

Lakeside Renewable
Energies Inc.
(LREI)
Presents
Innovative &
Proprietary

**Biomethane from Recycled Manure
Solutions**

**For the Biorefineries and Renewable
Fuels Industries**

**A Unique and Highly Secure
Investment Opportunity**



Lakeside Renewable Energies Inc.™

Lakeside Renewable Energies Inc. Duplin County, NC Biorefinery-1, Beulaville, NC Overview

- Substantially remodeled and available for immediate occupancy.
- Continuously occupied by one textile owner until vacated December 2017.
- “Clear space” throughout for optimal flexibility for equipment installation.
- New 20-year 60 mil TPO roof, LED lights with motion detectors, and all ceiling height impediments removed and updated new owner 2019-2020.
- Entire 34.32 acres is fenced with 10 Ft. high galvanized steel mesh fencing with visual and electronically monitored gate as single point of entry.
- LREI’s financial projections specified \$10 million for land and building.
- The current owner is asking \$4.5 million, a savings of \$5.5 million. There appear to be lease and purchase options.
- One or more additional biorefinery buildings can be constructed on the property.
- There are several parcels adjoining the property suitable for contiguous expansion.
- LREI’s management team has met with the Duplin County Commission, Beulaville’s Mayor, and town managers multiple times and has secured verbal commitments for much of the needed permitting.
- LREI enjoys an excellent working relationship with town and county management teams.
- LREI believes the property can be fully commercially operational within 12 months of acquisition.



Highlights:

BUILDING SIZE	243,337 SF	WALLS	Pre-cast concrete; Metal
ACREAGE	34.32	FLOORS	Concrete
OFFICE SPACE	2,500 SF	ROOF	BUR, Metal
CEILING HEIGHT	Mfg 17'-18"; Whse 20'-24'	WATER	Well - 12" city available
TRUCK DOORS	7 Dock High, 1 Drive-in	SEWER	Town of Beulaville
DIMENSIONS	460' x 480'	ELECTRIC	Duke/Progress 4,000 Amps 480/240V
BAY SPACING	30' x 30'; 30' x 40'; 40' x 40'	GAS	Propane
PARKING	200 Paved	HEAT	Electric
ZONING	M-1 Manufacturing	SPRINKLER	100% Wet
DATE AVAILABLE	Immediately	LIGHTING	Fluorescent, Metal Halide
LAST USE	Textile Mfg	A/C	90%
AGE	1968		
CONDITION	Excellent		



Lakeside Renewable Energies Inc. Duplin County Biorefinery-1 326 Lyman Road, Beulaville, NC



Aerial View

Potential LREI Beulaville
Biorefinery



Aerial View of Lyman Road property For Sale Adjacent to 326 Lyman Road

2 adjacent parcels • ±35.9 acres and ±18.3 across from 326 Lyman Road

Asking price • \$7,500 per acre = ±\$406,500

See Aerial Below

Duplin County

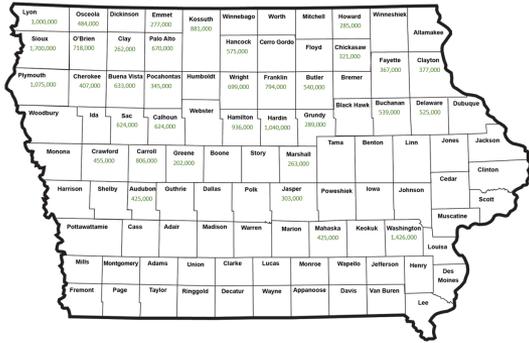
Geographic Information Systems



2020 Top 3 Hog Producing States

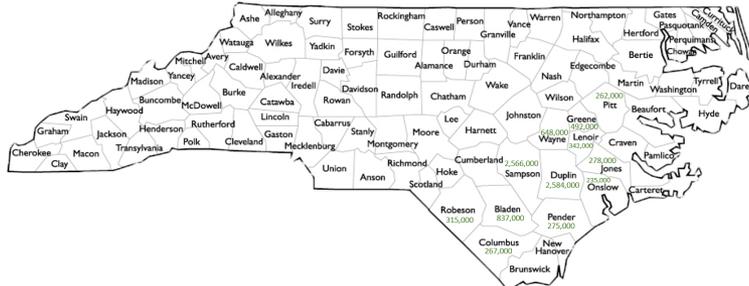
35 Iowa Counties in Top 100 Hog Producing US Counties

35% of Iowa 99 Counties Produced 87%, or 21,342,000 Hogs
 51 Plants Would Be Needed @ 30% penetration of the designated counties
 Annual Decatherm production first 4 years at 9.85 scf per lb.-VS = 25.6 million
 Annual Decatherm production first 4 years at 14.775 scf per lb.-VS = 28.5 million
 Annual Decatherm production first 4 years at 19.70 scf per lb.-VS = 100.6 million



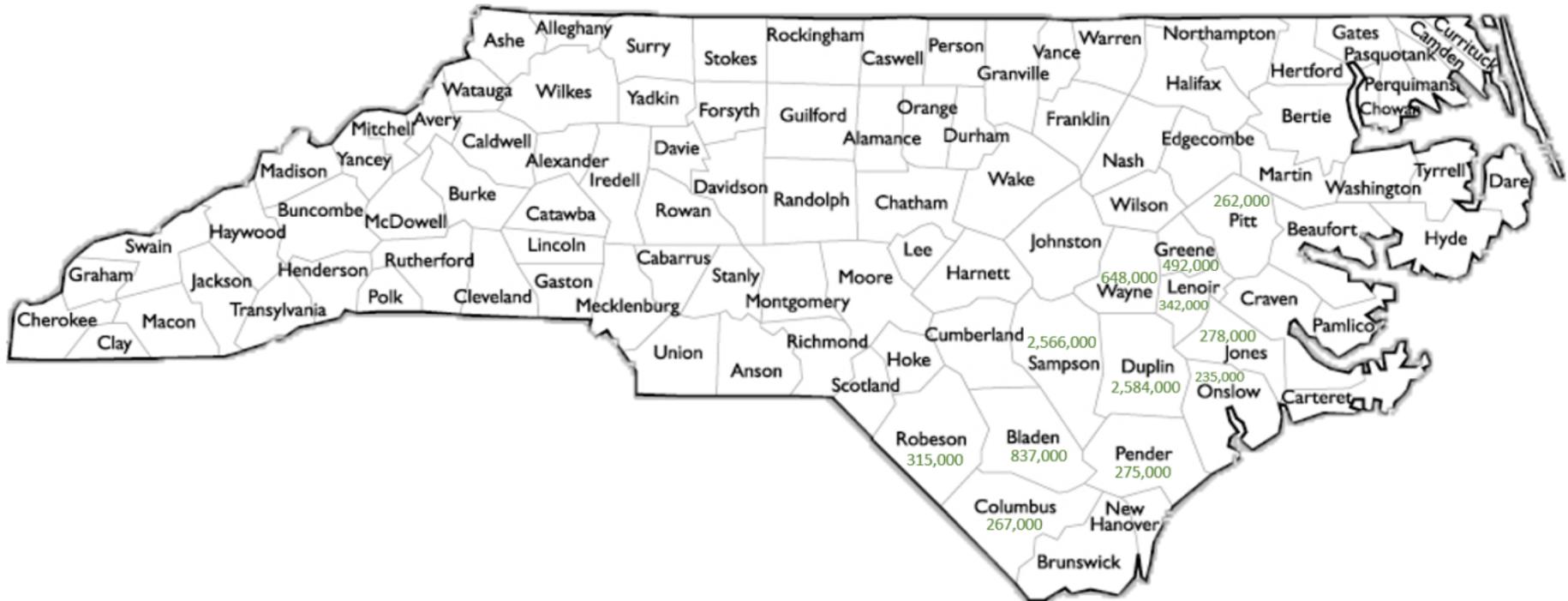
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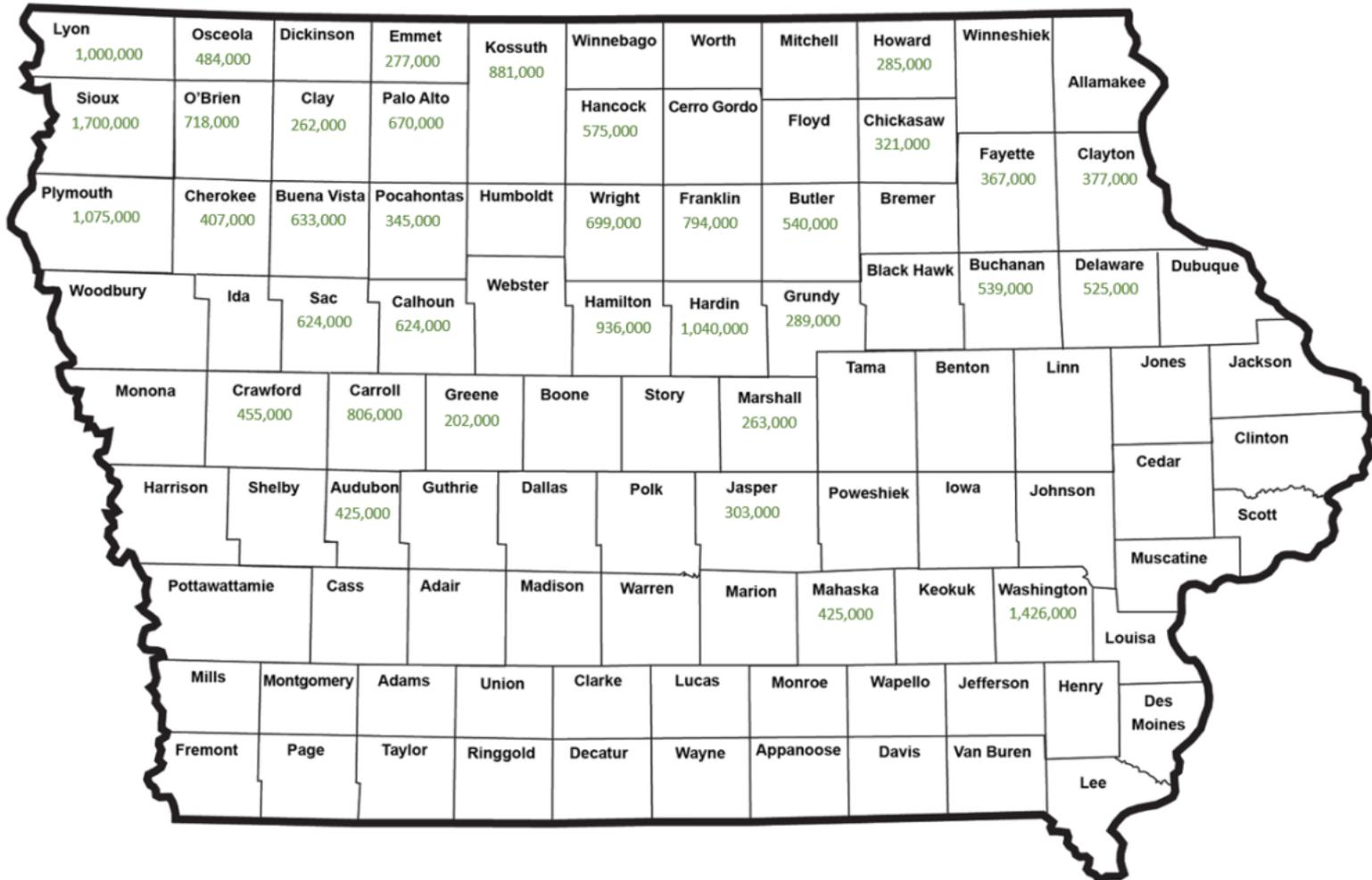
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16 Minnesota Counties in Top 100 Hog Producing US Counties

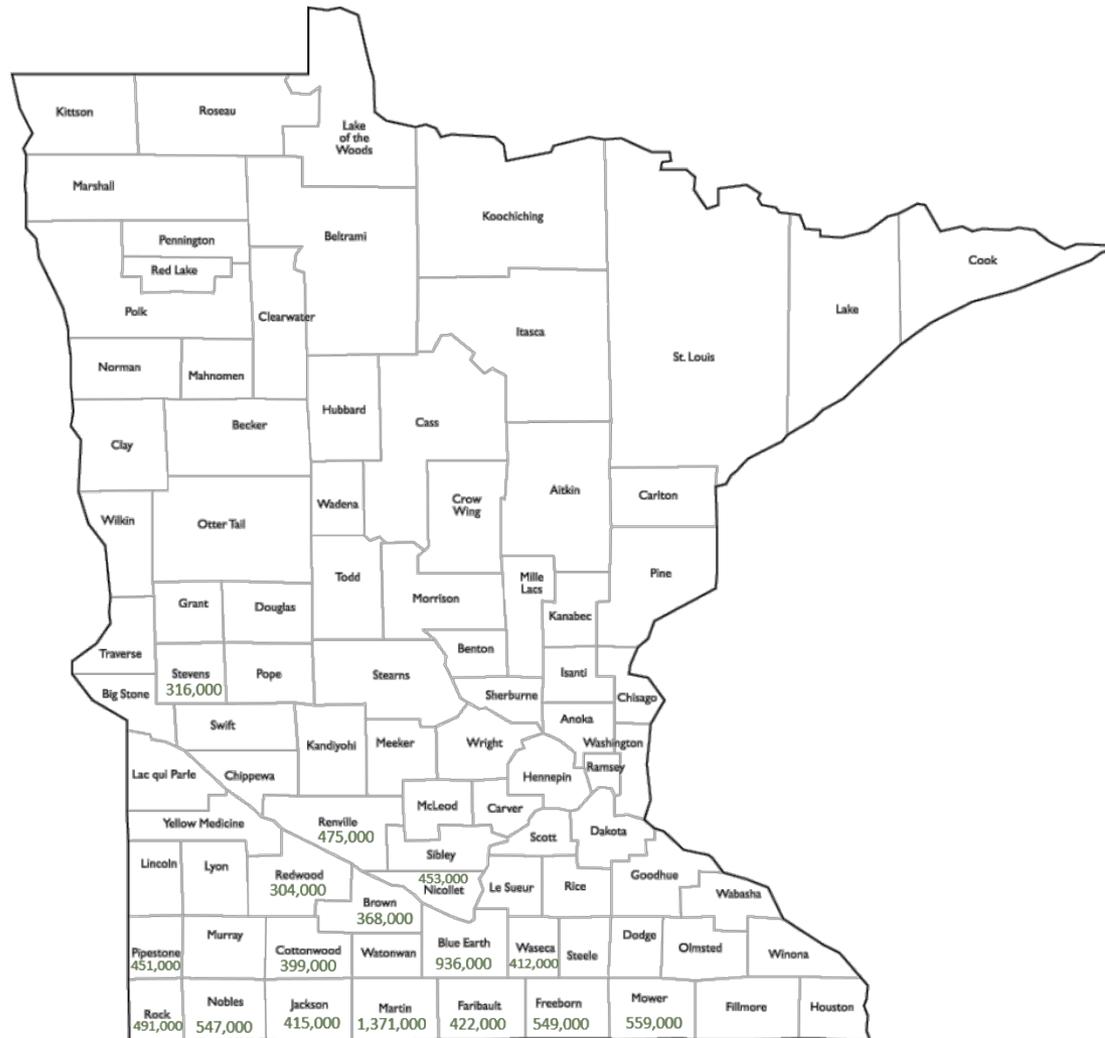
18% of Minnesota 87 Counties Produced 91%, or 8,468,000 Hogs

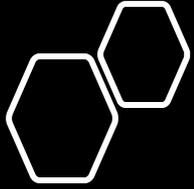
20 Plants Would Be Needed @ 30% penetration of the designated counties

Annual Decatherm production first 4 years at 9.85 scf per lb.-VS = 8.1 million

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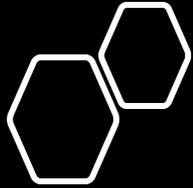




The Problems LREI Solves

There are three primary problems:

1. The failure to address the potential of livestock manure as a source of renewable energy
2. The inability to scale solutions that livestock waste (manure) represent to the fossil and renewable energy industries
3. Chronic serious environmental issues from livestock waste (manure)



The Solutions LREI Provides as a Benefit Corporation

- There are two primary solutions – **Financial** and **Environmental**
- 1. **Financial** – through renewable fuel from Recycled Manure Solutions:
 - LREI’s exponential production of biogas from renewable feedstock (i.e. Farm Livestock manure)
 - Scale – there are two types:
 - **Collection and Consolidation of Feedstock** sources through the removal of animal manure (feedstock) from multiple locations, farms and Concentrated Animal Feeding Operations (CAFOs)
 - **Offtake Agreements** - long term stable biomethane production based on manufacturing processes unique to the industry and finance processes founded upon the **preselling** of future biomethane production to “investment grade” global companies through multiple year contracts
 - **Employment** - Each **biorefinery** will employ approximately 130 employees. When the expansion process is completed in North Carolina, Iowa, and Minnesota LREI will employ more than 12,000 associates with a wide variety of skill sets and abilities.
 - **Our Biorefineries are far less costly and faster to commission** than traditional fossil fuel refineries while placing the highest priority on process safety, the health and safety of our workforce, the protection of communities, and improving the environment wherever our biorefineries are located.
- 2. **Environmental** – LREI’s proprietary manure removal system
 - Our breakthrough technologies and bio-energy efforts prioritize cost efficiently lowering carbon intensity.
 - Our technologies and proprietary processes significantly and permanently eliminate the chronic environmental problems caused the Farm Animal Waste.
 - Meaningful removal of livestock manure dramatically improves these chronic environmental problems while supporting federal and state government programs like the USDA’s REAP (Rural Energy for America Program) and B&I (Business & Industry).
 - Biorefineries across America, including USDA’s REAP and B&I programs, are co-sponsored by a myriad of state and local governmental departments, state run universities, and community colleges.

Solution One - Collection and Consolidation of Feedstock

- LREI's Duplin County Biorefinery will select from more than 760 farms and CAFOs containing more than 2.58+ million hogs raised within the County that annually produce more than 9 billion pounds of manure.

Solution Two - Environmental

- LREI will obtain a competition advantage by being the first biorefinery company to pay participating hog farms to remove ALL their manure, turning a costly and chronic environmental problem into a profit center while LREI eliminates the historically never-ending ecological problem.



Example only – LREI will have a fleet of manure extraction trucks using Renewable Natural Gas as fuel.

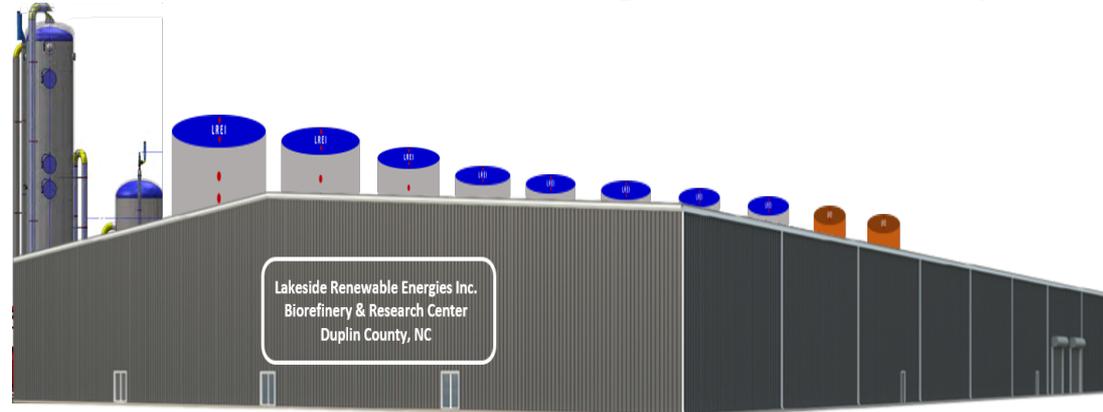
Product Differentiation

Covered Hog Farm Manure Lagoon

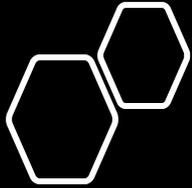


- The average covered lagoon produces less than one cubic foot of biogas per pound of fecal matter (called *volatile solids*).
- Uncovered lagoons produce even less biogas.
- Environmentally ambient temperatures inhibit biogas production.
- Anaerobic digestion is ineffective below 59° Fahrenheit.
- The average lagoon contains less than 100,000 gallons of waste.
- The average hog farm has less than 5,000 hogs.
- CAFOs (Concentrated Animal Feeding Operations) can contain more than 10,000 hogs.
- Covered lagoons are not frequently used because of the cost, maintenance, amount of available farm livestock, lagoon size, and area temperatures.
- NC has a moratorium on new lagoons for livestock due to chronic odor and environmental issues.
- Lagoons naturally expel methane, a Greenhouse Gas.

Lakeside Renewable Energies Inc. Biorefinery

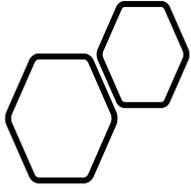


- Using readily available commercial anaerobic digester (ADs) systems each LREI facility will produce more approximately 12.0 cubic feet of biogas per pound of fecal matter (volatile solids).
- LREI's Biorefineries will each manure from 175,000 hogs a proprietary number of ADs using a patent pending and secret series of processes and additives.
- LREI's Duplin County Biorefinery will have the ability to collect, consolidate, and process manure from more than 760 farms and CAFOs containing more than 2.58 million hogs raised within the County.
- Each of LREI's anaerobic digesters will have proprietary controlled internal temperatures to optimize biogas production.
- LREI's Research Center is devoted to improving the yield of biomethane through proprietary processes and technologies.
- The facility will produce more than 940 decatherms of high quality biomethane each day of the year when it commences its Commercial Operations.
- America's federal and many state governments mandate "blending" use of renewable fuel sources with fossil fuel. Consequently, LREI has ready sources for the sale of its biomethane before production begins.
- LREI expects to execute a 10 Year long Offtake Agreement with the **International Company** (an NDA currently governs requested anonymity) which began early this year. Under the agreement most, if not all, of its biomethane production will be presold to BP America at varying prices and favorable terms throughout the Agreement's term.
- With this Offtake Agreement in place LREI will have US Dept. of Agriculture program parameters satisfied under § 7 CFR 4280.



Business Model – The Competitive Advantage

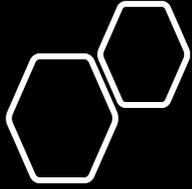
- LREI uses proprietary processes for the collection and consolidation of widespread local area farm livestock manure supplies (feedstock) to support the production of presold mandated renewable energy to well-known energy industry “investment grade” companies through long term guaranteed “offtake agreements”.
- LREI uses breakthrough patent pending and trade secret technologies it calls “Pre-Anaerobic Digestion Preparation and Injection Systems™.”
- The technologies systematically cultivate and inject proprietary organic additives (called Manure Fats™) into the digesters to significantly increase the production of biogas above proven global norms.



Competition

- The competition is America's rural area animal farms and CAFOs (Concentrated Animal Feeding Operations) with their random and poorly operated covered and uncovered lagoon programs.
- Hog farms in most states are found in sparsely populated rural areas.
- The lagoons, coupled with ambient outside temperatures, make the production of biogas difficult to conduct and almost impossible to be profitable since production requires enormous amounts of manure not found on even the largest operations.
- LREI's collection and transport to a centralized temperature controlled biorefining facility allows the farmers to accomplish two important solutions.
- First, manure waste is turned into a viable profit center since LREI will be one of the first entities to pay the farms for their manure, turning a chronic and troublesome cost center into an environmentally friendly profit center, producing the second solution.
- Second, the protracted environmental problems are resolved since all the odor is removed almost daily from participating farms and CAFOs.



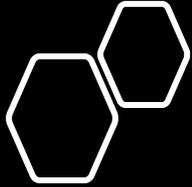


Underlying “MAGIC”

- Processes – two
 - The first process is the systematic removal and consolidation of farm animal waste starting with swine and expanding to poultry and dairy cows over time.
 - The second process is anaerobic digestion in temperature controlled large scale digesters to produce significantly more biogas than random attempts from outside ambient temperature covered or uncovered lagoon programs.
- Technologies - several
 - LREI uses proprietary patented and trade secret technologies exclusively licensed to it from their creator to substantially improve demonstrated commercially successful digestion of renewable feedstock needed to make biogas.

LREI Team

- LREI's senior management team brings more than a century of "C" level management experience, technical expertise in a variety of manufacturing and service industries, operational management experience including a myriad of well-known manufacturing and service industry sectors, farming, land development, and construction.
- Their extensive business bios are available upon request.
- The opportunity is so large that the LREI's management team believes it is prudent, and necessary, to seek both Animal Farm and Biofuel/Biorefinery expertise from well known and globally respected outside sources.
- *These include securing long-term contracts with industry and academic leaders bolstered by the following entities.*
 - **Black & Veatch Corporation** is the nation's largest engineering and construction company with global expertise in biorefinery design, engineering and construction. B&V is LREI's contracted "owner engineer." Since signing its agreement B&V completed the following studies and reached the following conclusions:
 - Bioogas/Biomethane Mass and Balance Study
 - Duplin County Hog Waste Biorefinery Feasibility Design Report – defining how the facility can be successfully commissioned according to the USDA 7 CFR 4280 guidelines, including Plant Engineering, Project Cost Estimates, Design Basis Memorandum, Process Flow Diagrams, Permitting Matrix, and many other initiatives
 - LREI should exceed the global norms for creating biomethane from livestock manure, i.e. biomass.
 - **Ecoengineers LLC** is the nation's largest Q-RINs verifier with more than 1.1 billion Q-RINs verified in 2018. It is the USEPA's authorized biofuel auditor with audits of more than 165 biofuel plants in 20 countries.
 - Ecoengineers was contracted by LREI in its successful application for D3-RIN certification from the USEPA using the EPA's required Pathway Screening Tool.
 - Ecoengineers recently completed a Carbon Intensity Score Analysis at the request of **International Company** and LREI that led to the decision by the Company to offer a 10-year term Offtake Agreement for the purchase of all Decatherms each day of LREI's biomethane production.
 - Ecoengineers also recently agreed to provide a large domestic based global energy giant (in the top seven of the world's largest fossil fuel oil refining companies) in its search to invest in and purchase biofuels from qualified growth companies. Ecoengineers placed LREI at to very top of the biorefinery opportunities in the US and abroad.
 - **International Company** is in the top seven of the world's largest fossil fuel oil refining companies. It is headquartered in Europe. As of 12/31/2018 it had operations in nearly 80 countries worldwide. This **International Company** and LREI are in active negotiations for LREI's first offtake agreement contract.
 - **US Domestic Company** is also one of the top seven oil and gas "super majors" in the world measured by 2018 revenues. **This Domestic Company** and LREI are in active negotiations for an Indicative Offer that will lead to its second offtake agreement contract and potential investment.
 - University of Missouri Department of Agriculture, Food, and Natural Resources (which conducted and successfully concluded LREI's bench research for two of its technologies)
 - North Carolina State University Department of Agricultural and Human Sciences
 - **USDA, EPA**, state and local officials responsible for germane animal farming operations, grant programs, land use permitting
 - and other disciplines to be determined.



Go To Market Strategies

- LREI's "Go To Market" strategies are two and they are clearly defined. Both markets are huge and geographically specific.
 - Manure Intake Agreements (feedstock)
 - Intake Feedstock – Livestock farming in the US is concentrated and is clearly confined to several states.
 - Intake Agreements will be multi-year contracts with farms and CAFOs for every LREI facility.
 - Biofuel OFFTAKE Agreements
 - Offtake agreements are industry "norms" for projects like LREI's program.
 - The energy sectors in the US, and in most of the developed countries, have mandated, and growing needs, to supplement fossil fuel from an increasing number of renewable fuel sources.
 - Livestock waste is the least addressed and has the most upside potential of almost all sources of renewable biofuels.

LREI Traction

- LREI is in active negotiations with the senior management of the Strategic Development, Global Environmental Products Division of the International Company specified in this document for a 10-year long Offtake Agreement for most, if not all, of its decade's long-production in its first NC facility.

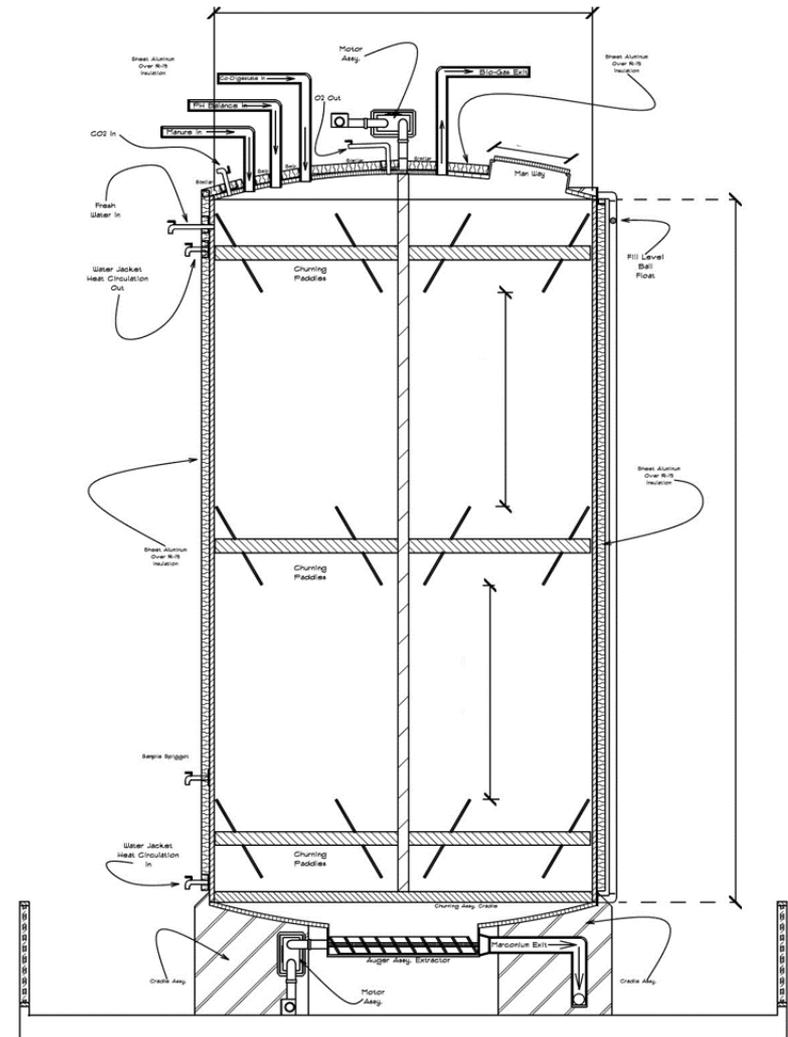


LREI's Digester Internal Functions and Biogas Creation

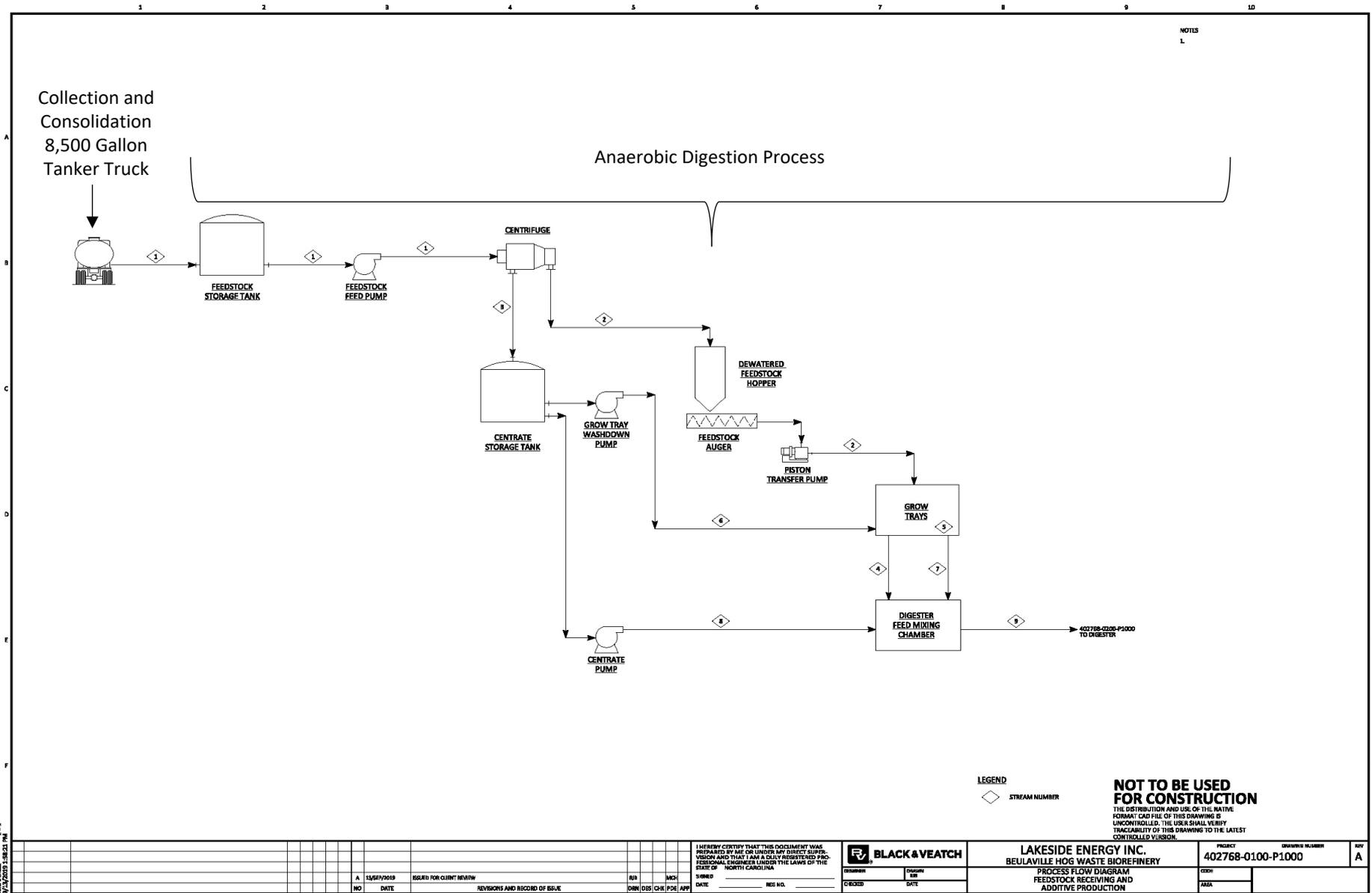
LREI's Anaerobic Digester Processes

- Black & Veatch confirmed that accepted global yields of 6.8 cubic feet of biogas per pound of biomass feedstock, including animal manure, are the norm.
- Black & Veatch also confirmed in a published report to LREI that its [proprietary processes](#) could substantially increase biogas production.
- The anaerobic digestion process (diagram) uses heat and agitation (movement) to create the biogas.
- LREI has [proprietary processes](#) that augment the biogas production process creating substantially larger yield numbers than the base line 12.0 cubic feet per pound of Volatile Solids (manure fecal matter)
- [Financial projections are based on 12.0 cubic feet of biogas.](#)
- The patented and trade secret processes create a true **Market Advantage** produced by combinations of controlled temperatures and proprietary organic additives.
- The Company's trademark name for these additives is Manure Fats™.
- Manure Fats™ injected into the anaerobic (oxygen free) digesters to enhance the digestion process.
- [Manure Fats™ "co-digestion" system multiplies LREI's biogas production yields](#) and will increase the revenue generated based on these higher yields. Financial projections are based on production at 12.0 as the base level.
- LREI will introduce this proprietary process starting in Year 1 all digesters utilizing the LREI proprietary processes.

LREI's Anaerobic Digester Functionalities



LREI's Anaerobic Digestion Process Prepared by Black & Veatch



MicroStation V8i(11.0) 8/28/2019 11:11:11 AM
 User: JAC
 Project: 402768-0100-P1000

NO	DATE	ISSUED FOR CLIENT REVIEW	REVISIONS AND RECORD OF ISSUE	APP	CHK	PDE	APP
A	11/26/2019	ISSUED FOR CLIENT REVIEW					

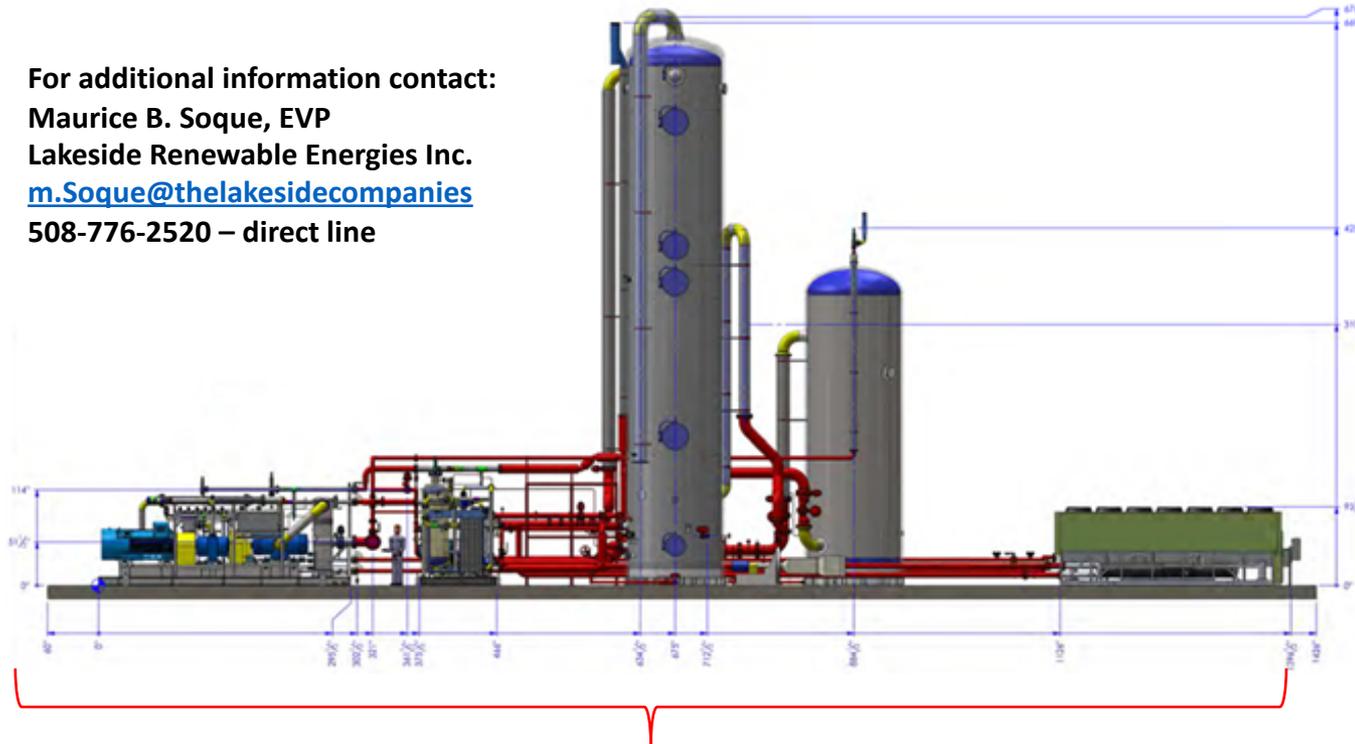
DESIGNED	DATE	CHECKED	DATE

BLACK & VEATCH A WORTHINGTON COMPANY		LAKESIDE ENERGY INC. BEULAVILLE HOG WASTE BIOREFINERY	PROJECT 402768-0100-P1000	SHEET NUMBER 402768-0100-P1000	REV A
PROCESS FLOW DIAGRAM FEEDSTOCK RECEIVING AND ADDITIVE PRODUCTION		AREA	CODE	DATE	DRAWN

Dimensions – Guild Associates or Greenlane Biogas Upgrading System

The Final Production Process

Vertical View

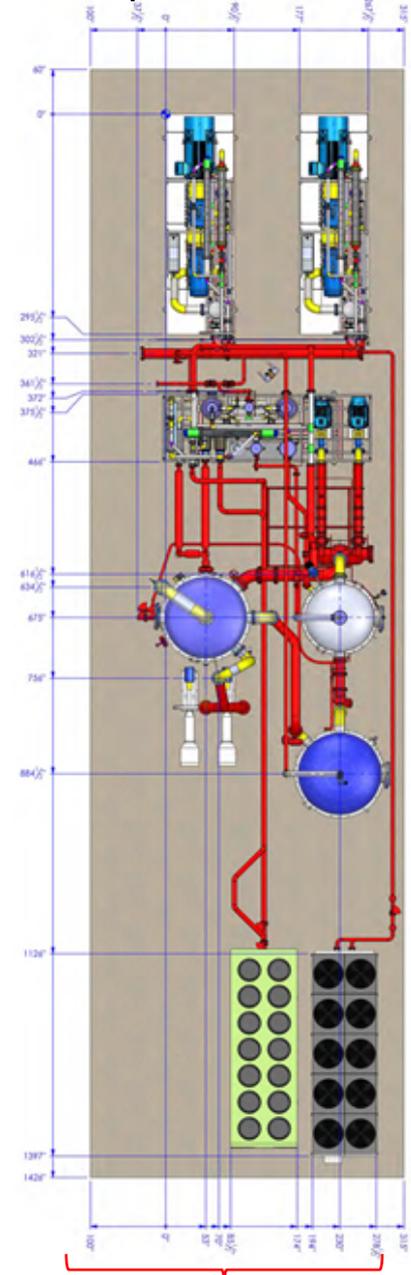


Pad Length – 57 ft.

For additional information contact:
Maurice B. Soque, EVP
Lakeside Renewable Energies Inc.
m.Soque@thelakesidecompanies
508-776-2520 – direct line

- The biomethane is further refined through an “Upgrading System,” called a “scrubber,” that removes impurities converting it to quality “pipeline ready” Renewable Natural Gas (RNG).
- Black & Veatch has indicated that LREI’s RNG should far exceed the minimum Btu heat criteria of 983 Btu on the Wobbe Index and may be as high as 1,300 Btu.
- LREI will one of these two fine internationally known companies.

Top down View



Pad Width – 27 ft.