



BIOFORCETECH
Corporation

Truly Sustainable
Organics Management



Organic Waste

Transforming waste:

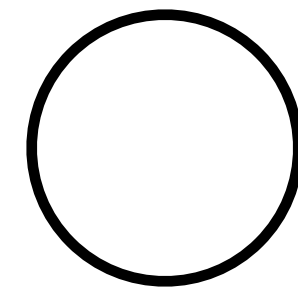
Removing contaminants

Reducing carbon emissions

Promoting circular economies



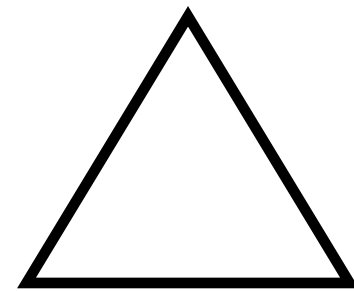
WASTE



Opportunity



Biosolids



Generate renewable energy

Remove contaminants

Sequester Carbon

Create renewable products



BFT 2022

In 2013 we founded



BIOFORCETECH
Corporation

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



OUR VALUES

The Problem



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



Incineration
Hard to permit
Energy Intensive
Product loss



Landfill
Methane production
Regulatory problems
Product loss



Farms
Cost increase every year
Regulatory restrictions
Polluting soil

The solution



Bioforcetech locally transforms organic waste into renewable energy and valuable products



Fixed Costs



Green energy



No landfill

ORGANIC WASTE

THE SOLUTION



NO-WASTE

ENERGY NEUTRAL

PRODUCTS!

ACCEPTED FEEDSTOCKS: BIOSOLIDS, FOOD WASTE, GREEN WASTE, YEARD WASTE, AG WASTE (EXAMPLE NUT SHEELS)

STEP 1

THE BIODRYER

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.



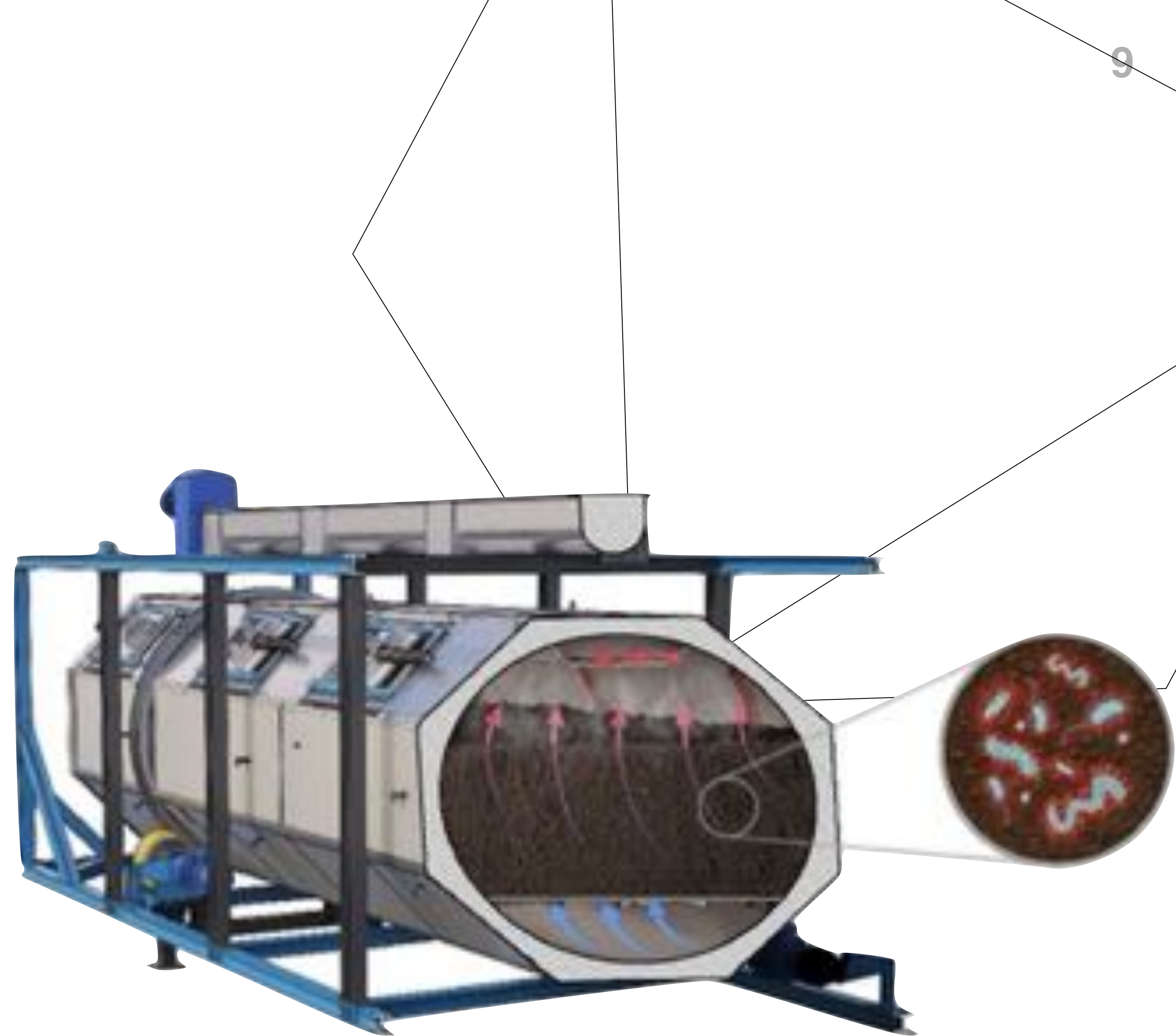
**50%
less energy**



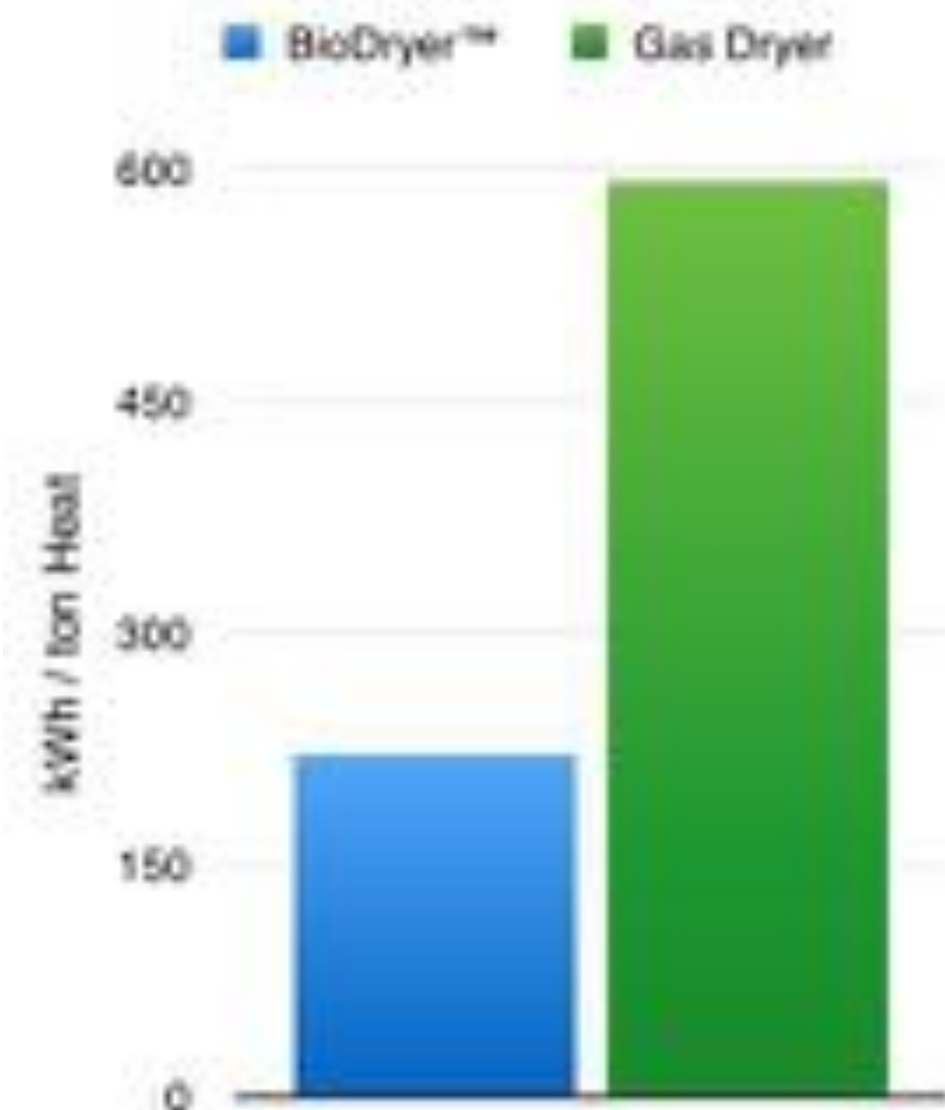
**Nearly
Maintenance Free**



**Fully Automated
With IIOT 4.0**



TECHNOLOGY







STEP 2

THE P-SERIES PYROLYSIS



EPA approved as a NON-Incineration thermal process

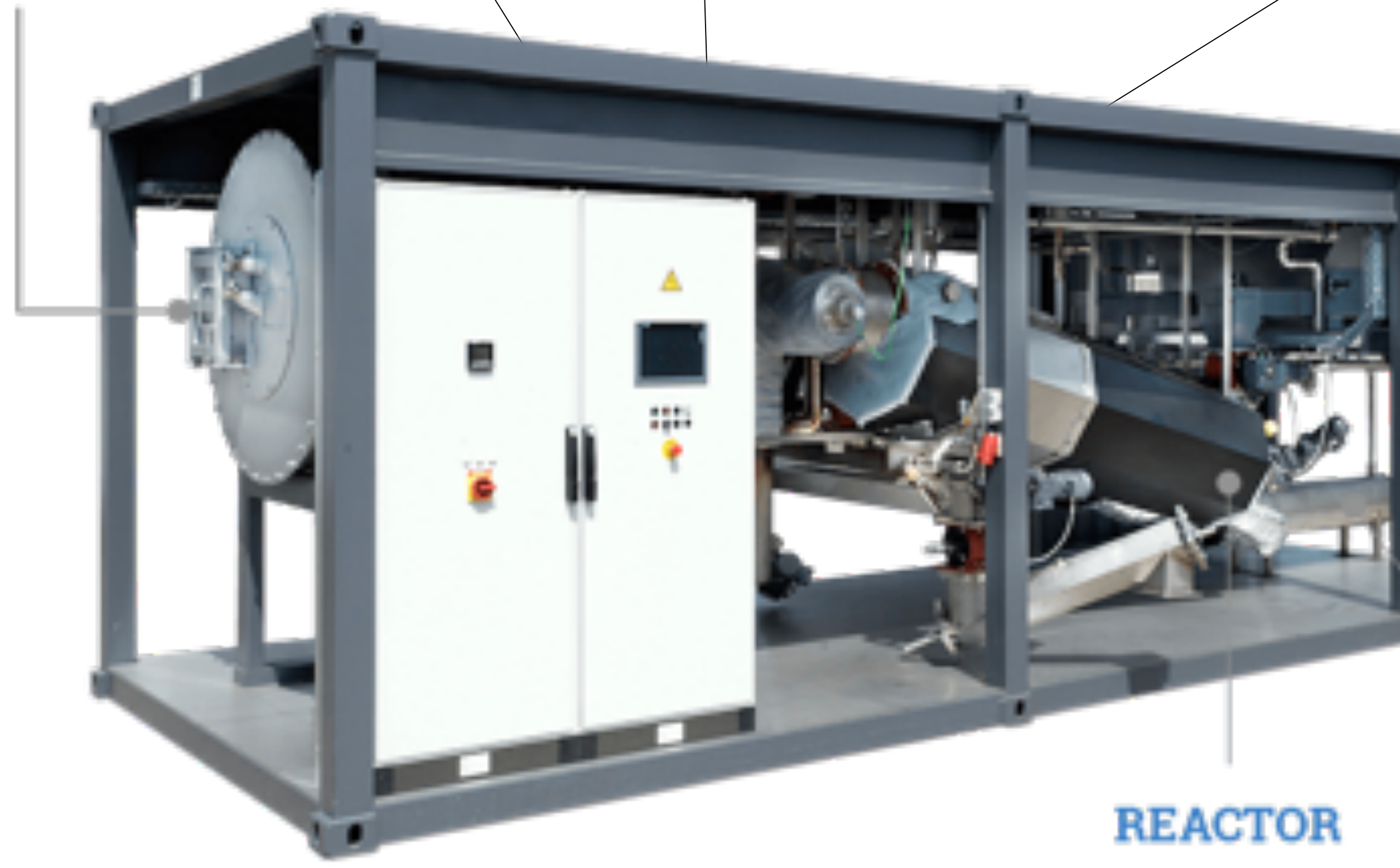


Permitted to operate in the toughest Air district in the USA



Approving the Pyreg technology as a "landfill diversion method"

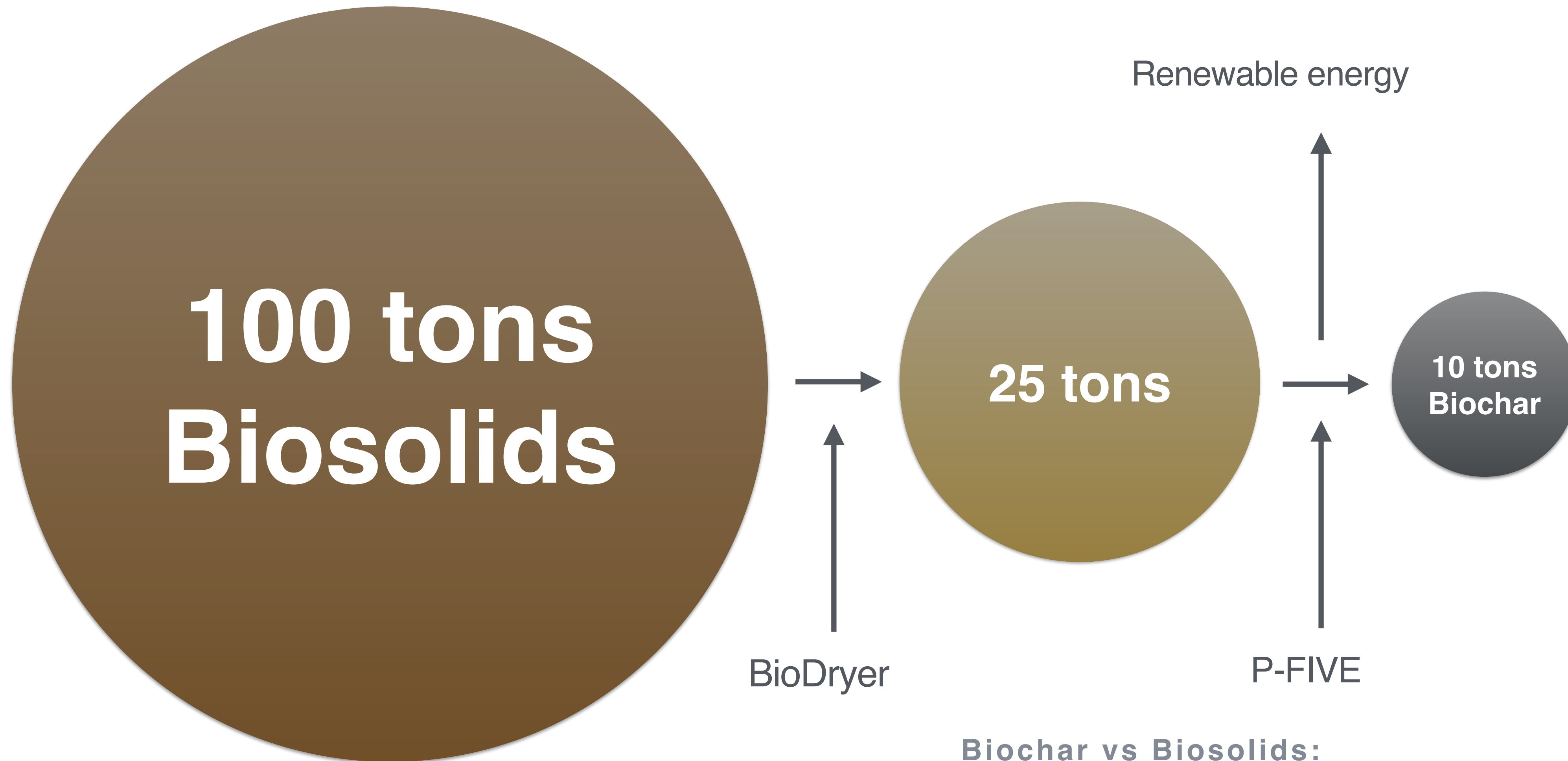
BURNER WITHOUT FLAME



REACTOR

First (and only) pyrolysis of sewage sludge permitted in the USA!

TECHNOLOGY



Biochar vs Biosolids:

Nutrients are conserved, No pathogens, PCCBs, PFAS and PFOA are destroyed



B i o c h a r

FROM WASTE TO VALUE

ABOUT BIOCHAR

Biochar is a valuable byproduct of pyrolysis and can be used in many different ways.

Biochar is mostly known 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.

DESIGNED FOR

SCALABILITY

FROM

3,000
tons / year
=40,000 population



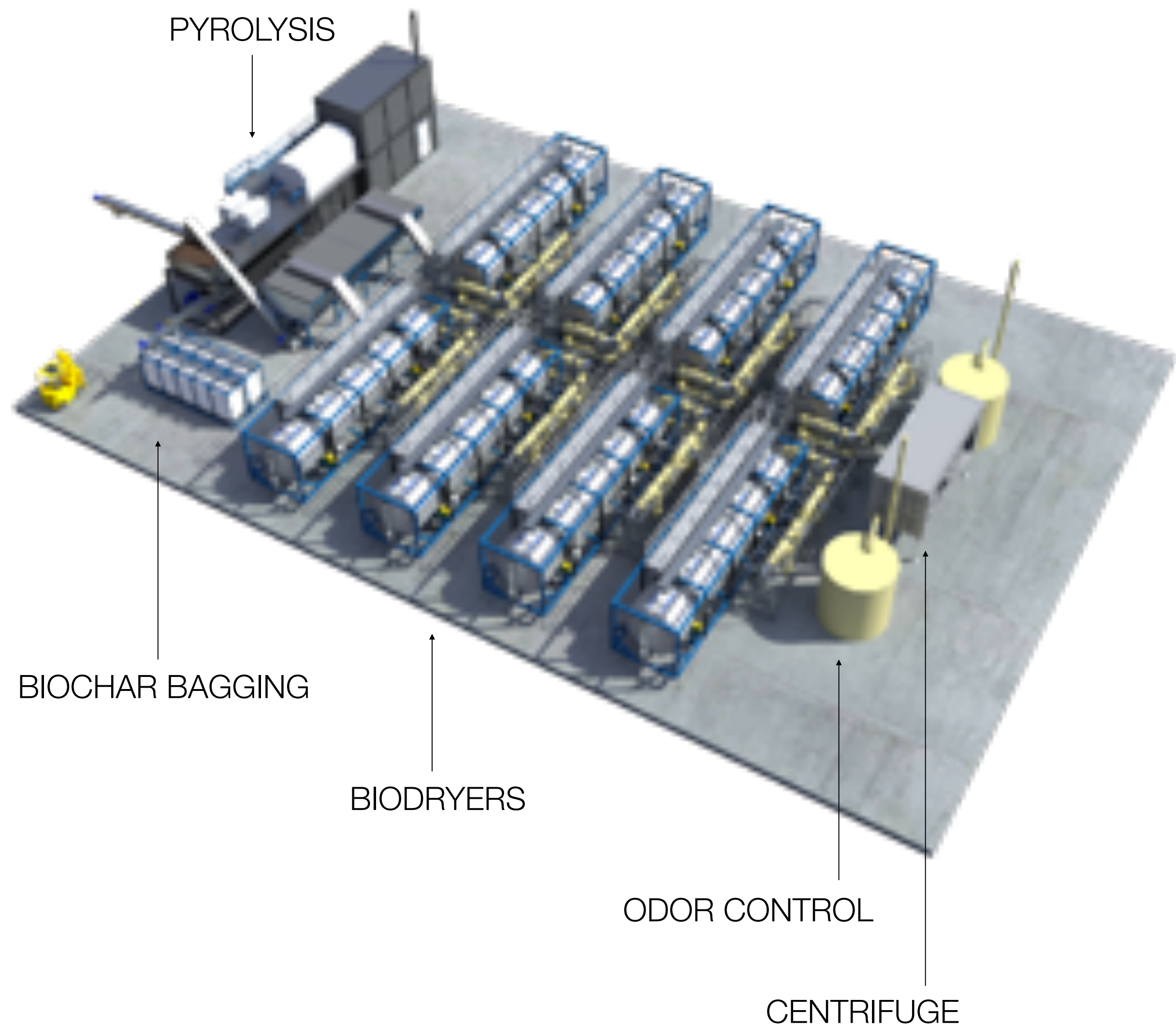
To

70,000
tons / year
=1,000,000 population

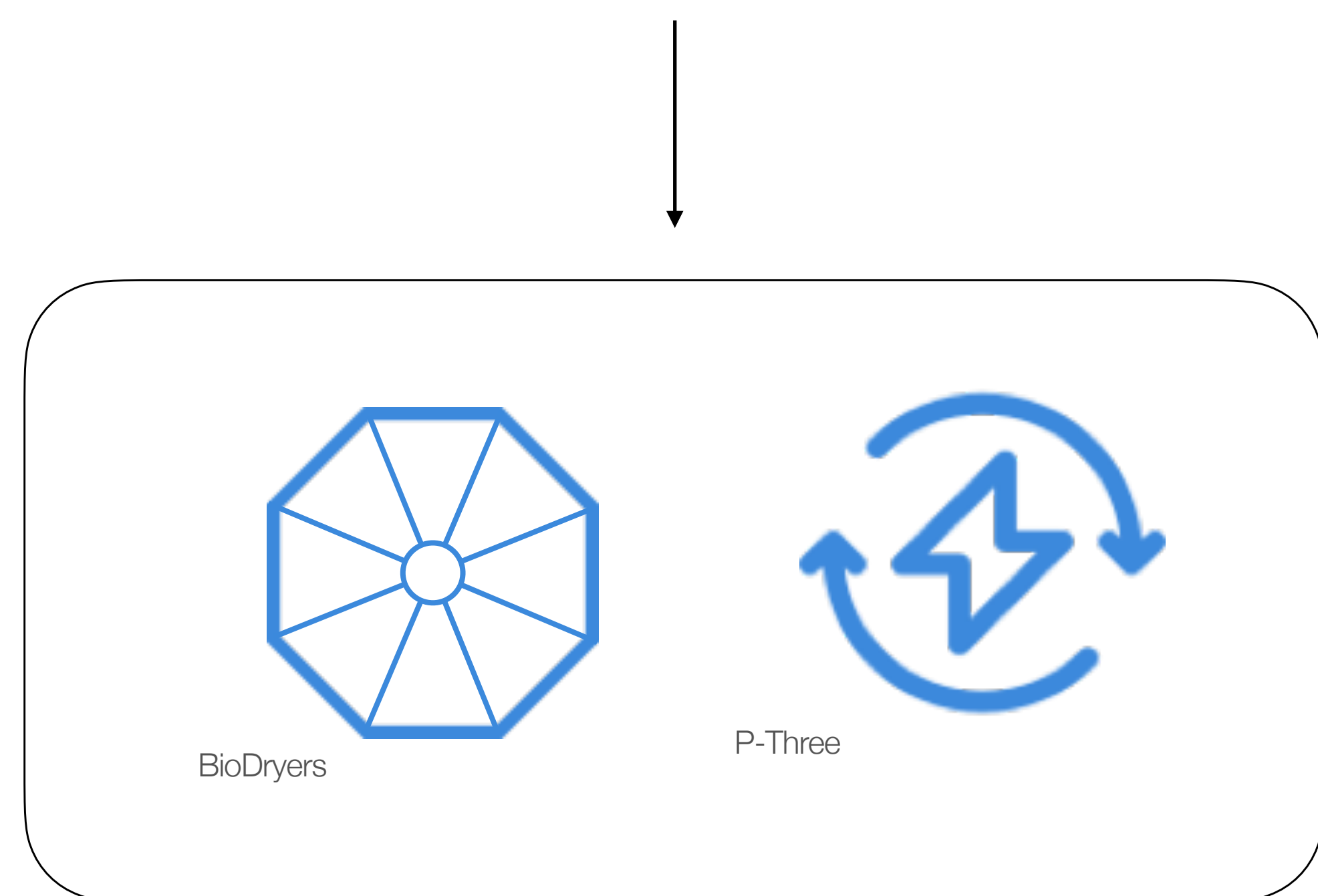
With a fixed cost for 30 years, <\$100 per ton

**THE BIOFORCETECH SOLUTION IS SUITED FOR > 80% OF THE WWTP IN THE USA,
AND OUR SYSTEM CAN BE INSTALLED ONSITE!**





INPUT:
Biosolids @ 25% Solid Content
8,500 tons



OUTPUT:
OurCarbon
900 tons

Compact system:



Installed directly at the WWTP facility

It does not require digesters

Zero-Waste, Zero-PFAS, only beneficial reuse



Sustainability: Removing Contaminants

PFAS FREE 

HydroCarbons FREE

Micro Plastics FREE



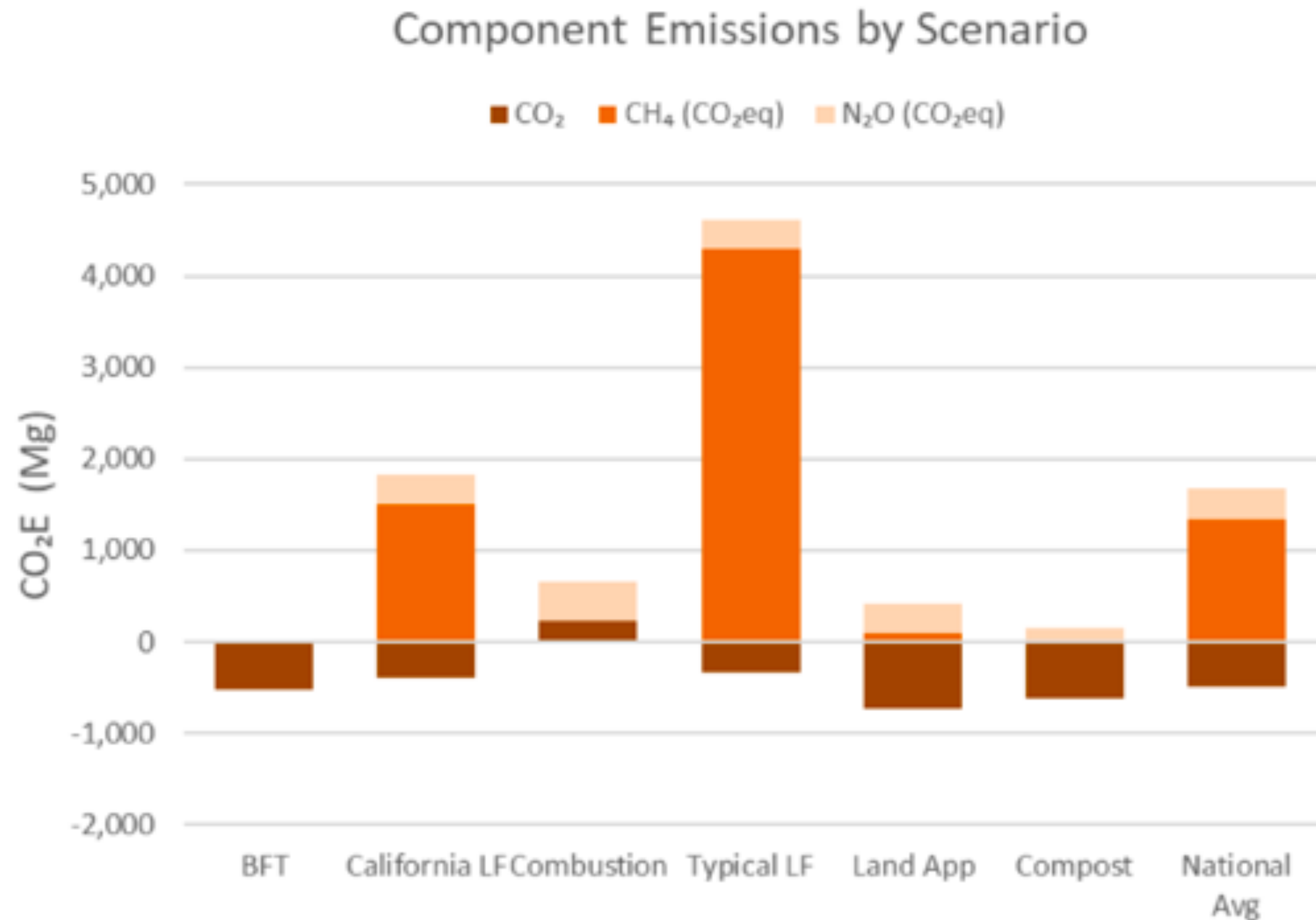
PFAS REMOVAL

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	44.5	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

Sustainability: Carbon Emissions



-4 tons CO₂e

National Average

-10 tons CO₂e

Typical Landfill

-45M tons CO₂e

More than entire Denmark

Sustainability: Promoting circular economies



Made with
OurCarbon™

A carbon negative base material
made by diverting waste from landfill

Made with
OurCarbonTM

Soil Amendment

Cement

Polymers

Inks



Made with
OurCarbon[®]





OurCarbon Pigment

Sostituisce Carbon Black
(prodotto da petrolio)

- 3.3 ton CO₂e per Ton

Made with
OurCarbon[®]



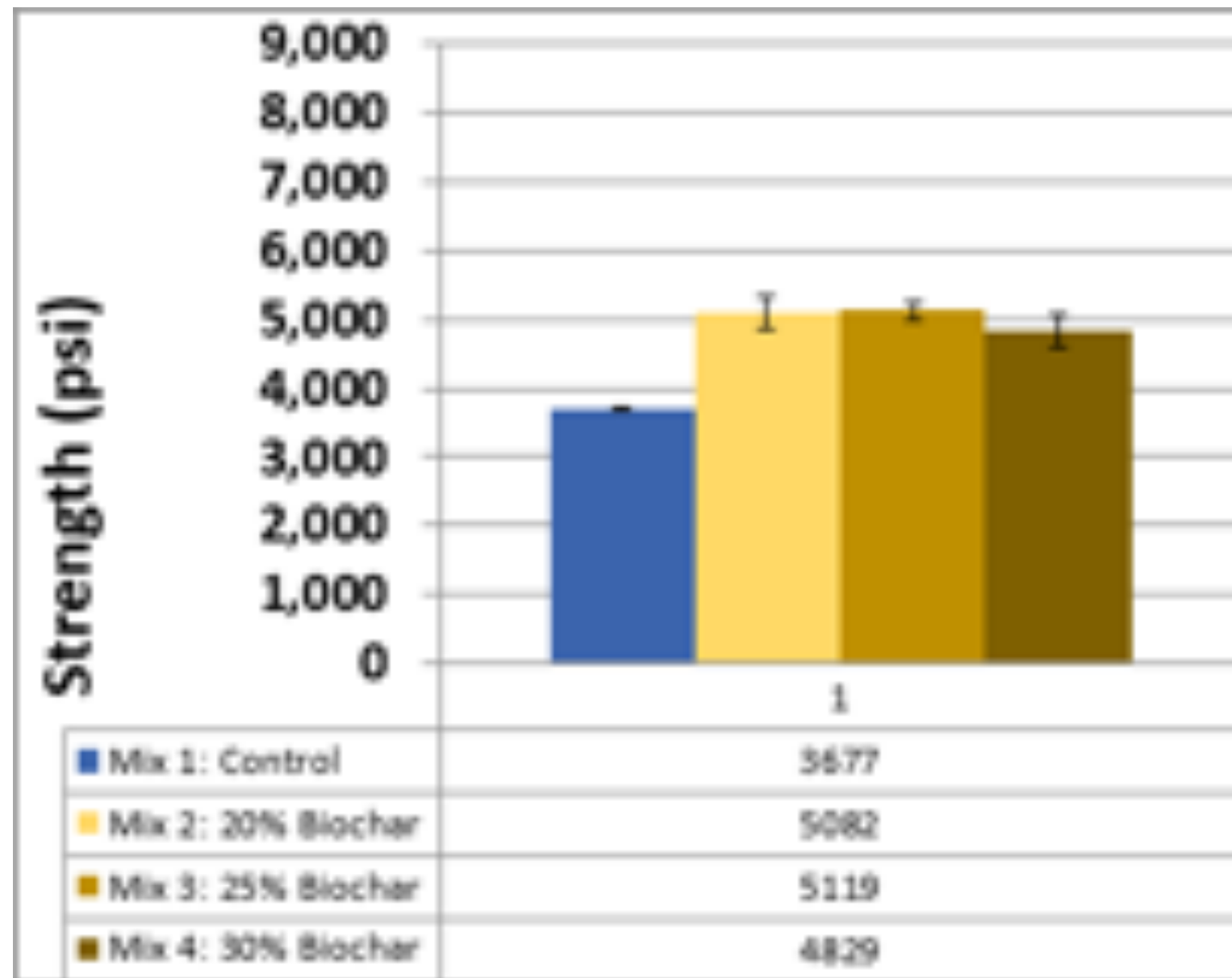


Made with
OurCarbon[®]



Carbon Negative Structural Concrete





Carbon Negative Structural Concrete



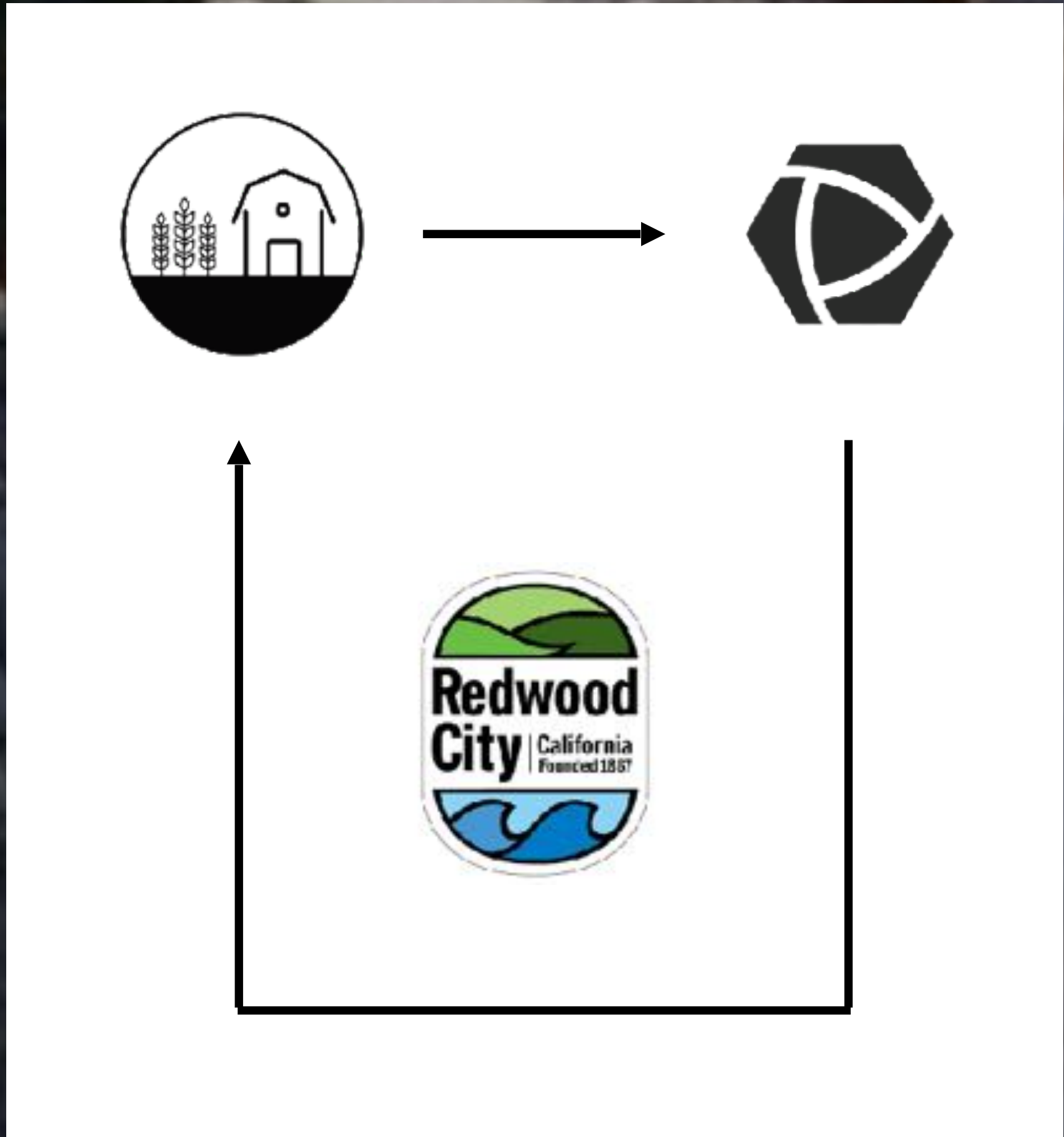
Carbon Negative Structural Concrete



Carbon Negative Structural Concrete



Soil Amendment





Simply
SUSTAINABLE



Fixed costs
and low O&M



From 500 trucks/
to 50 trucks/year



-90% energy usage
comparing to a paddle dryer



NO MORE WASTE!



Up to 13 tons/ton of
CO2e avoided

<https://vimeo.com/492215166>

