

DOCKETED

Docket Number:	20-FINANCE-01
Project Title:	Strategies to Attract Private Investment in Zero Emission Vehicle Charging Infrastructure and Other Clean Transportation Projects
TN #:	232701
Document Title:	Increase Private Investment and Clean Transportation utilizing Continuous Anaerobe Fermentations System (CAFS)
Description:	N/A
Filer:	System
Organization:	Mike Cox
Submitter Role:	Applicant
Submission Date:	4/9/2020 10:23:44 AM
Docketed Date:	4/9/2020

Comment Received From: Mike Cox
Submitted On: 4/9/2020
Docket Number: 20-FINANCE-01

**Increase Private Investment and Clean Transportation utilizing
Continuous Anaerobic Fermentations System (CAFS)**

Additional submitted attachment is included below.



Anaerobe Systems

The Oxygen-Free Specialists

15906 Concord Circle, Morgan Hill, CA 95037,

Response to

Request for Information - Strategies to Attract Private Investment in Zero Emission Vehicle Charging Infrastructure and Other Clean Transportation Projects – February 2020

Docket # 20-FINANCE-01

Continuous Anaerobic Fermentation Systems (CAFS)

Points of Contact

Mike Cox, CEO Anaerobe Systems

mcox@anaerobesystems.com

408-591-5001 (mobile)

.



Anaerobe Systems

The Oxygen-Free Specialists

15906 Concord Circle, Morgan Hill, CA 95037,



Mike Cox, CEO

Recognized leader in Anaerobe science and application for 40 years.

Numerous U.S. and foreign patents and applications.

Mike is a founding board member Anaerobe Society of the Americas, recipient of their Lifetime Achievement Award.

Co-author of the CLSI M56-A guideline “Principles and Procedures for Detection of Anaerobes in Clinical Specimens”

10+ years plant fermentation science, refinement and commercialization.

It all starts with understanding Sustainable Development

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

— World Commission on Environment and Development, Our Common Future (1987)



The Environmental Problem



Farmers, and Governments spend **hundreds of billions of dollars** annually to control and dispose of Ag Waste and Invasive Plants.

Greenhouse gases,
Land contamination
Environmentally challenging

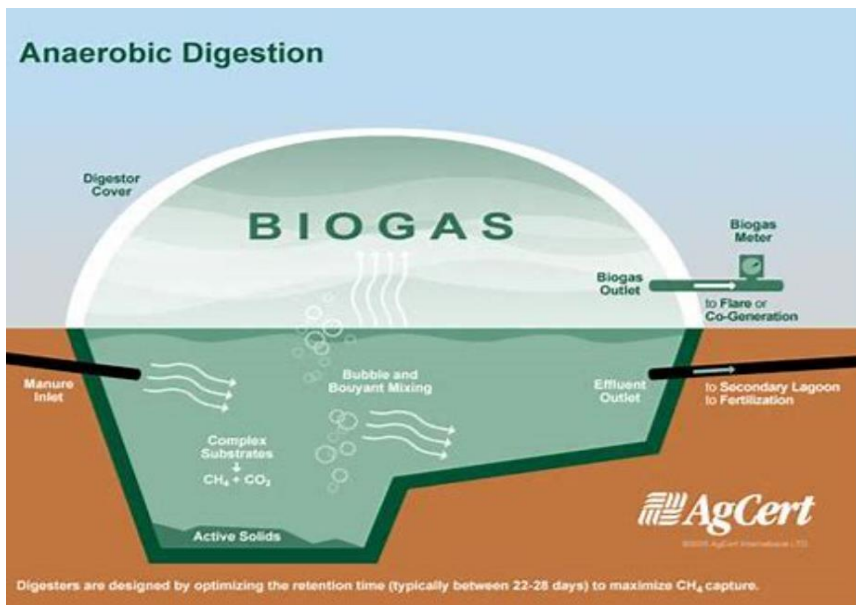


Cornell University researchers estimate invasive species cause \$120B damage in the United States each year.

Technology Problem



According to Flavin and Lenssen of the Worldwatch Institute , "If the contribution of biomass to the world energy economy is to grow, technological innovations will be needed, so that biomass can be converted to usable energy in ways that are more efficient, less polluting, and at least as economical as today's practices."



These process take weeks to months



Our Solution



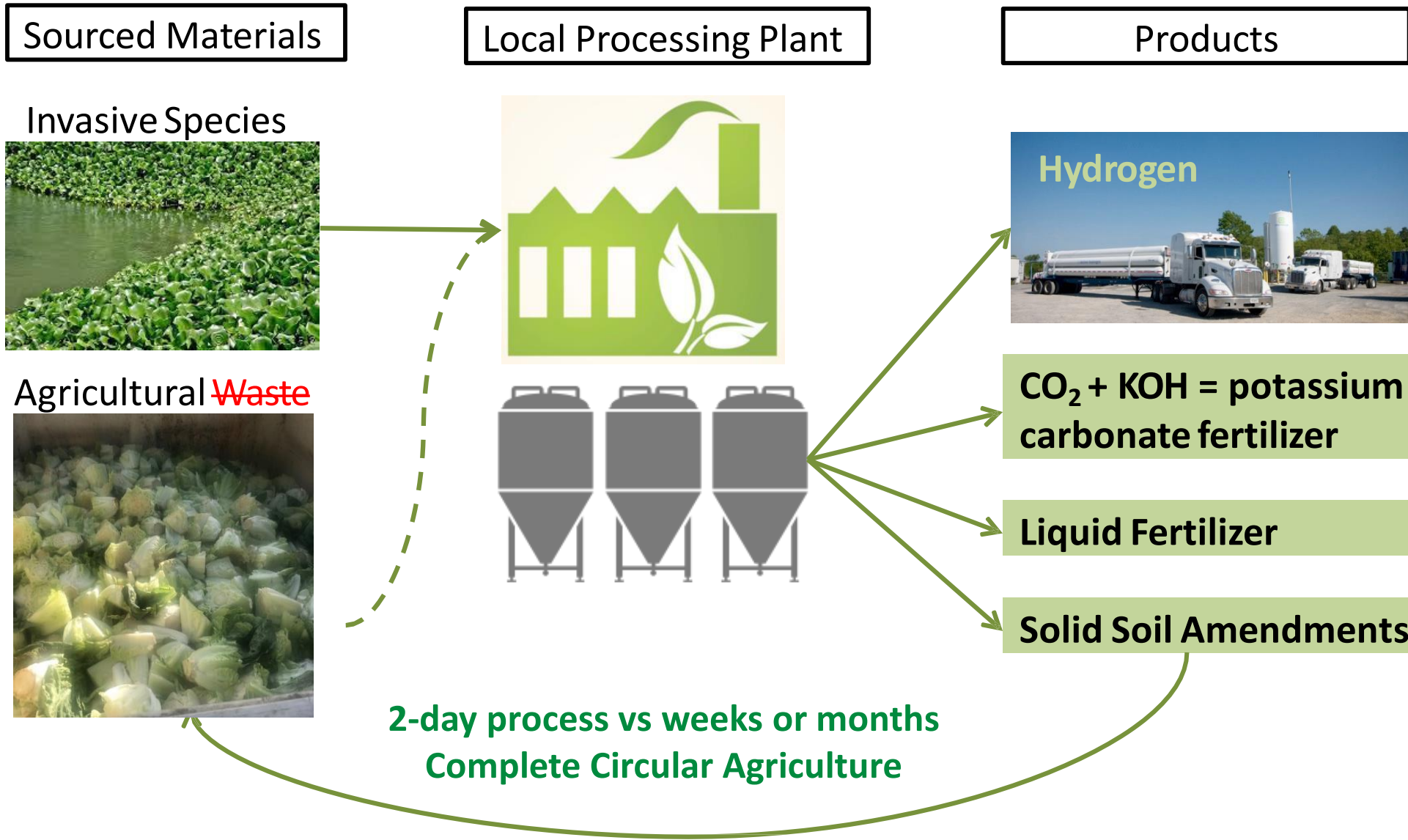
Plant Waste

is
now

Fuel Grade Produce

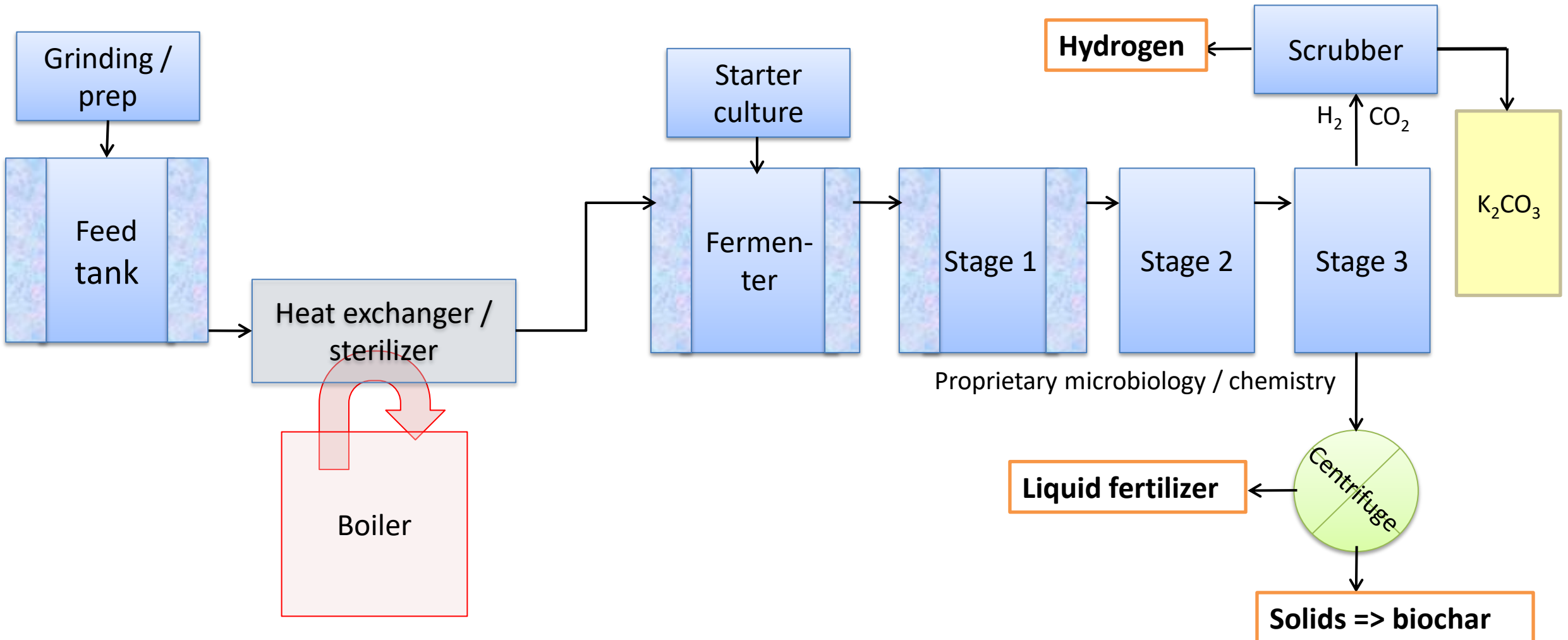
A new Commodity
for the Farmer





CAFS is Scalable, Adaptable, and Local

CAFS is Modular and Highly Configurable



A photograph of an industrial facility, likely a hydrogen production plant, featuring large stainless steel storage tanks and a complex network of pipes and structural steel. The scene is set outdoors under a clear blue sky.

Why Anaerobe Energy?

- Sustainable, scalable and exceptionally eco-friendly.
- We eliminate 100% of the GHG generated by current processes
- We produce “clean” Hydrogen; no additional processing
- We own the Patent for CAFS



Automated Operations



Fuel Grade Produce; example from Carrot processing



Full R&D Lab

Phase 1 (\$3M) Invested

Completed



June 2019

May 2020

Business Development

- \$2000 Revenue
- Validated customer needs
- Established key contacts:
 - Farms and Processing Plants
 - Government
 - Infrastructure

Product Development

- 1500 gal. system in operation
- Science and design validated.
- Upgraded to “like new”.
- CAFS Patent Issued.

Operations

- Anaerobe Systems Operational since 1978
- 5 Employees dedicated to Anaerobe Energy.

Carrot Pulp



Water Hyacinth



High Value
High Margin

We are not currently
capturing the Hydrogen



Phase 2 (Cost \$7.5M)

Strategic Plan

1. Secure \$7.5M private funding for a Sept 2020 start.
2. Build a 4000-gallon production system, demonstrate science and patent, generate revenue.
3. Help establish permitting specifications, metrics and requirements with local and state officials; get permitted.
4. Build value, validate business case.
5. Acquisition 3 – 5 years after funding (August 2020)

Total Revenue: \$24M - \$40M through 2024.



Our Partner in Design, Engineering and Construction

The Opportunity

Management and Disposal of Agriculture Waste and Invasive Plants

Utilizing Continuous Anaerobic Fermentation

Circular Agriculture

Delivering High Value Product to Farms, Consumers and Low Yield Land

Hydrogen Production

Network of Micro Refueling Stations; Large Scale Facilities

Carbon Credits

77,000
Farms
in Ca.

25.3M
Acres
in Ca.

2.048M
Farms
in US.

911M
Acres
in US.

The Opportunity

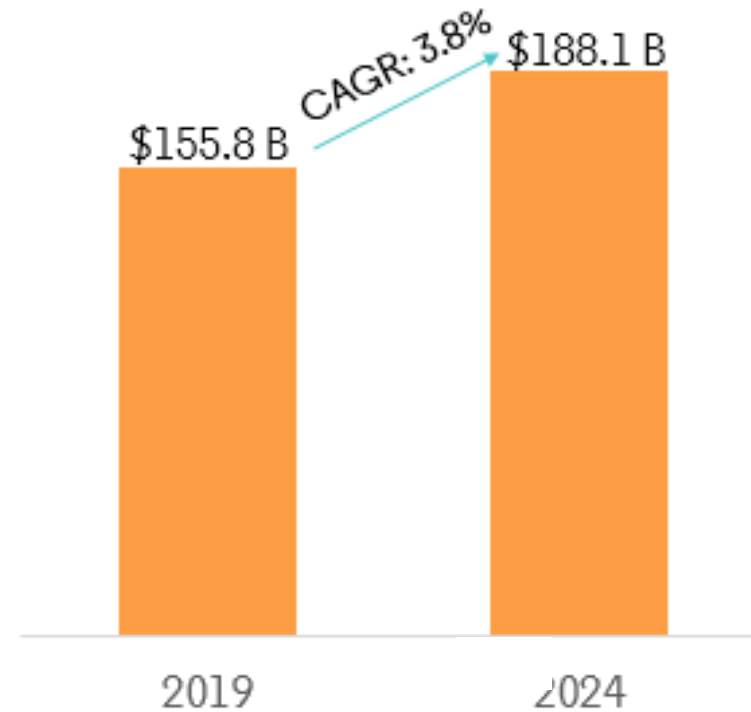
\$200B Ag Fertilizer Market

US Fertilizer

\$6.4Bn
By 2025



Global Fertilizer Market- Summary



Source: Mordor Intelligence

Soil Amendments

\$39.5Bn
By 2021



Growing Demand for Next Generation Organic Plant and Soil Food

\$130B Hydrogen Market (2017)



Create a Network of micro-hydrogen refueling stations

\$200Bn
by 2025
CAGR of 6.1%

FINANCIAL TIMES

Japan is betting future cars will use
hydrogen fuel cells

Honda and Toyota think the technology's superior energy density will triumph over batteries



Funding

We need \$7.5M to fund our 36-month plan to build a 4000-gallon Production CAFS and get acquired. This is the only funding necessary; no additional funding round is anticipated.

We believe this is a technology acquisition that can be executed in 3 years from funding. Our goal is to scale, continuing to demonstrate/validate the science and business case then sell, license, etc. the technology/patent to a large-scale buyer that has the resources to scale.

We believe State funding will validate the demand resulting in stronger Private Investment and is a very attractive option to:

- Meet the goals of CEC technical, environmental and financial.
- Rapidly bring sustainable technology to market that has a broad environmental and financial impact.
- Deliver short term ROI to investors.

We look forward to the opportunity to work with CEC and bring this technology to market.