



**“Advanced Waste Conversion Technology, which through
Collaboration, provides Alternative Solutions to
Environmental Restoration and Resiliency Goals”**

www.stonebridgesustainabilityinc.com

www.goldsealindustries.com

Biomass Project

**Sacramento, California
100 Tons Per Day**

Wood-Biomass



Energy Conservation

1 ton (Wood Biomass) = 1 barrel of crude oil in Energy



Logs



Thinning Piles



Saw Mill



Wood Chips



Bark



Sacramento, CA Area

- The Sacramento Municipal Utility District (SMUD) is soliciting your interest in the implementation of a Biomass Gasification project for CHP application in Sacramento, California.
- Response to the RSOI: identify a qualified and experienced project developer that will implement a Biomass Gasification project for CHP application in partnership with SMUD and the project site host. The developer will finance, design, build, own, and operate the project under SMUD's grant disbursement and power purchase agreement (PPA) requirements.

DEMONSTRATION PROJECT OVERVIEW

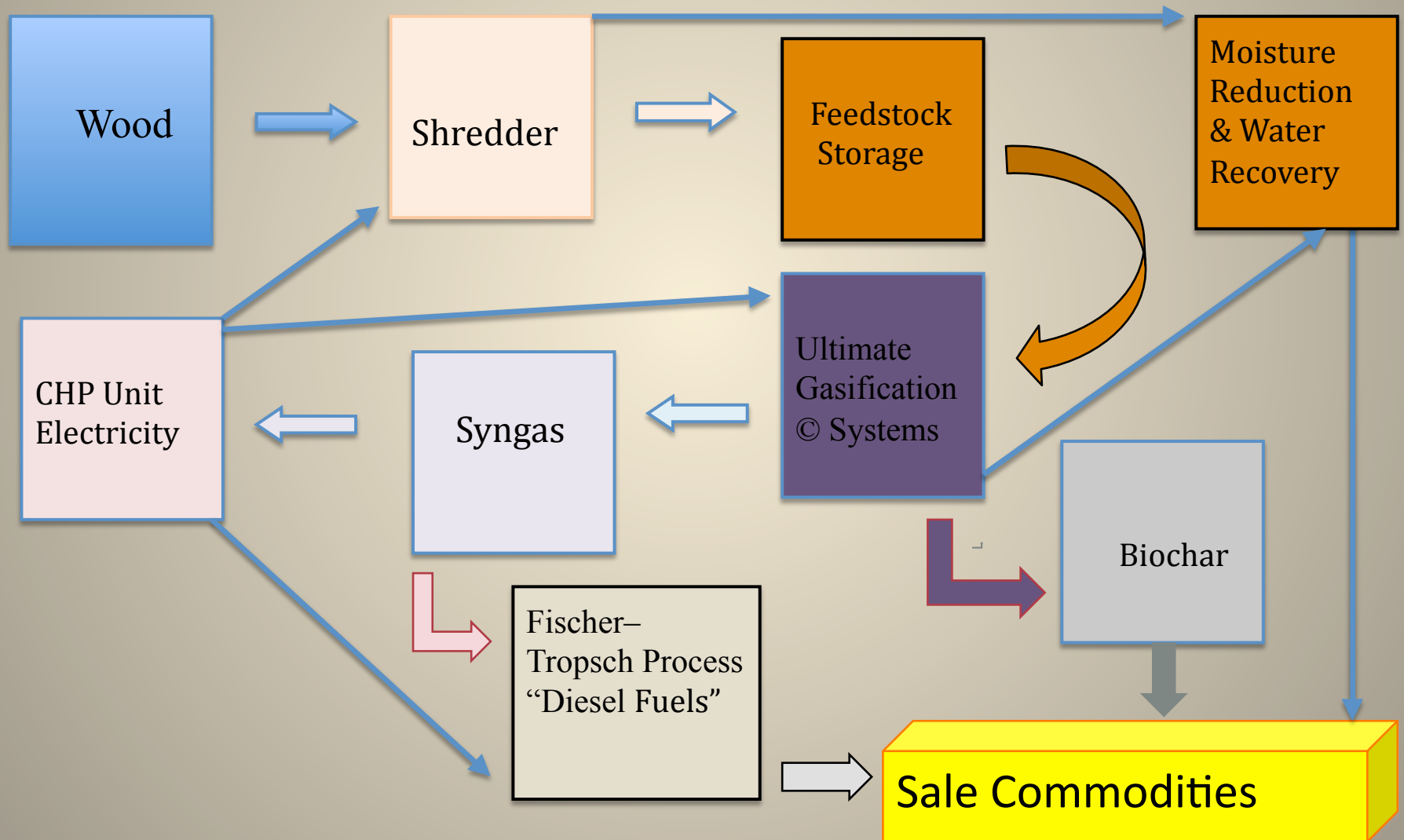
Proposal Prepared For: Feedstock: 100 Tons Per Day of Wood Biomass
System Supplier:

Gold Seal Industries, LLC Las Vegas, Nevada

Demonstration Project Description:

Gold Seal Industries will transport a portable plant from Las Vegas, Nevada to process 100 tons of Wood Biomass per day in or near Sacramento, California. Gold Seal Industries will process 100 tons per day of usable material after inert material is factored out. Gold Seal Industries assumes a 70% (bone dry) usable rate for incoming biomass. The water and Biochar will be recycled for land reclamation.

Simple Flow Chart



The Technology

Ultimate Gasification[®] Systems

- Electromagnetic Induction Heating superheats coal in a vacuum to extract gas from material, also known as Syngas. The gas is hydrogen-rich and contains ultra-low sulfur, with zero air emissions.

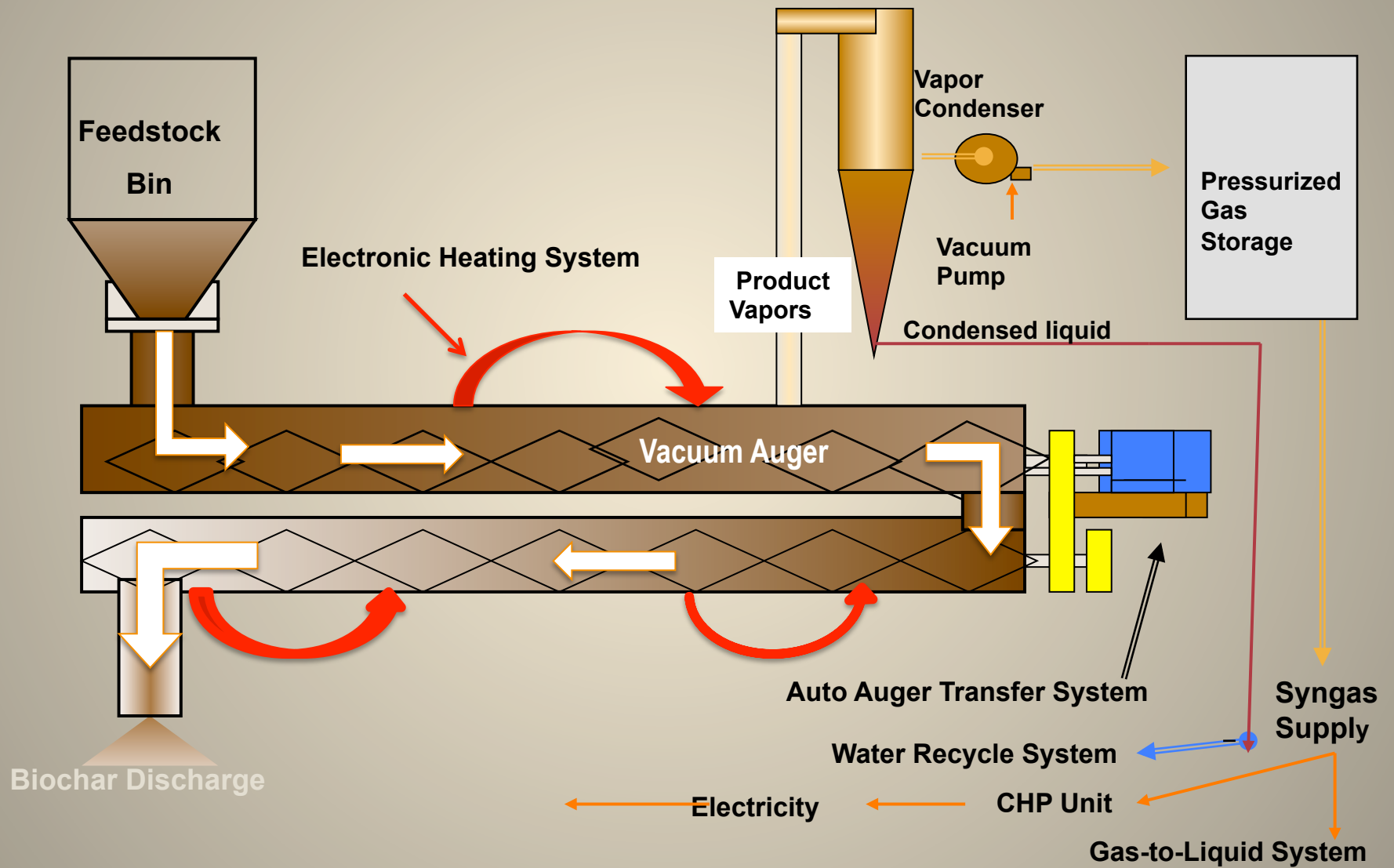
Synthetic gas will be used to:

- Cogeneration Power Plants (CHP) and fuel cells to produce electricity, hot water and steam
- Create liquid Biofuels, Synthetic diesel fuel, via a Fischer-Tropsch refiner.

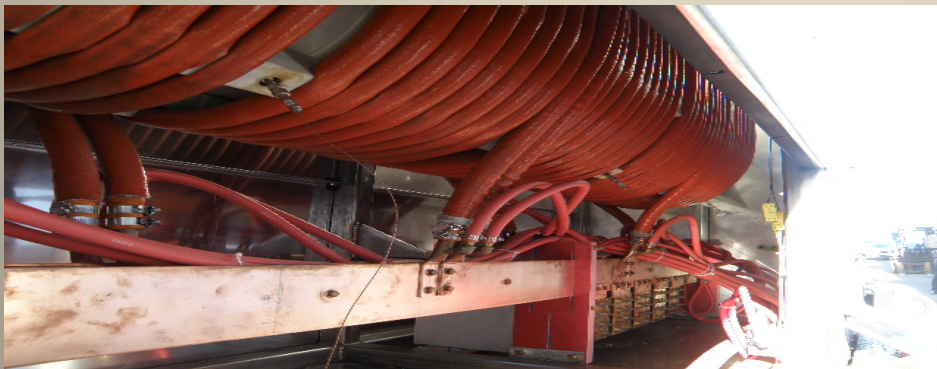
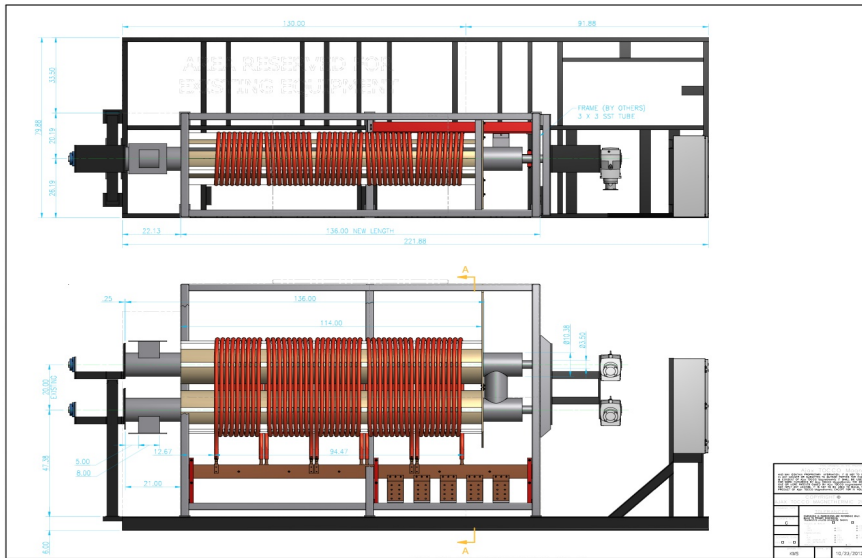


“Zero Air Emissions”

Simple System Diagram



Electromagnetic Induction Heating



Project “Proven” Concepts

Gold Seal Industries creates, designs, engineers and assembles its own proprietary equipment* and systems* that are manufactured by companies recognized around the world for their proven technologies.

Redundancy provides for multiple interchangeable components that can perform a common function as well as backup systems that perform a common function in the event of failure, mishap, or change in operational conditions.

Each of our waste-to-energy plants will create U.S. Jobs, and our equipment will be stamped “MADE IN THE U.S.A.”

*** Equipment and systems are under legal review for U.S. Patent Pending**



Strategic Partners



Rockwell International

FMC Technologies



Ajax
Magnethermic



TOCCO

Rockwell
Automation

HAYNES
International



Franklin Fueling Systems
Solutions You Can Trust

IBM



Microsoft

FMC Technologies Inc. (NYSE: FTI)



Celebrating
126 Years



FMC Technologies, Inc. (Link-Belt®) manufactures the Gold Seal Industries Screw Conveyor Components from Corrosion-Resistant & High-Temperature Alloys Produced by Haynes International, Inc.

HAYNES INTERNATIONAL, INC

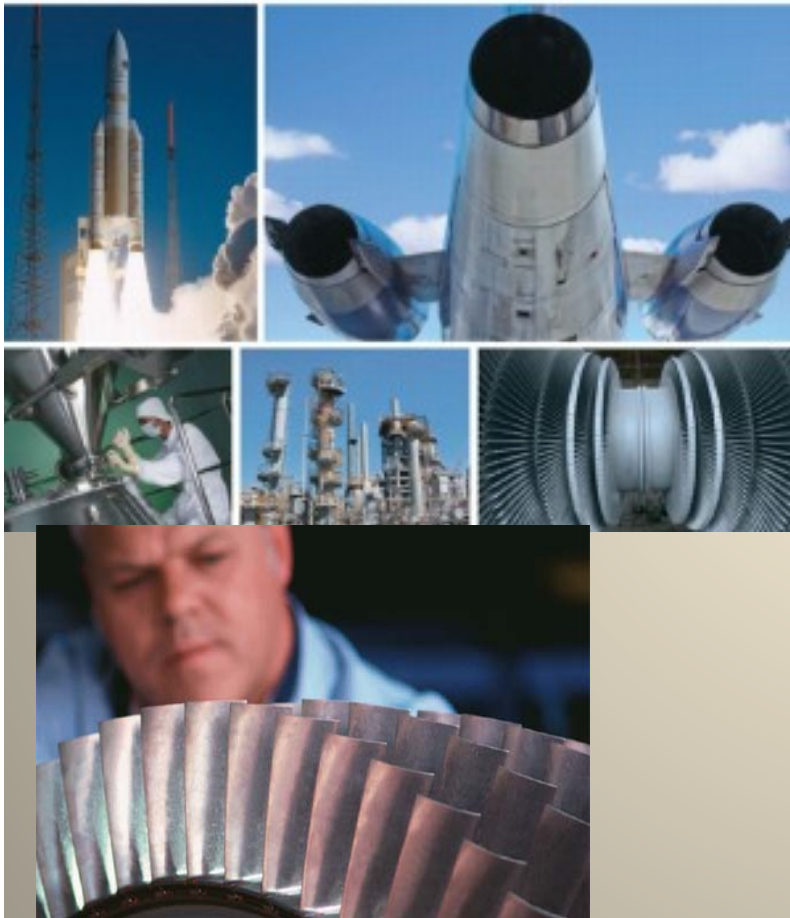
HAYNES
International

**Celebrating
102 Years**

Haynes International, Inc.
NASDAQ: HAYN



Haynes International, Inc., headquartered in Kokomo, Indiana, USA, is a leading developer, manufacturer and marketer of high-performance nickel- and cobalt-based alloys used in corrosion and high-temperature applications.





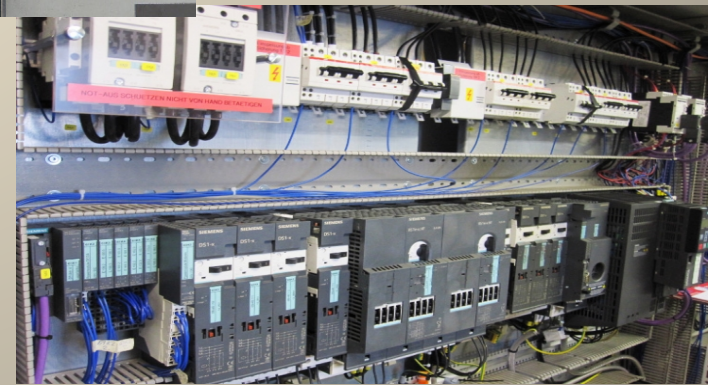
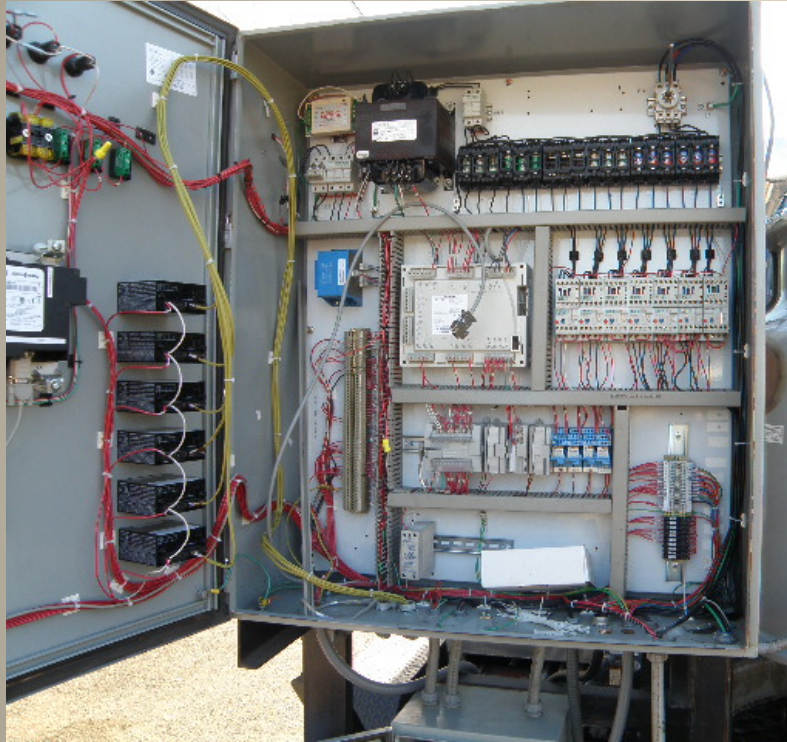
PKOH: Nasdaq



Celebrating
101 Years



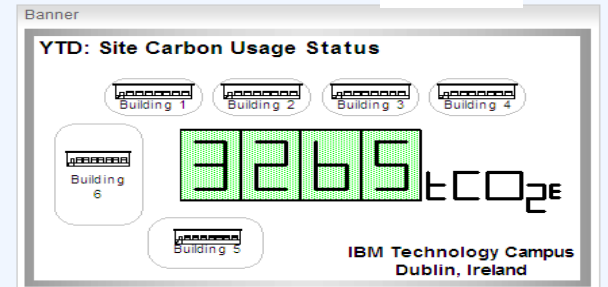
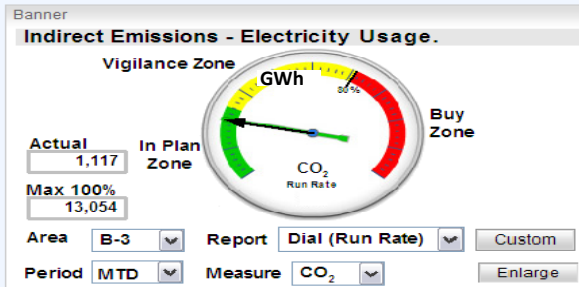
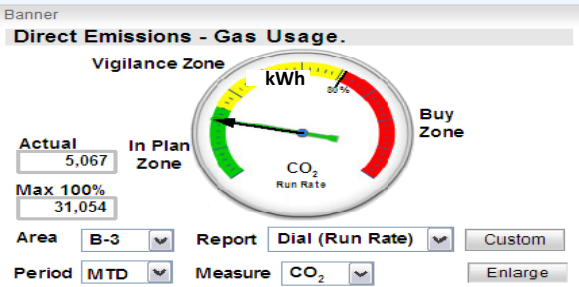
Electronic System



IBM & Microsoft Systems

Celebrating 103 Years

Banner



Banner

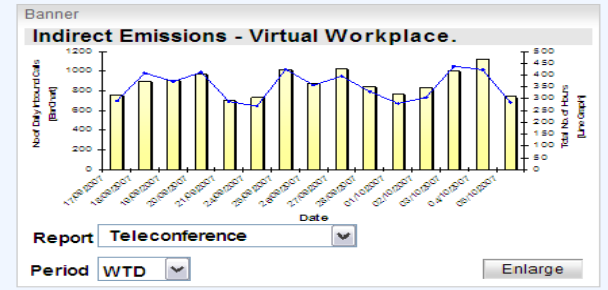
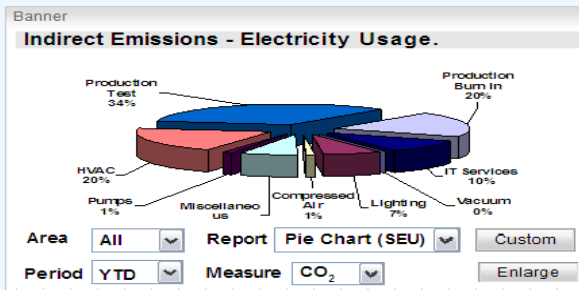
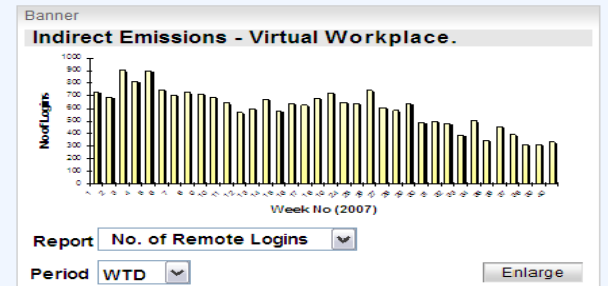
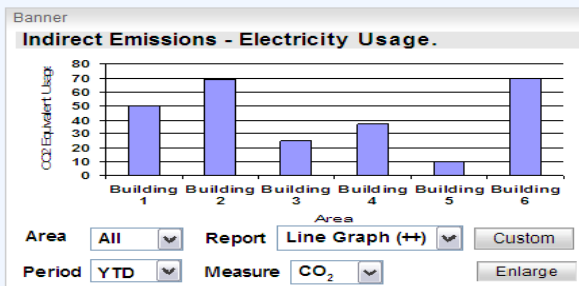
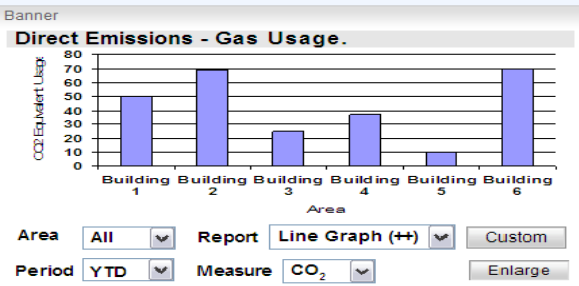
Direct Emissions

Banner

Indirect Emissions

Banner

Virtual Workplace



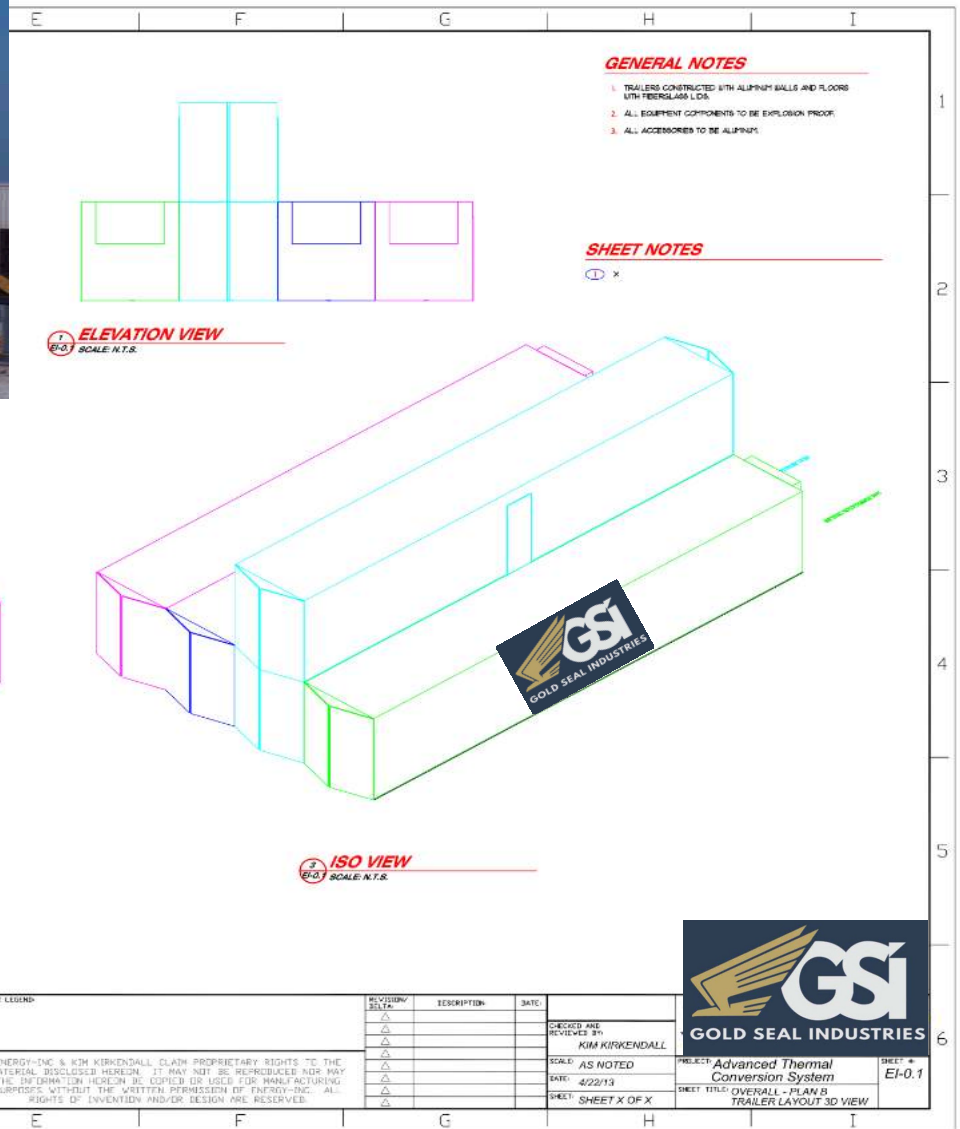
Modular Equipment

- Unique manufacturing makes the equipment scalable to fit any size project
- All equipment is installed and can operate within a 53' ISO container
- Can be used as the building blocks for a waste to energy facility
- Easily transported via: Tractor Trailer, Rail, Ship, Barge, Air Cargo and Helicopter
- Marketing and advertising opportunities on the side of the containers
- Military applications for ships, bases and battlefield
- Aid in emergencies and disaster, provides:
 - Waste clean-up, Recycling
 - Electricity
 - Gas and Fuels
 - Recycled water
 - Hot water and/or steam



ISO - International Organization for Standardization

Stackable Units



Wabash National Corporation (NYSE: WNC)

Container Manufacture
Celebrating 29 Years



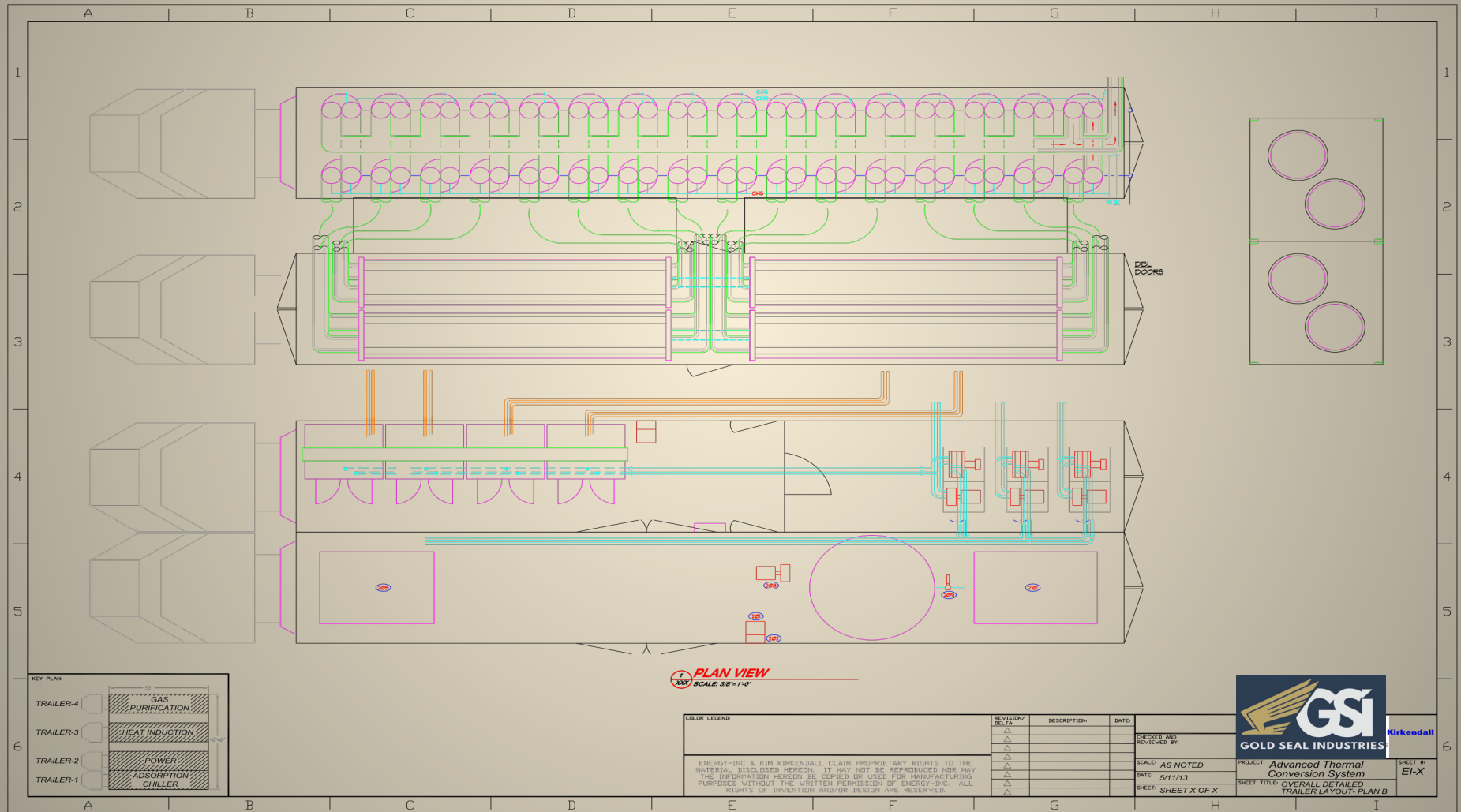
Lafayette, Indiana



Manufacturing Assembly Line



Layout of Units



Syngas/Fueling Systems



Celebrating 26 Years



A complete line of petroleum equipment including Submersible Pumping Systems, Piping & Containment Systems, Service Station Hardware, Dispensing Systems, Fuel Management Systems and Transport Systems.



Wood Biomass to Fuel Project



Feedstock Storage Units



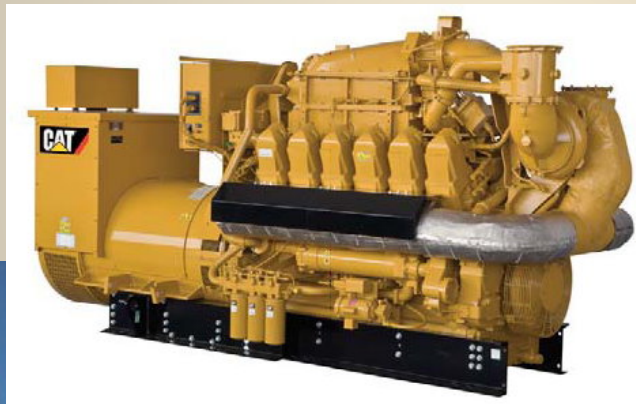
Feedstock System



Combined Heat and Power (CHP)

GE Jenbacher and/or Caterpillar CHP

These units produce Electricity and Hot Water.



Gas-To-Liquids

Fischer-Tropsch Units




ROCKWELL AUTOMATION / PROSCON

The PlantPax™ process automation system



National Renewable Energy Lab



NATIONAL RENEWABLE ENERGY LABORATORY

NREL HOME

ABOUT NREL | ENERGY ANALYSIS | SCIENCE & TECHNOLOGY | TECHNOLOGY TRANSFER | APPLYING TECHNOLOGIES

Advanced Vehicles & Fuels Research

Nonpetroleum Based Fuels

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- Nonpetroleum Based Fuels Home
- About the Project
- Research & Development
 - Biodiesel & Renewable Diesel
 - Gas-to-Liquid Fuels
 - Gaseous Fuels
 - Advanced Fuels
 - Laboratory Capabilities
- Publications & Presentations
- Working with Us
- Data & Resources

Gas-to-Liquid Fuels

Interest in gas-to-liquid (GTL) or Fischer-Tropsch diesel (F-T) fuels has increased in recent years because of their potential to displace imported petroleum. GTL fuels are created when gaseous fuels such as natural gas or biogas are converted to liquid fuels that can be refined into gasoline and diesel.

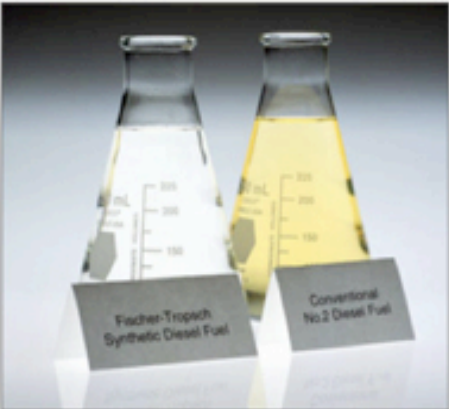
Typical GTL diesel fuels have near zero sulfur and aromatic content and very high cetane numbers. GTL diesel fuels have been shown to reduce regulated exhaust emissions from a variety of diesel engines and vehicles. Additionally, the near zero sulfur content of these fuels can enable advanced emission control devices.

Research at NREL centers on increasing the use of these fuels and reducing barriers to commercialization.

Gas-to-Liquid Diesel R&D

GTL Diesel Fuel Demonstration and Emission Study

NREL has partnered with the [South Coast Air Quality Management District \(SCAQMD\)](#) and other corporate partners to quantify the impact of GTL diesel fuel on a heavy-duty fleet combined with diesel particle filters. The impact of these technologies has been assessed through two rounds of chassis emission testing and an operability study. Results of this study are being compiled and will be published soon.

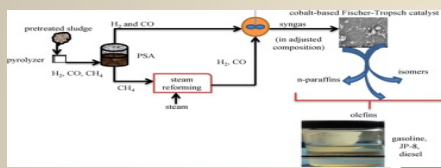
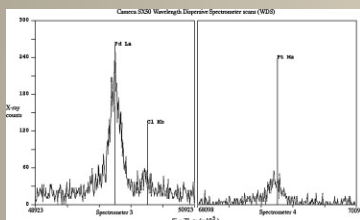


Laboratory System

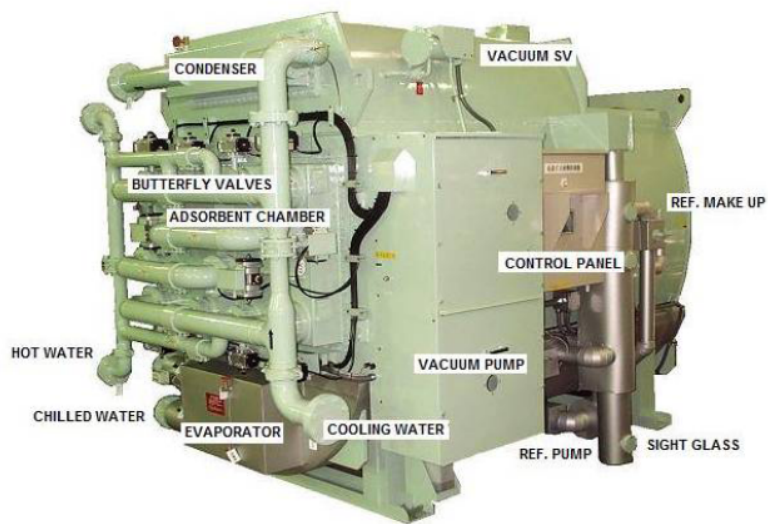
Research & Development Center
Las Vegas, Nevada

QUALITY, TESTING & STANDARDS

Eliasu A. Teiseh, Ph.D. – Biomass to Liquid Conversion,



Adsorption Chiller Components



Wood Biomass to Fuel Project



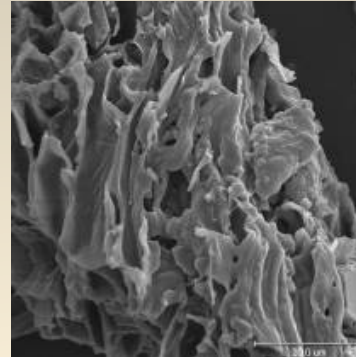
Biochar

Biochar is a natural by-product of the Ultimate Gasification© process.

Biochar is also used as a blacking agent for many industries, commodity applications for carbon char across many different disciplines including:

Biotechnology Increased crop productivity and soil enrichment The benefits of mixing the char in with soil are well known, as a highly effective and organic means for binding nitrogen which helps plants to thrive

Environmental sciences Carbon sequestration
Nanotechnology Carbon fiber



Water Recovery



Parker Hannifin Corporation (NYSE: PH)

Nearly 100 years



Standards

Energy-from-Coal technology is developed to meet the standards of:

- **ASTM Standards and Test Methods**
- **Critical Safety Controls Systems**



PROJECT OVERVIEW

Proposal Prepared For: Feedstock: 100 to 1,000 Tons Per Day of Wood Biomass **System Supplier:**

Gold Seal Industries, LLC Las Vegas, Nevada

Project Description: Phase II

Gold Seal Industries will construct a Plant to process 100+ tons of Wood Biomass per day in or near Sacramento, California.

Gold Seal Industries will commission a system that processes 100+ tons per day of usable material after inert material is factored out. Gold Seal Industries assumes a 70% (bone dry) usable rate for incoming biomass. The inert material and Biochar will be recycled and sold for land reclamation. Gold Seal Industries units will operate 7 days per week for a minimum of 351 days per year.

Annual Input/Output

- Wood Biomass Feedstock – 255,353 usable tons per year (340,470 total tons)
- Bio- Diesel Produced – 5,389,542 gallons per year (15,439 gallons per operational day)
- **Annual Revenue Projections:**
- Sale of Bio-Diesel - \$15,368,626.00 based on \$3.00 per gallon price. Initial forecasts indicate that producing Bio-Diesel will yield the best return. Local diesel distributors, indicate the Bio-Diesel can be sold wholesale for \$2.80-\$3.20 per gallon.
- An exact location for the waste-to-energy facility has not been chosen. Gold Seal Industries will select a Contractor for the building.

Startup Phase II

- Gold Seal Industries will secure all of the necessary permits to operate the system at the proposed site
- Building Permit is issued to Gold Seal Industries, will break ground on the building that will house the Biomass-to-Fuel System.
- At the same time manufacturing of the equipment will begin. Manufacturing estimates indicate 10-12 months for completion and delivery of the phase one equipment.
- Financial forecasts indicate a positive cash flow within 1 year.

Commercial Mixed Use (Wood Biomass)

- **Input** Tons/Day Tons/Year 970 340,470
- Moisture, Biochar, 25%
- Net or Useable Biomass 728 255,353
- Run Hours/Day 24/7
- Down Time Days/yr 14
- Run Days/year 351
- **Annual System Run Hours** 8,424
- Finance Annual Interest Rate 4.0% Loan Term
(Years) 10 % of Project Cost 100%
- **Assumed Commodity**
- **Market Price** Ultra-Low Sulfur # 2 Diesel \$3.00 Gallon
Electricity \$0.07 /kWhr



Gold Seal Industries Assumes Project Risks

- Environmental Permitting (CHP)
- Construction Cost Overruns
- Transportation/Fuel Costs – Gas and Oil Volatility
- Operational Risk – Daily Operations
- Negative public perception that it is the same as incineration and will be hazardous to nature.
- The process is unproven on a commercial scale over a long period of time (more than 10 years)



Note: Gold Seal Industries uses manufactured components from leading companies in their industry and provides a limited system warranty and does not provide any other form of independent third party verification or reports, bonding, insurance, or performance guarantees on the systems. All customers that purchase a system whole or in part are responsible to secure and pay for any form of information and/or bonding, insurance, or performances guarantees or further products/services they may require or desire on the system. The Project Financial Model represents a best estimate of the system performances and is not a guarantee.

Project Strengths

- Turn environmental compliance into positive financial investments
- Creates ultra-low sulfur fuels
- Reduced Carbon Emissions
- Limited pre-treatment to handle biomass recycling (limited sorting, labor savings)
- Efficient on site electricity generation
- Environmental compliances with the EPA
- Positive Environmental Change
- **Creation of Local Jobs & Educational Opportunities**
- Saving taxpayer money and expands the tax base
- **“100% Recycling”**



Additional Benefits

Regulatory compliance (State and Federal)

Marketing and Brand enhancement (elimination of methane and green house gases)

Competitive advantage

Reduce human exposure to waste (employees and community)

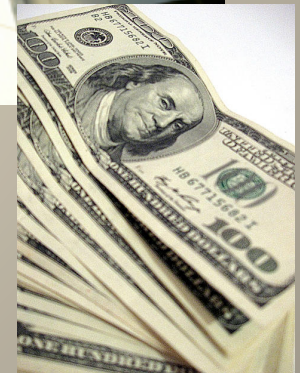
Help eliminate forest and wildlife loss

Fresh water storage reservoirs

Significant reduction of future fire and litigation exposure

Cost Benefits

- 100% Green responsible image that will provide innovative marketing opportunities & competitive advantage
- Renewable Energy production and decreased waste costs
- Investment - Waste savings now and in the future
- Improve energy risk profile, wholesale Bio-Diesel cost, Biochar and Water
- Elimination of forest waste and debris
- Monthly Recycling Reports



Next Steps

- NON-DISCLOSER AGREEMENT
- FEASIBILITY STUDY FOR ENERGY AND FEEDSTOCK OPPORTUNITIES
 - BENEFITS DERIVED FROM OUR APPROACH – USING NEW TECHNOLOGY UNITS
- MEMORANDUM OF UNDERSTANDING
- “RECYCLABLE INITIATIVE” (ALL “WASTE” SHALL BE DEFINED AS **RECYCLABLES** AND SHOULD BE PROCESSED ACCORDINGLY)
- PROVIDE ONE-STOP SOLUTION (Turnkey Operation)
- CONTRACT
- SETUP AND IMPLEMENTATION



“Advanced Waste Conversion Technology, which through Collaboration, provides Alternative Solutions to Environmental Restoration and Resiliency Goals”



Third Party Review

SOENECS
Innovative Sustainable Solutions

Social, Environmental & Economic Solutions (SOENECS) Ltd
Technology Report for Albion Energy



NEW TECHNOLOGY REVIEW

Author: Dr. David Greenfield
February 2017

It is the view of SOENECS that the Electromagnetic Induction Gasification System (EIGS) has the potential to revolutionize the way that difficult wastes can be managed in an appropriate, localized and optimal way, according to their individual chemical and physical composition.

U.S. Department of Energy

- The U.S. Department of Energy is demonstrating its commitment to innovative solutions for growing the economy and using coal while protecting the environment,” said Energy Secretary Ernest Moniz. “Advances in the gasification process will allow industry to develop technologies that may open pathways to carbon use in beneficial new ways while also advancing an important method for reducing greenhouse gas emissions.”
- Gasification plants have the potential for greater power generation efficiency and environmental performance than conventional coal-fired plants, and serve as the basis for integrated gasification combined cycle (IGCC) advanced power generation and co-production plants capable of 90 percent carbon dioxide (CO₂) capture.



Nov. 17, 2014

Lloyd's

The world's specialist insurance market for over 325 years
The world's leading insurance platform



Underwriting since 1688

**“Operational
Performance Guarantee -
Worldwide up to 120% of
Total Equipment Cost”**

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