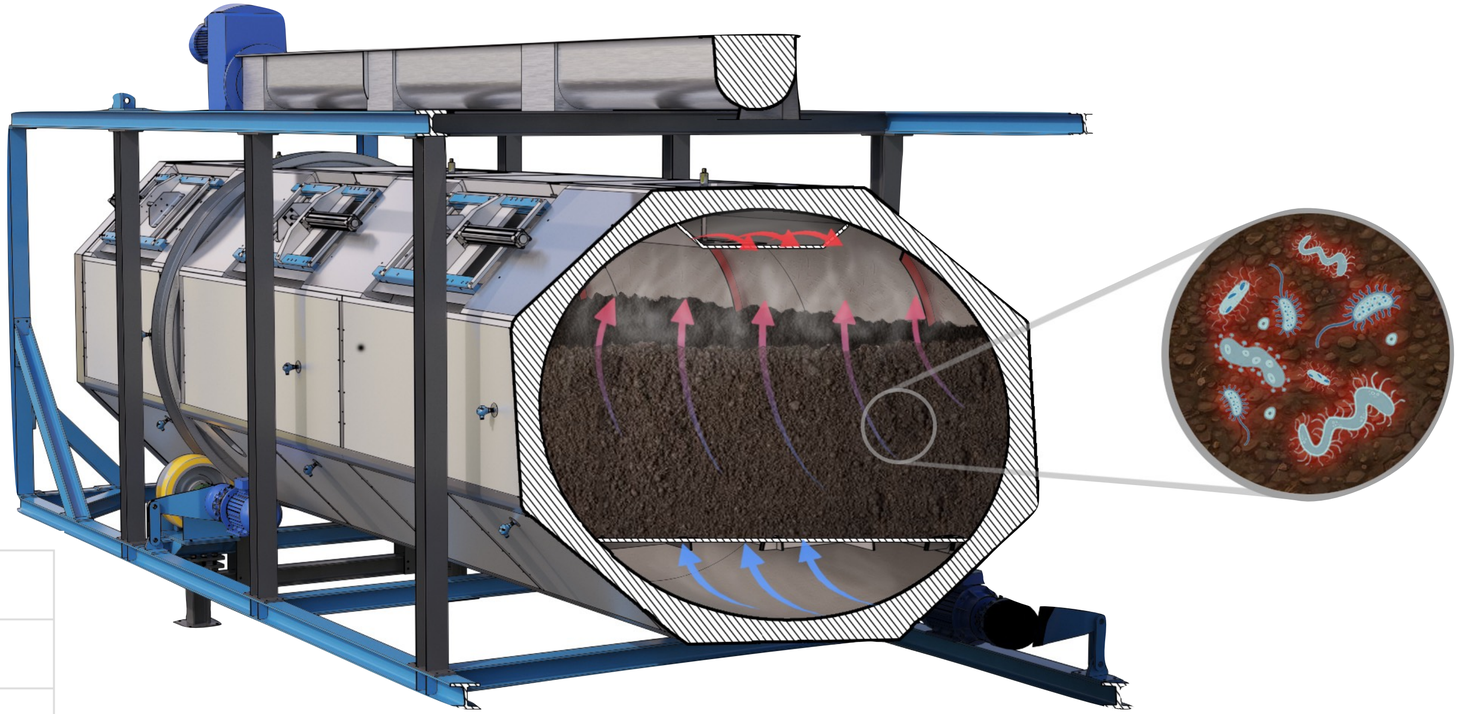
Innovative and efficient drying machine, designed to remove moisture from organic materials with 70% less energy.

WHAT IS BIODRYING

Biodrying is the process by which biodegradable waste is rapidly heated through initial stages of composting to remove moisture from a waste stream and hence reduce its overall weight. In this process, the drying rates are augmented by biological heat in addition to forced aeration.



Capacity	Up to 9 tons
Gross weight	7 tons
feedstock moisture	82% max
Max temeprature	190F
Process time	40 to 60 hours

BioDryer

BIOFORCETECH
Corporation

TECHNOLOGY

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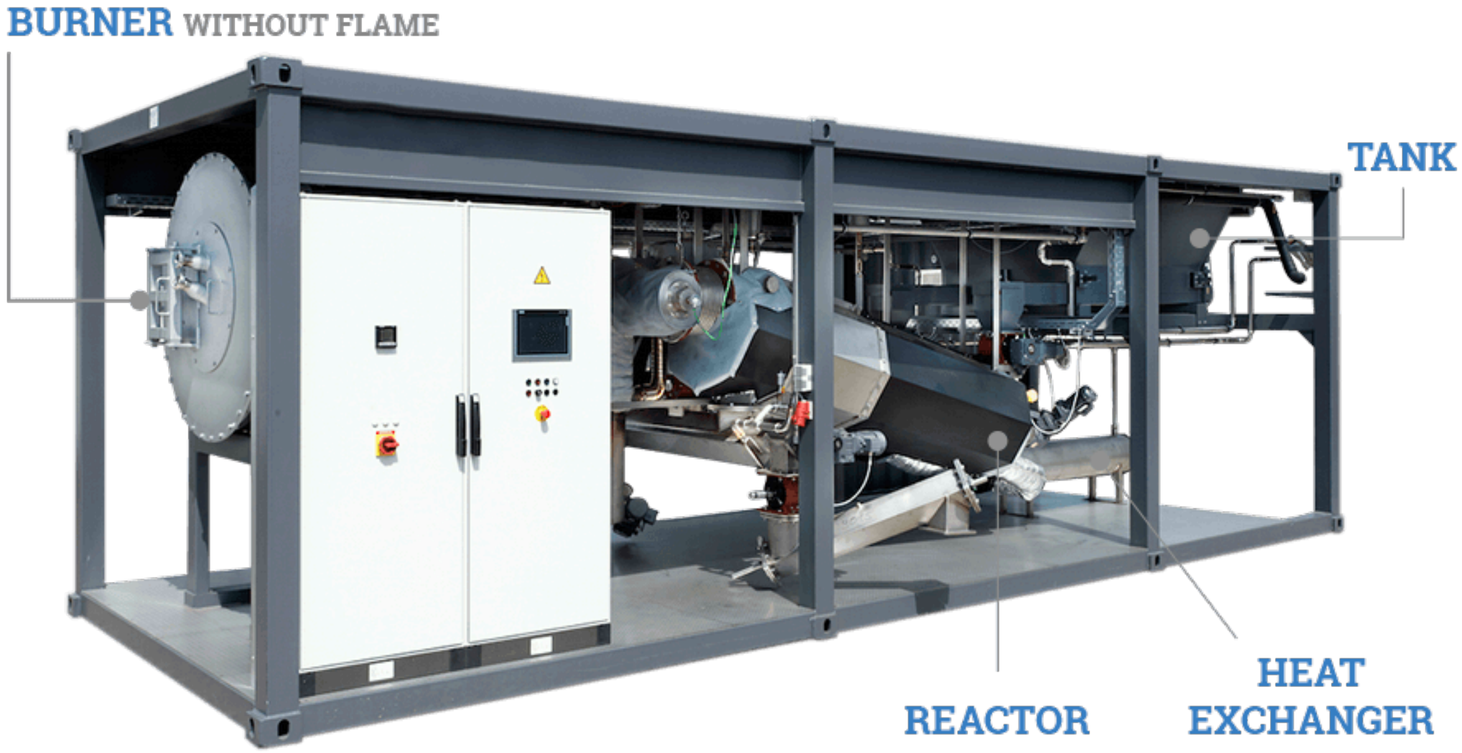
After 4 years of permitting process:

Got EPA approval for a NON-Incineration thermal process

Got a permit to operate in the toughest Air district in the USA

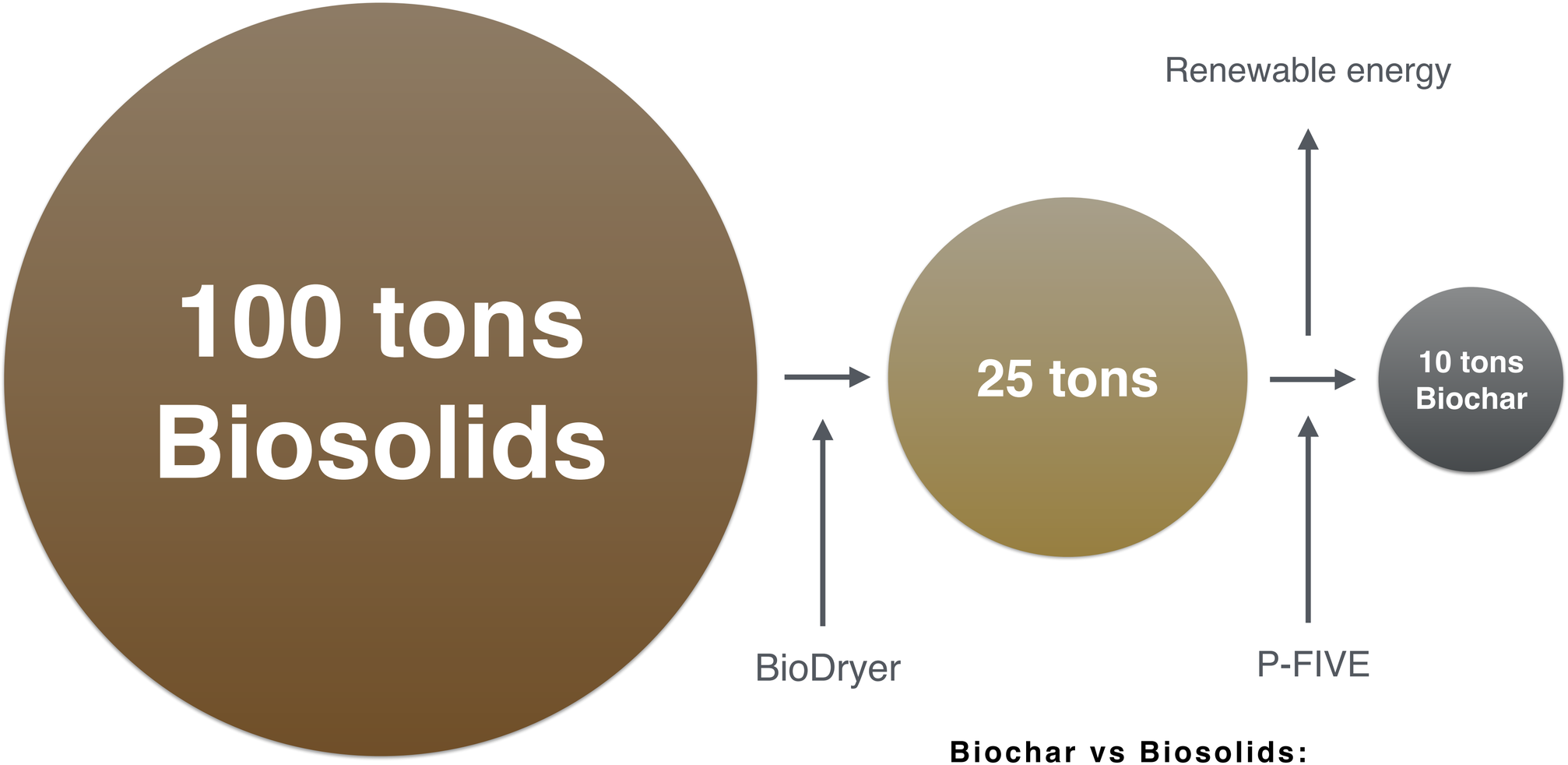
Approving the technology as a “landfill diversion method”



First pyrolysis of sewage sludge permitted in the USA!

TECHNOLOGY

BIOFORCETECH Corporation



Biochar vs Biosolids:

All nutrients are conserved, No pathogens, PCCBs, PFAS and PFOA are destroyed

PFAS REMOVAL

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Bioforcetech has conducted an internal study to evaluate the fate of 38 PFAS and PFOAS compounds using this method. The results are published in this article for the first time showing the P-FIVE Reactor as an effective method for removing PFAS and PFOA from municipal Biosolids at an industrial scale.

Compound Name	Dry Biosolids (ng/g)	Biochar (ng/g)
PFBA	7.03	Not Detected
3:3 FTCA	ND	Not Detected
PFPeA	5.94	Not Detected
PFBS	2.3	Not Detected
4:2 FTS	ND	Not Detected
PFHxA	33.7	Not Detected
PFPeS	ND	Not Detected
HFPO-DA	ND	Not Detected
5:3 FTCA	64.5	Not Detected
PFHpA	7.45	Not Detected
ADONA	ND	Not Detected
PFHxS	ND	Not Detected
6:2 FTS	ND	Not Detected
PFOA	89.1	Not Detected
PFHpS	ND	Not Detected
7:3 FTCA	40	Not Detected
PFNA	5.3	Not Detected
PFOSA	ND	Not Detected
PFOS	26.3	Not Detected
9Cl-PF3ONS	ND	Not Detected
PFDA	11.3	Not Detected
8:2 FTS	5.68	Not Detected
PFNS	ND	Not Detected
MeFOSAA	23.5	Not Detected
EtFOSAA	19.6	Not Detected
PFUnA	3.39	Not Detected
PFDS	ND	Not Detected
11Cl-PF3OUdS	ND	Not Detected
10:2 FTS	ND	Not Detected
PFDoA	5.85	Not Detected
MeFOSA	ND	Not Detected
PFTrDA	ND	Not Detected
PFTeDA	2.44	Not Detected
EtFOSA	ND	Not Detected
PFHxDA	ND	Not Detected
PFODA	ND	Not Detected
MeFOSE	17.1	Not Detected
EtFOSE	ND	Not Detected

BIOCHAR

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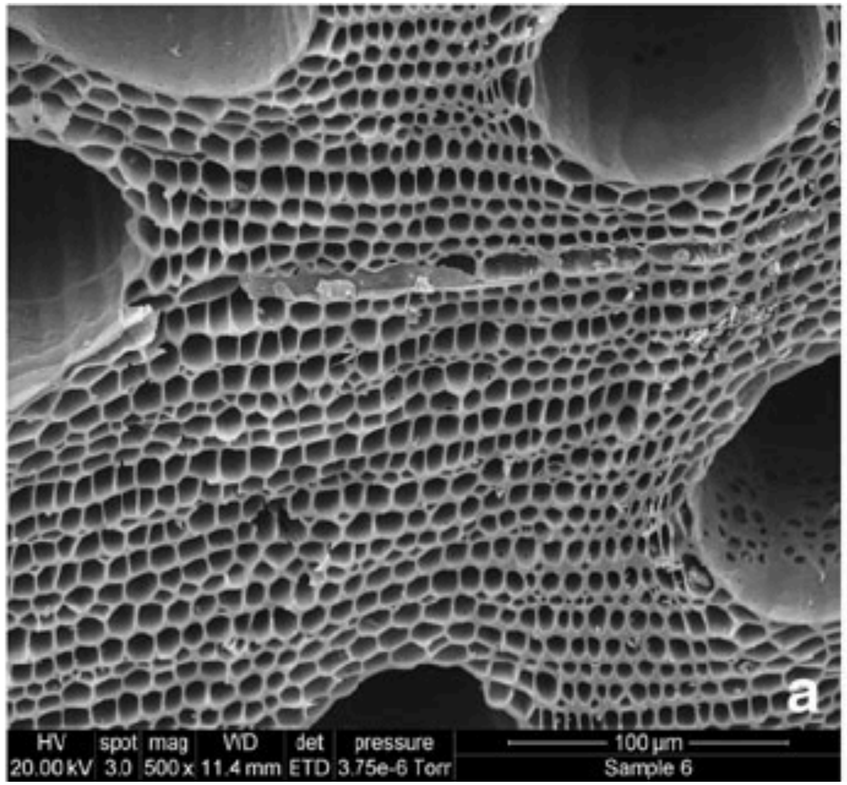
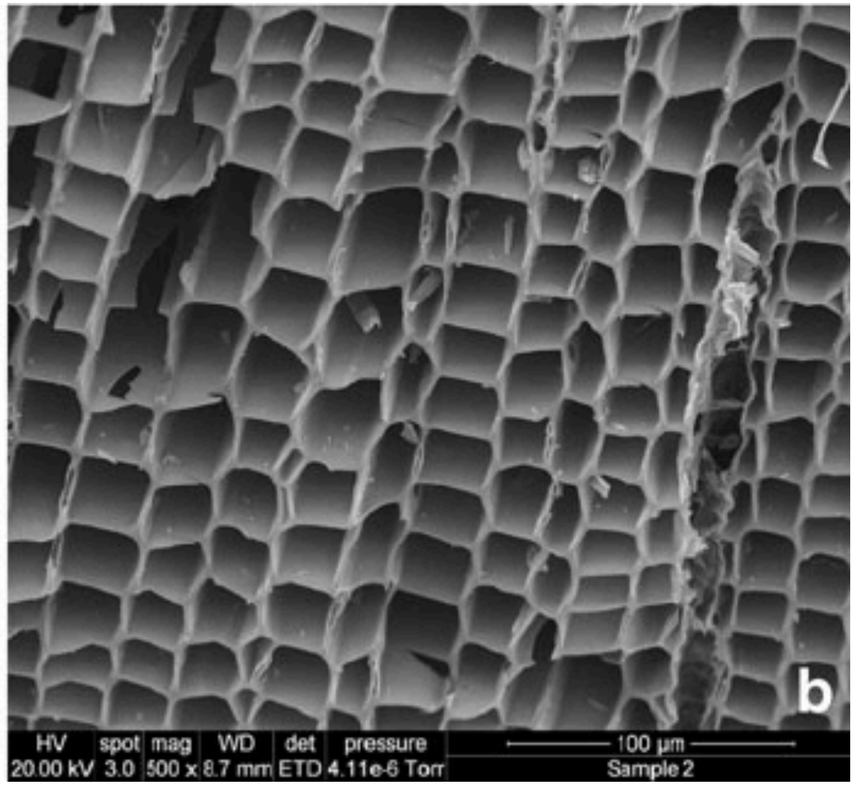
Biochar is a valuable byproduct of pyrolysis and can be used in many different ways. Biochar is mostly know as a great soil amendment, but it can be used also as absorber in functional clothing, insulation in the building industry, as carbon electrodes in super-capacitors for energy storage, food packaging, waste water treatment, air cleaning, silage agent or feed supplement, for drinking water filtration, sanitation of human and kitchen wastes, and as a composting agent.





BIOCHAR

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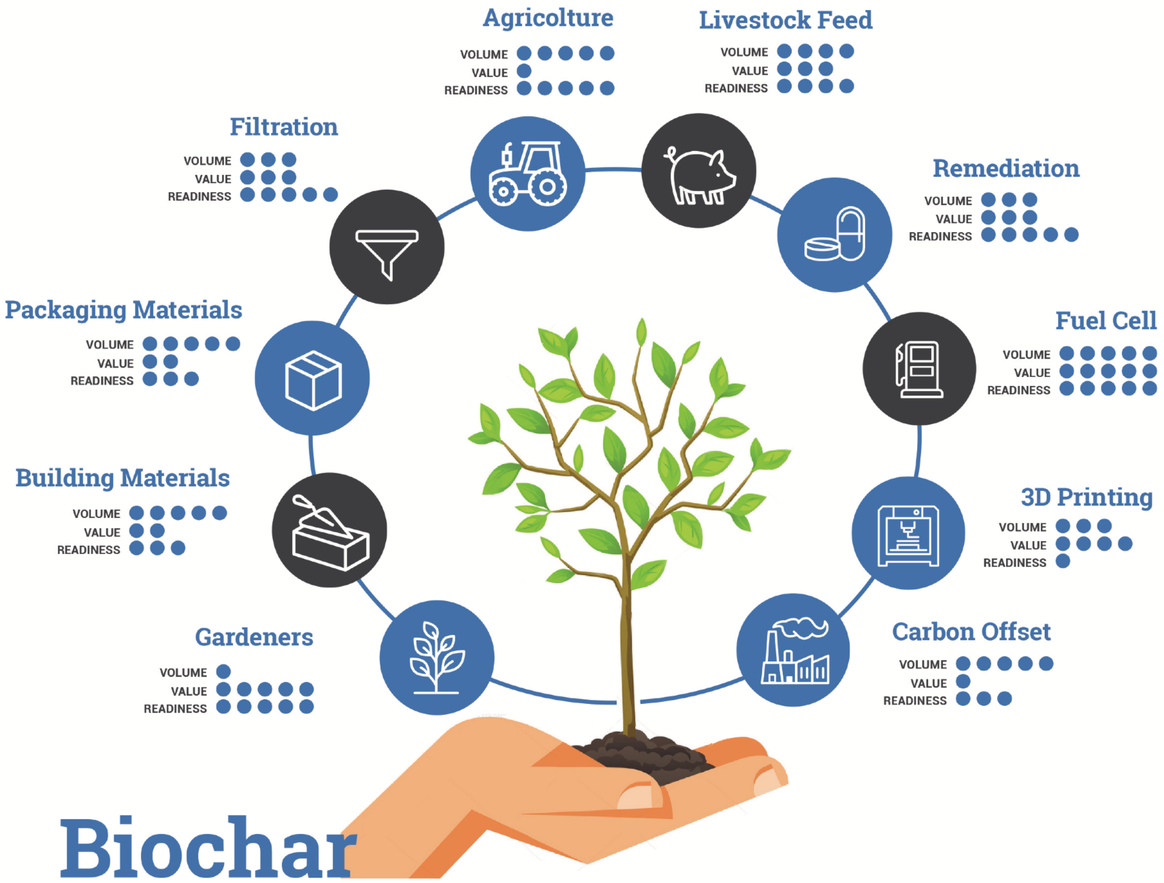

Up to 5 tons of CO2
per ton of Biosolids

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BIOCHAR

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- BIOCHAR USE EXAMPLE

Redwood City | California Founded 1867

Sewage

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Biochar

Applied to parks as soil amendment

Save water and fertilizer

BIOCHAR

BIOFORCETECH Corporation

- BIOCHAR USE EXAMPLE

USDA United States Department of Agriculture

“I believe there is some promise in utilizing your biochar as a filler for plastic. The films could be "bent" without shattering. It is just a matter of finding the right application for your material. ***One possible application*** *would be incorporation into thick,* ***injection molded items such as irrigation tubes, trash bins, or flower pots****. Another possible avenue would be to use the filler in recycled or reclaimed plastics. Finally,* ***it may be used to replace the sometimes toxic colorants available in the current market.****”*

LENNARD TORRES, USDA

SOLUTION BENEFITS

BIOFORCETECH Corporation

Reduced and fixed cost for years: automation, energy savings and low maintenance ensure that the cost of organic waste disposal is kept low for years.

90% volume reduction: the waste is converted into valuable by-products and also reduced by 90%. This solution potentially removes millions of truck from roads.

Energy positive: by utilizing bacteria and advanced pyrolysis, our system reduces energy consumption by 90 to 100%.

UpCycle waste: we are converting organic waste into biochar. This means that the waste becomes a product with economic value!

Carbon sequestration: by producing biochar, the carbon that was previously in the atmosphere is now returned to the soil. Our system is then carbon negative and slows climate change.

SOLUTION BENEFITS

BIOFORCETECH Corporation

SVCW Silicon Valley Clean Water

- Fixed $60/ton
- -300 truck trips per year
- Energy neutral process
- 350 tons of valuable Biochar is generated
- 800 tons/year of CO2 sequestered

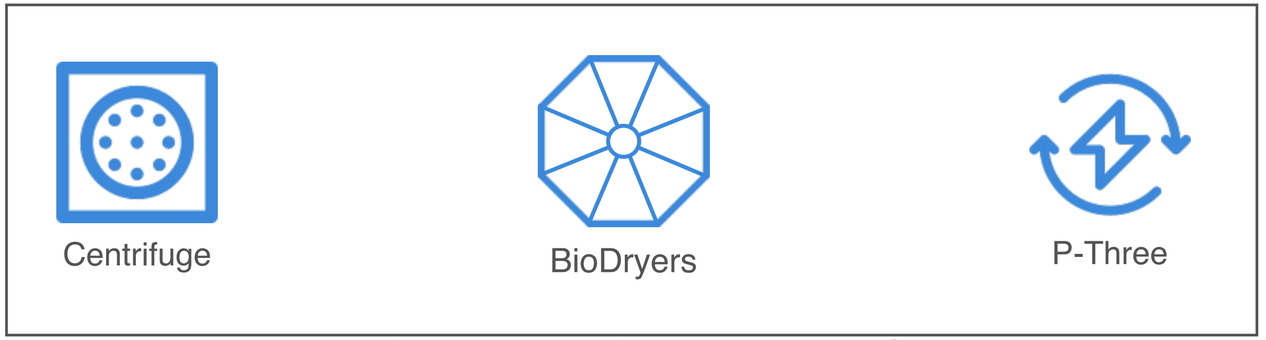
Design Build Example

A full scale system, designed and built to generate, on site, value from yard waste, food waste and biosolids.

8,000 tons (22% dry)

Sludge + Food Waste

Sludge and food waste slurry are mixed in a blending tank.

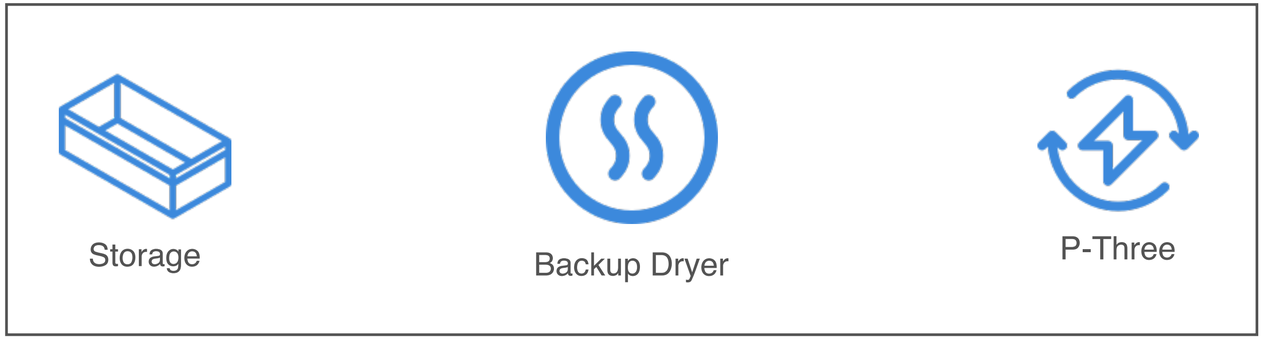


850 tons
HD Biochar

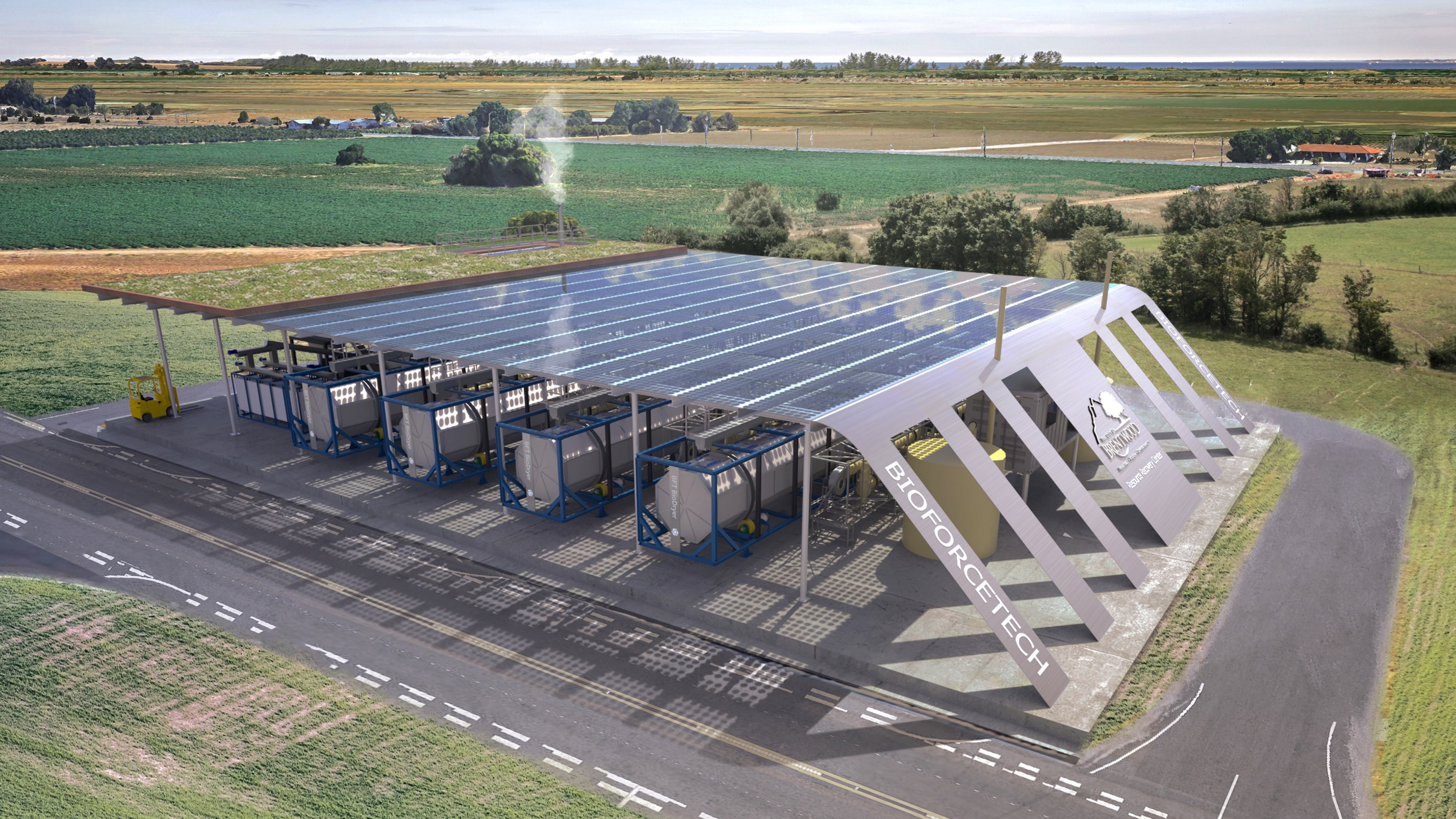
10,000 tons (60% dry)

Ground yard waste

Yard waste is ground before can be sent to the system.



2,000 tons
Wood Biochar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