

Bioforcetech

Nature is Awesome 

Core Values

BIOFORCETECH



Affordable waste management system



Valuable products from organic waste



Protecting nature and human health



Self sustained and green process

FROM 1954

OUR HISTORY

1954



1994



2012

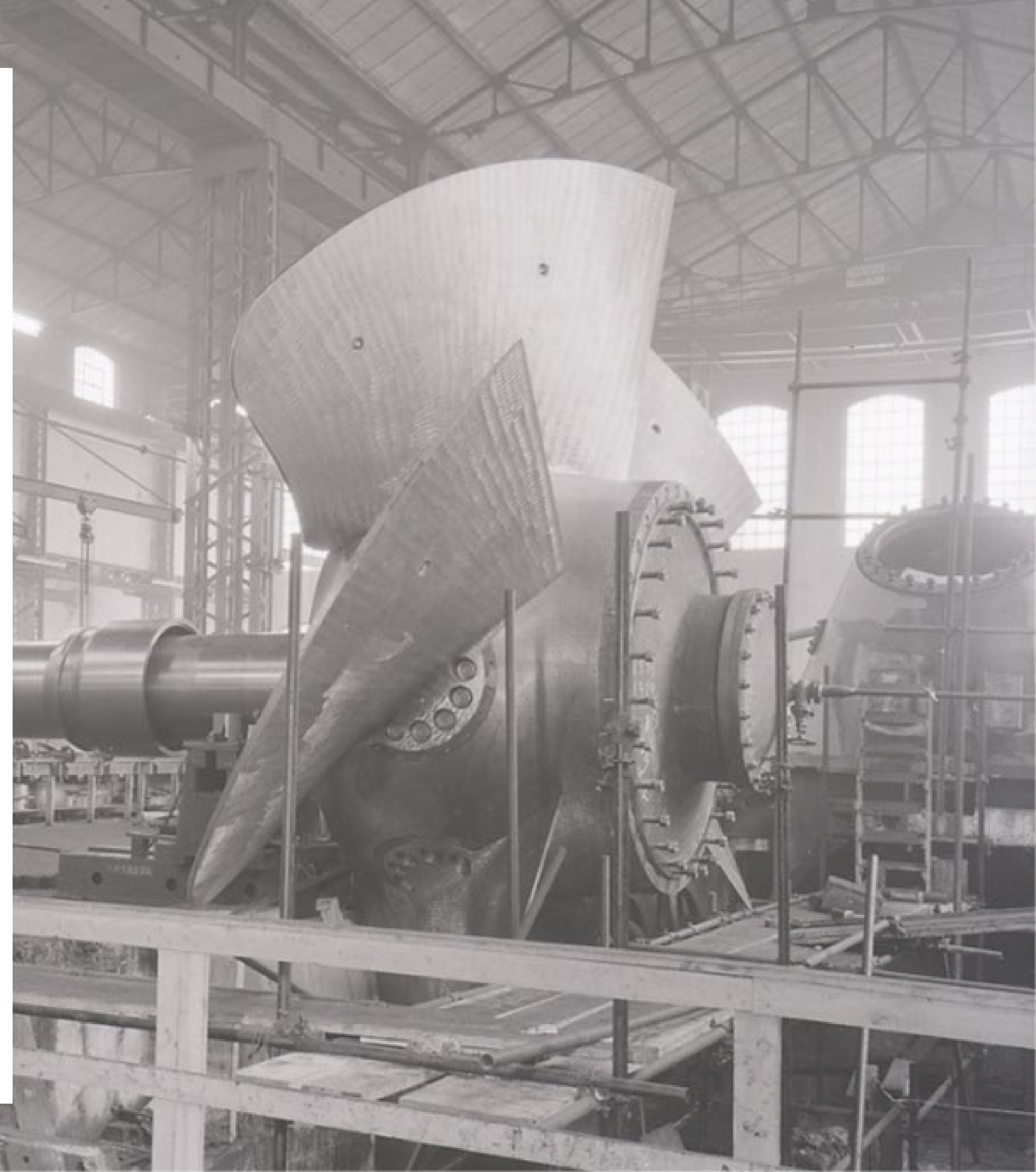


2016



2020

Waste Management Organics
Investment



TIMELINE
BFT HISTORY



BFT Founded

Pilots at SVCW,
CA

Pyreg Partnership

Full Scale
Installation SVCW

Starting
Operations at
SVCW

Second US Installation

First Italian
Installation

US Pyrolysis Permit

35+ References
Worldwide

WM Investment

New SSF
Headquarters

2013

2016

2017

2018

2019

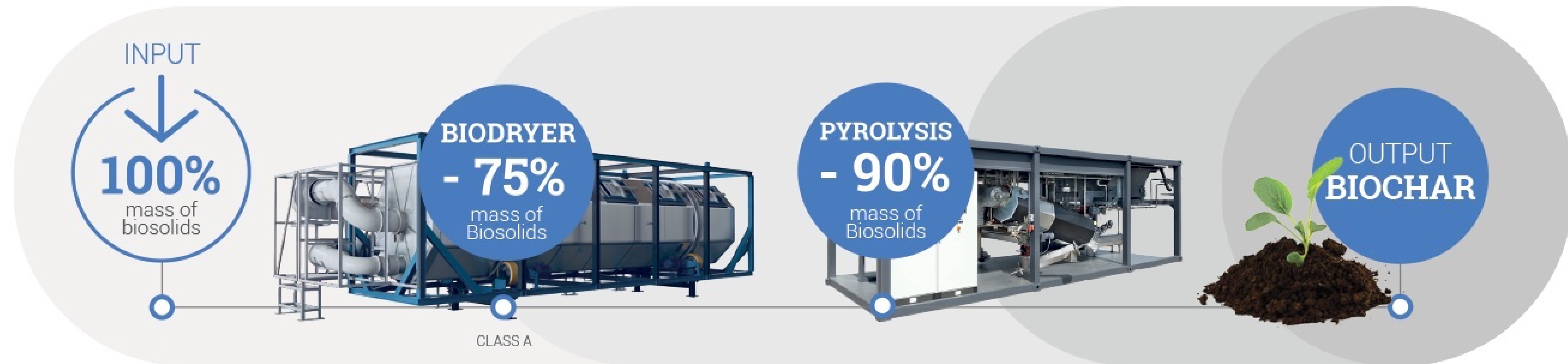
2020

THE BFT SYSTEM



BFT SYSTEM

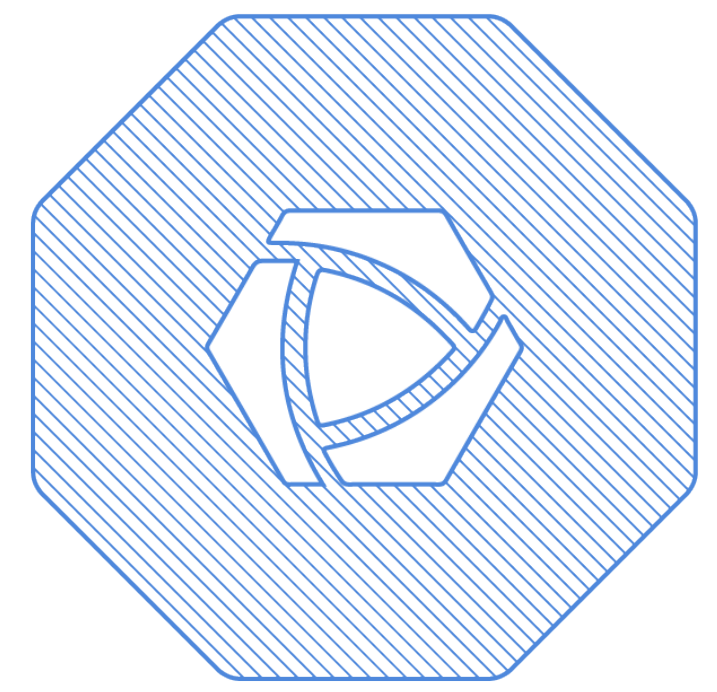
THE SYSTEM



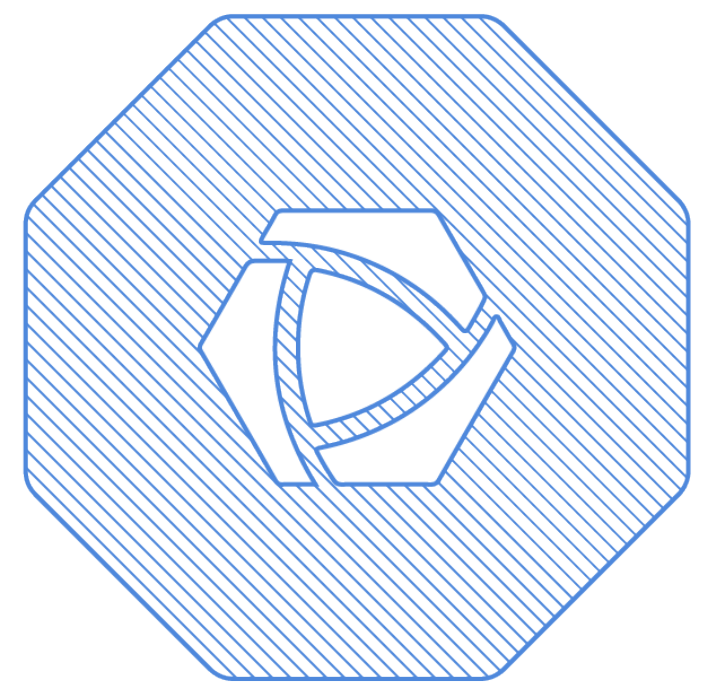
- Single or Multiple Feedstocks
- 90% Volume Reduction
- Biochar Production - Added Value Product
- Digested or Undigested Biosolids
- Renewable Energy Production - Net Zero Energy
- CECs Destruction
- CO2 Sequestration

BFT SYSTEM

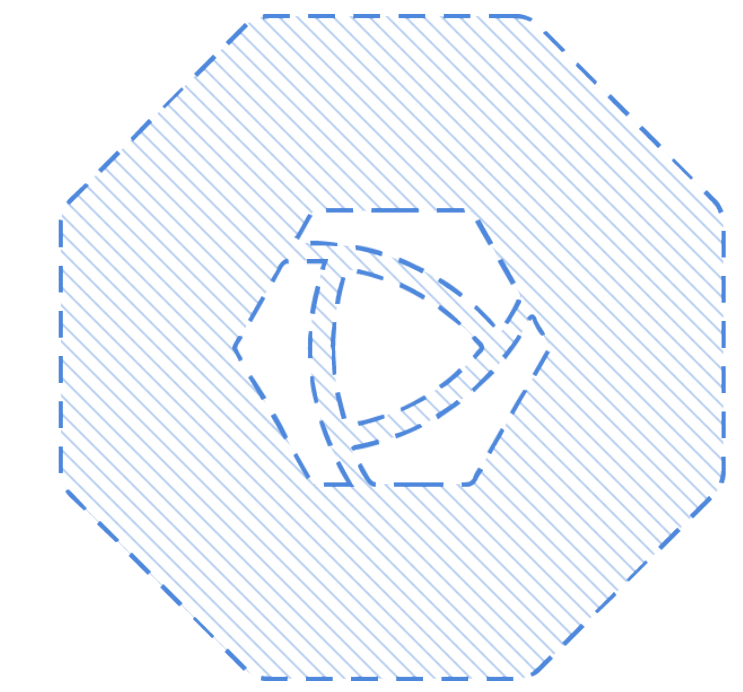
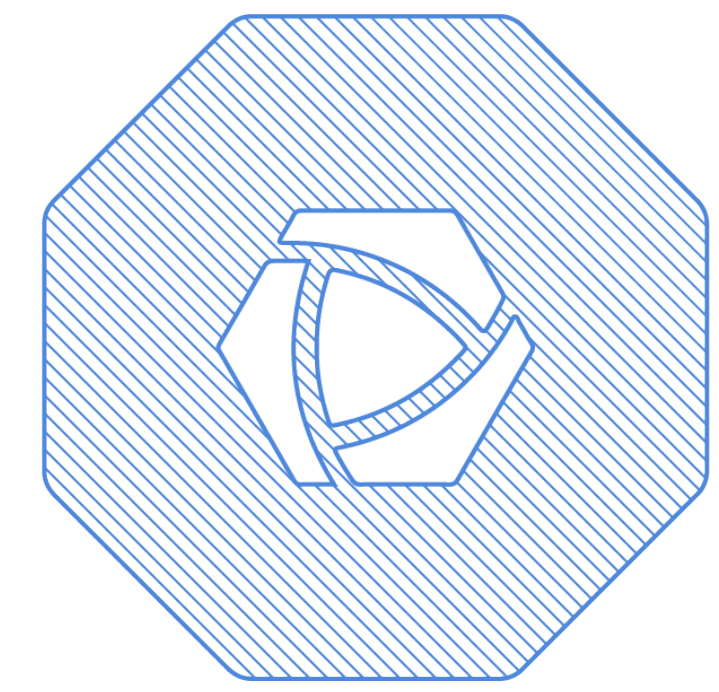
SCALABILITY



1,000 wet tons/year
15K Population



80%
Of US WWTP



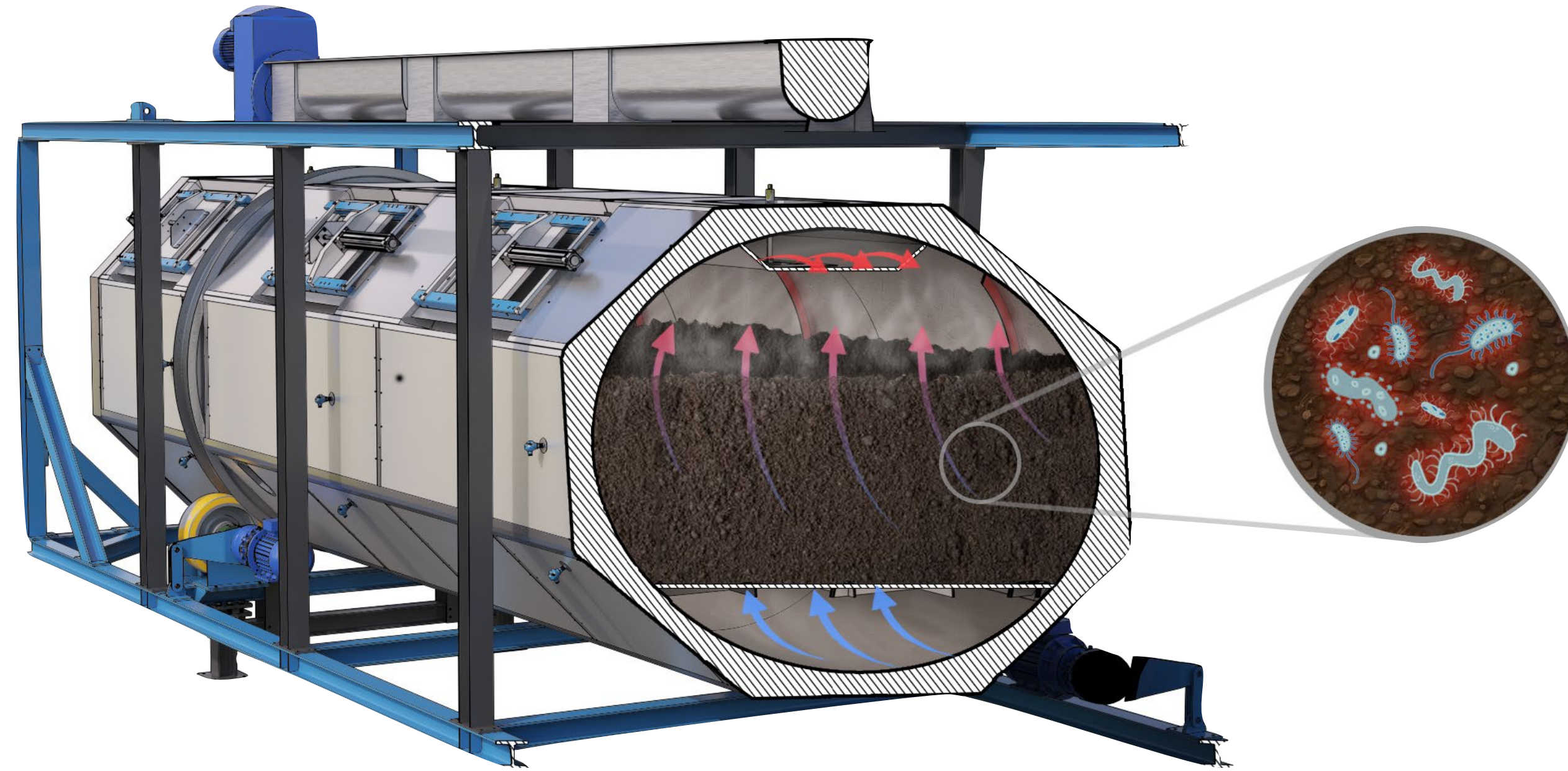
70,000 wet tons/year
1M Population

B I O D R Y E R



STEP 1

THE BIODRYER



● Digested/Undigested Biosolids

● Food Waste

● Yard Waste



50%
less energy



Nearly
Maintenance Free



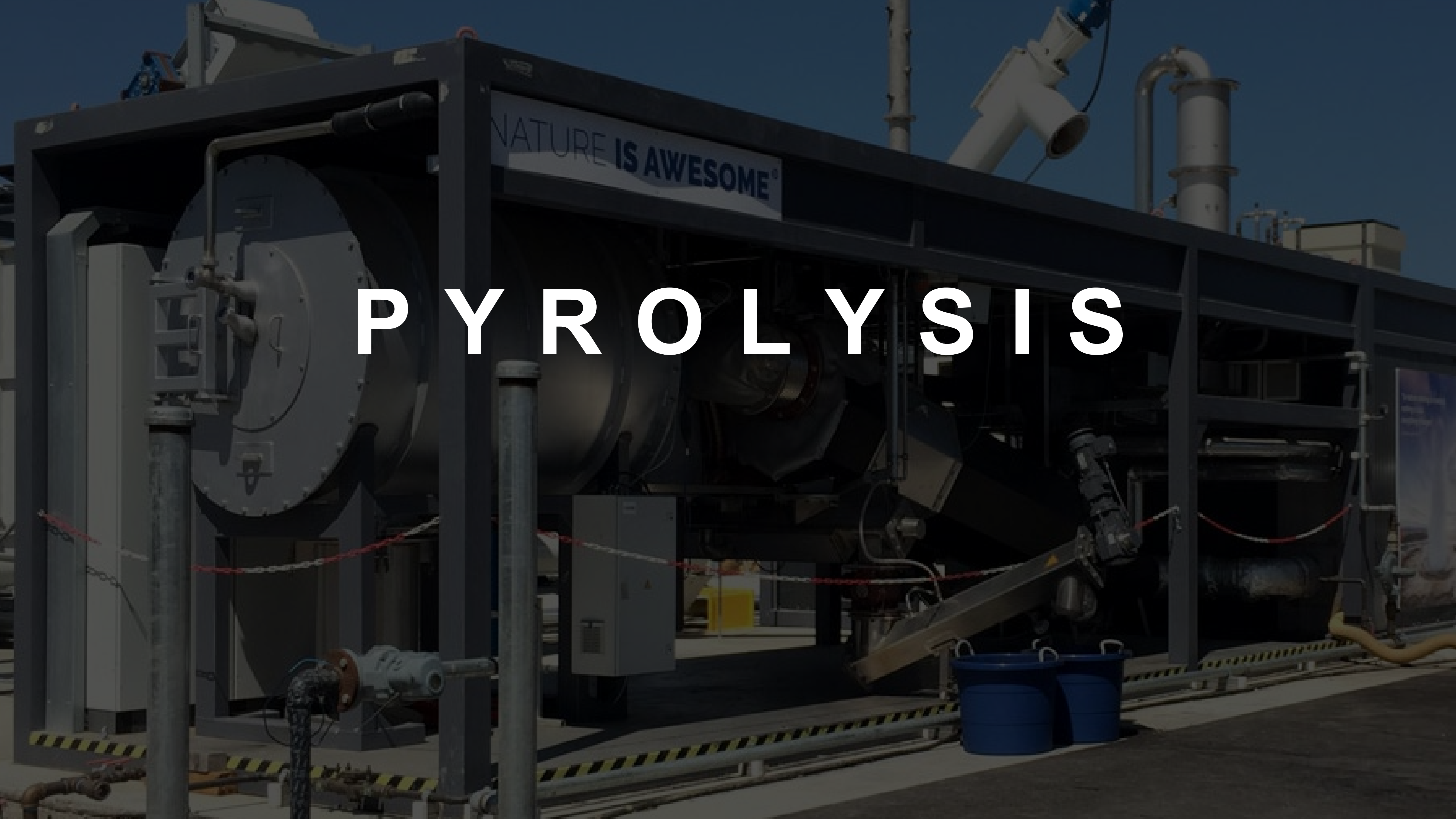
Fully Automated
With IIOT 4.0



Class A Compliant

NATURE IS AWESOME®

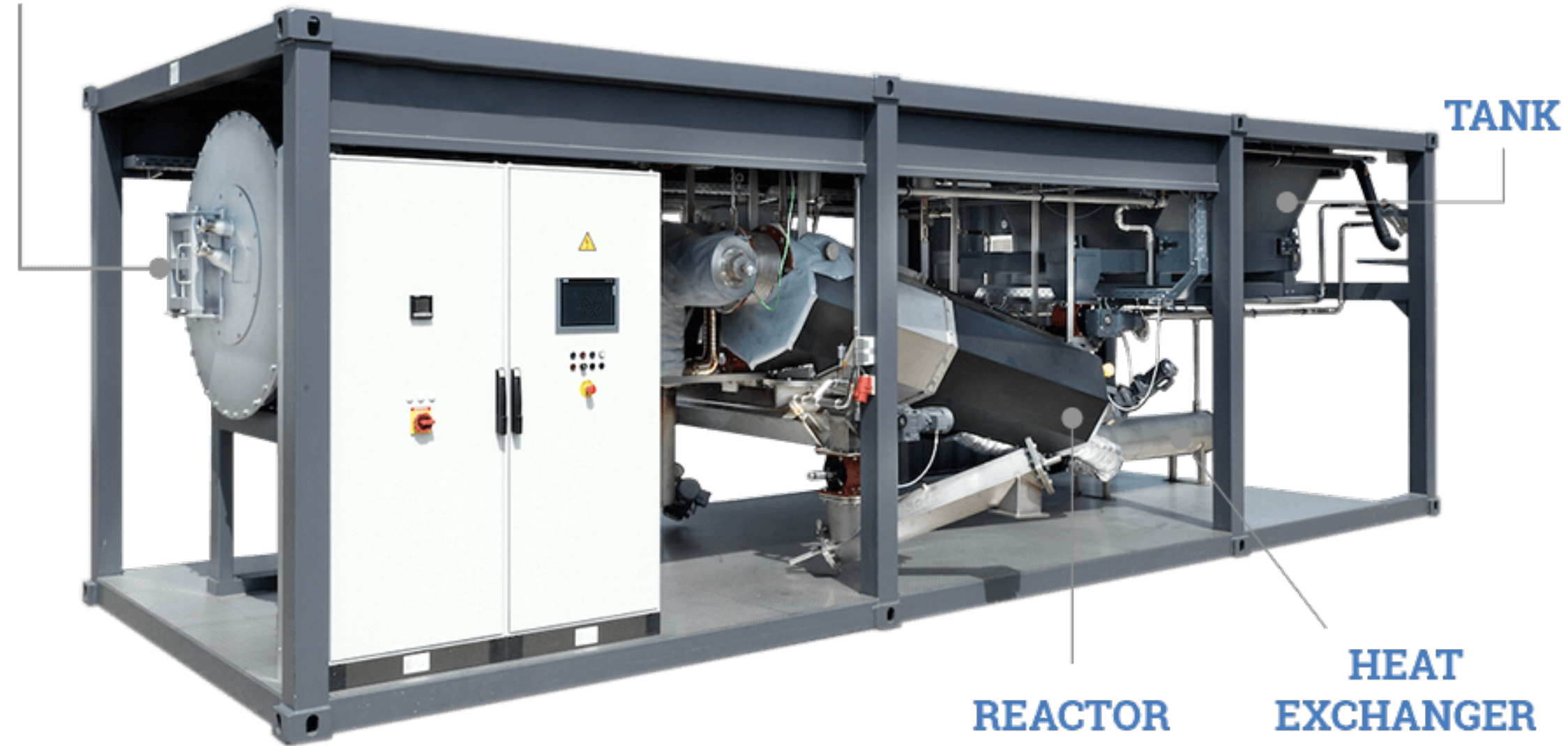
PYROLYSIS



STEP 2

THE P-SERIES PYROLYSIS

BURNER WITHOUT FLAME



EPA approved as a
NON-Incineration thermal
process



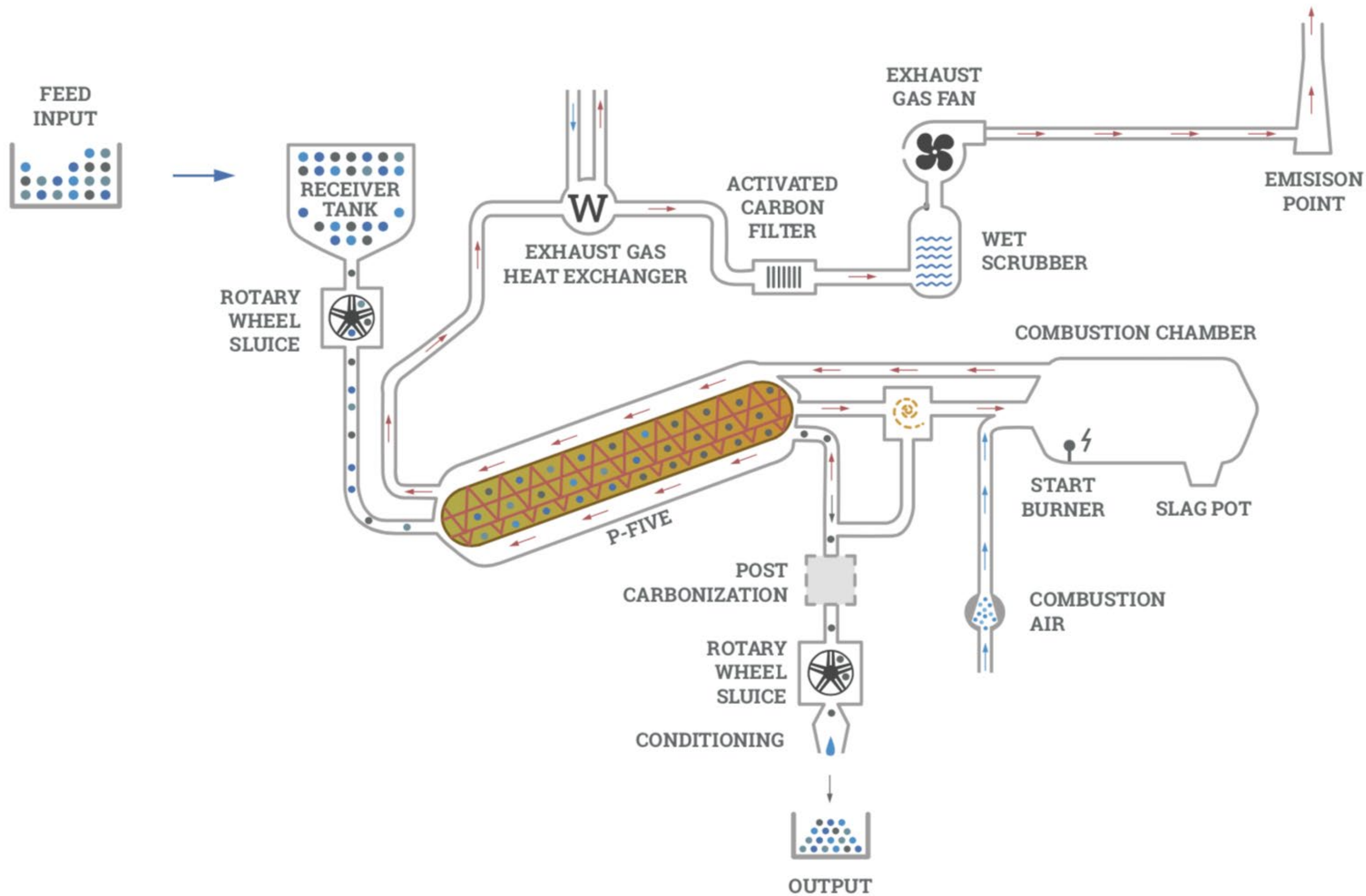
Permitted to operate in the
toughest Air district in the
USA



Approving technology as a
“landfill diversion method”

STEP 2

THE P-SERIES PYROLYSIS



THE BFT PYROLYSIS UNIQUE AND PROPRIETARY ADVANTAGES



Self-Sustained

No external energy is used to run pyrolysis



Patented Flameless Oxidizer

No flame is formed in the oxidizer = clean emissions!



Permitted in the Bay Area

Full scale biosolids pyrolysis system and non-incineration process



No Digesters Required

Capability to process undigested and digested sludge



HQ Biochar Production

Production of PFAS free, Hydrocarbon free, CDFA certified Biochar



Value Back Program

We handle the Biochar sales and give back a share of the profit to the City



Track Record and Reliability

35+ Operating Facilities Worldwide

BIOCHAR



BIOCHAR

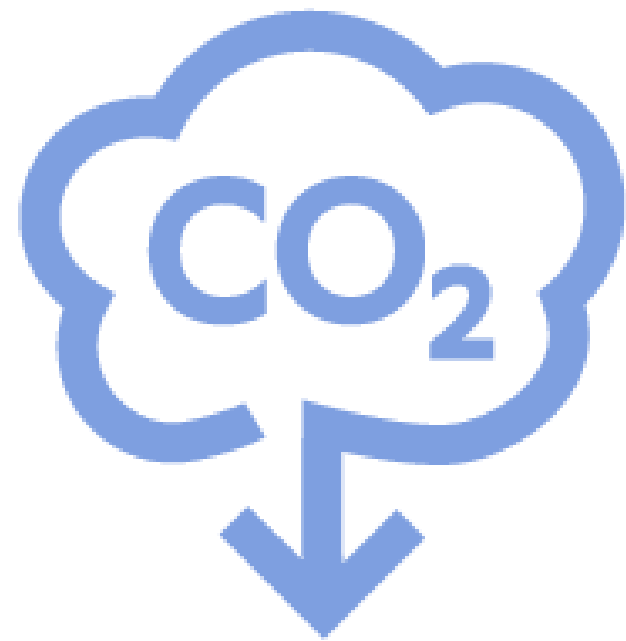
APPLICATIONS



- CECs free
- CDFA approved
- \$0 Disposal cost guaranteed
- Biochar profit share

BIOCHAR

CARBON SEQUESTRATION



- **Sequester**
Every ton of biochar produced sequesters up to 5 tons of CO₂
- **Fix**
Biochar locks carbon in place for centuries
- **Offset**
Replacing carbon emitting materials with biochar



PFAS REMOVAL

Bioforcetech has conducted an internal study to evaluate the fate of 38 PFAS and PFOAS compounds using this method. The published results detail 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

PROJECT DEVELOPMENT

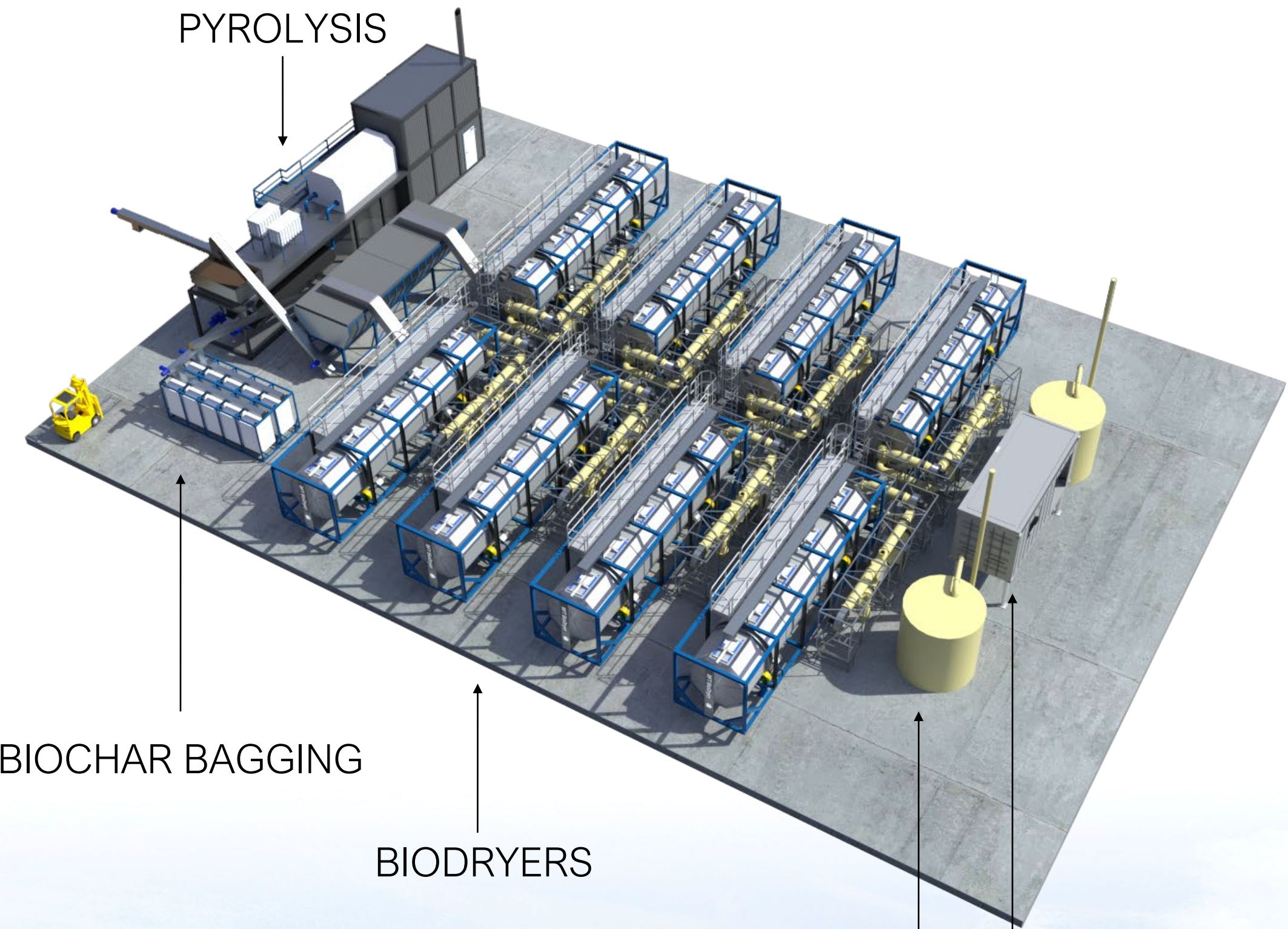


PROJECT DEVELOPMENT

Compact System

- Installed on site
- No Digesters Required
- Zero Net Energy
- Zero Waste
- Zero PFAS
- Beneficial reuse



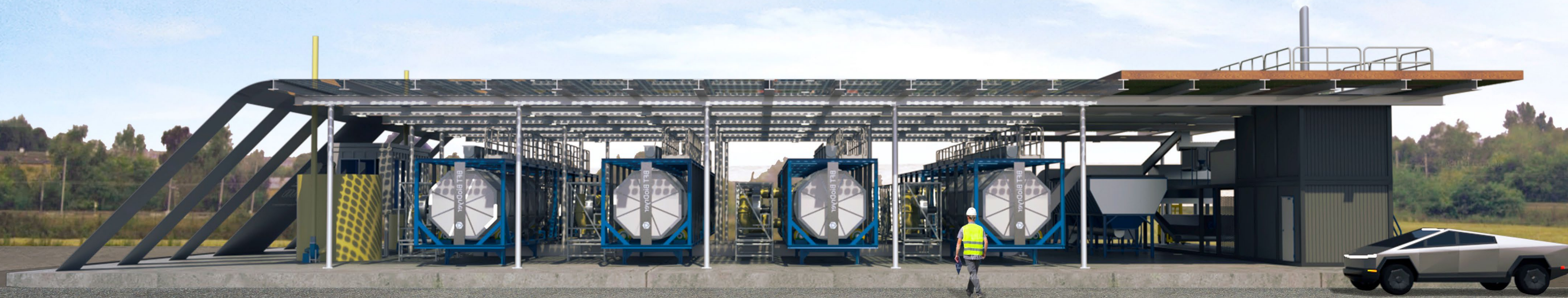


BIOCHAR BAGGING

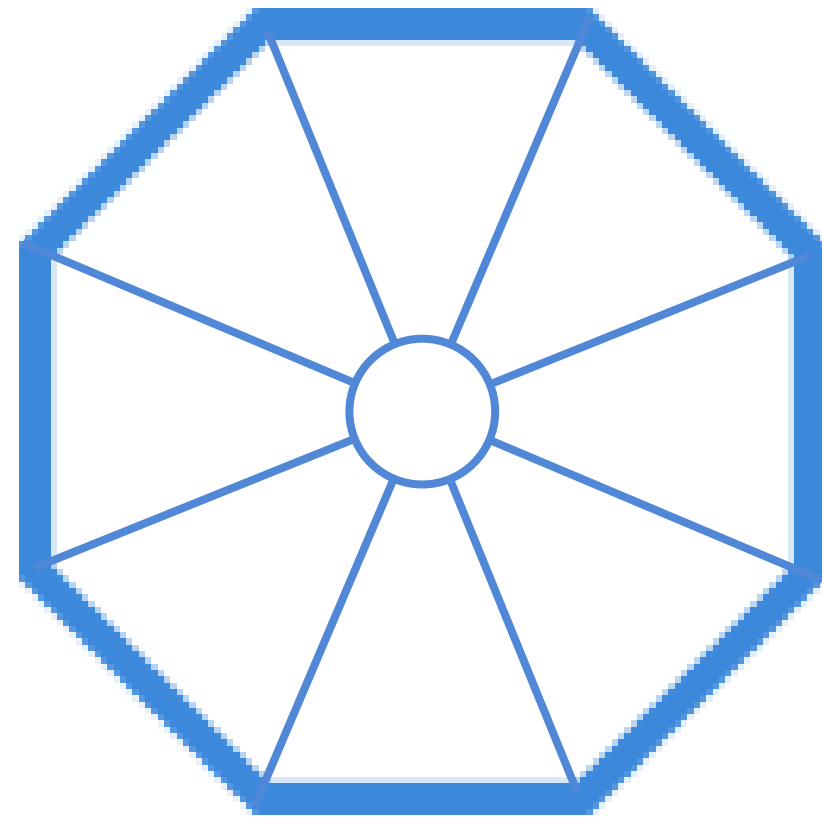
BIODRYERS

ODOR CONTROL

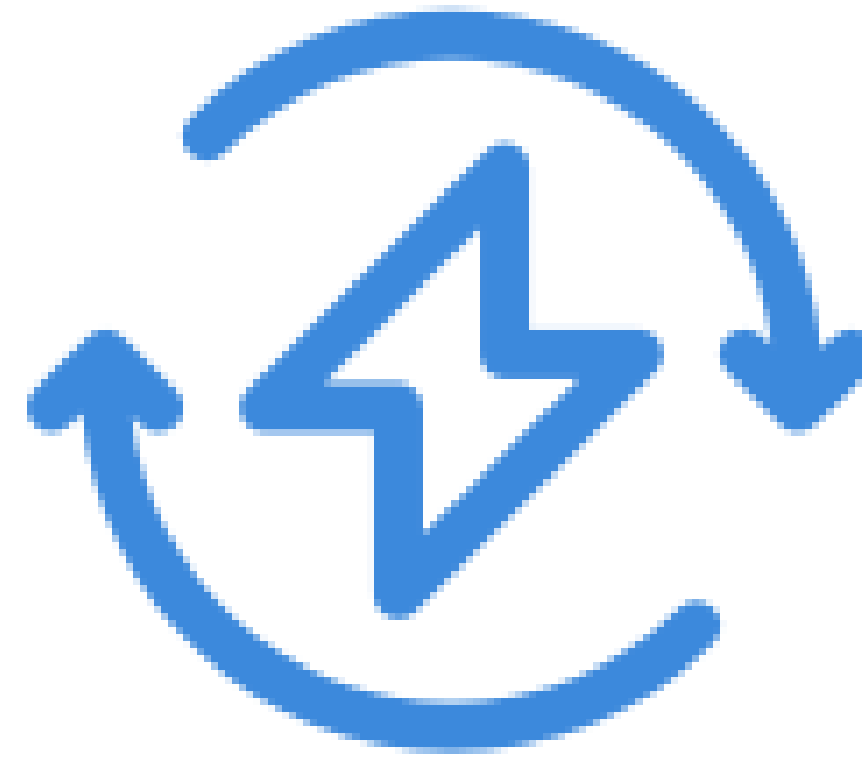
CENTRIFUGE



INPUT
Biosolids @ 22% solids
8,500 tons

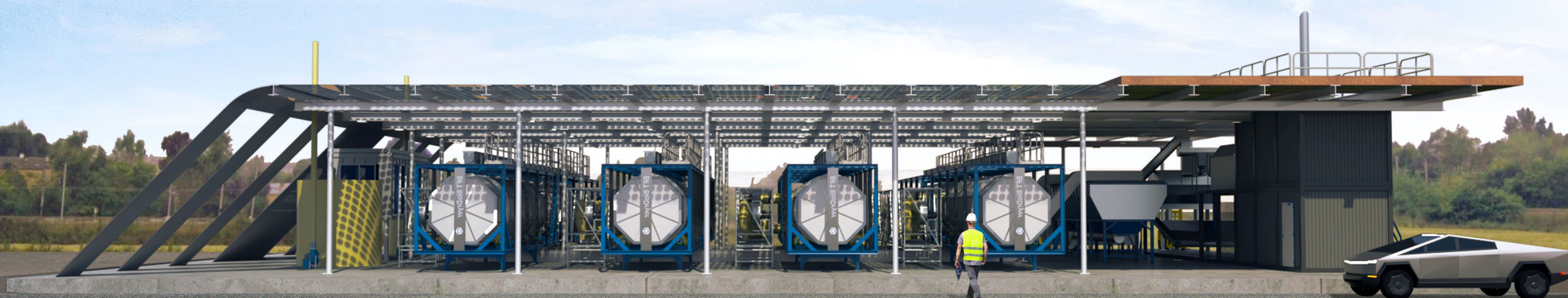


BioDryers



P-Three

OUTPUT
HD Biochar
900 tons





Simply
SUSTAINABLE

BIOFORCETECH



Fixed costs
and low O&M



From 500 trucks/y
to 50 trucks/year



Zero Net Energy



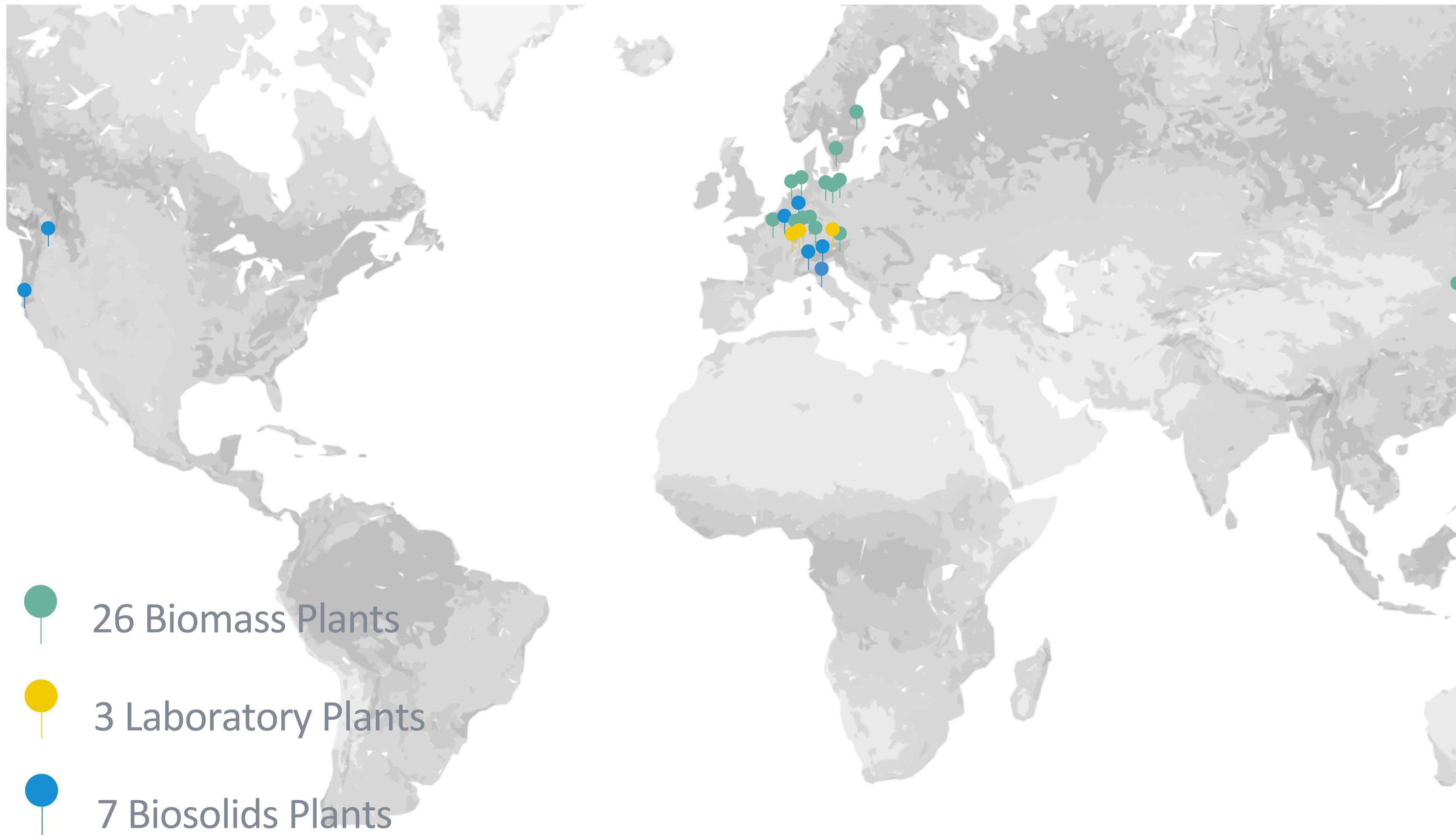
Zero Waste



Up to 8,000 tons
CO2e sequestered

ORGANIC WASTE

2020 REFERENCES

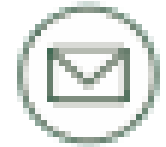


Contact

Valentino Villa



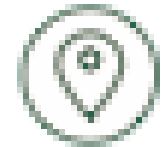
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