



**EXPLORE. INVEST. DEVELOP.**

**Renewable Energy Workshop for Agriculture  
In Southeastern MA, Cap & Islands**

**Biofuels: Growing Interest in Local Opportunities**

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*"The use of vegetable oils for engine fuels may seem insignificant today, but such oils may become, in the course of time, as important as petroleum and the coal-tar products of the present time."*

*Rudolf Diesel, 1912*

# Company Overview

**Amelot Holdings, Inc., (AMHD)** a publicly traded company; has identified a projected \$20 billion opportunity to manufacture renewable fuels to supply the growing demand, reduce the dependency and environmental impact of fossil fuels with a focus on biodiesel.



# Cape Cod & Southeast MA

## What Consumables Do We Really Produce?

Cranberries; Industry has been losing ground over the past 6 years. “Some growers make more money growing houses”, former Ocean Spray Board Member

Seafood; We import and consume more fish from Canada than from the US. Fishermen need research grants to help offset the restrictions forced on them. No one beats us on Shellfish! #1 Port buy sales volume is New Bedford

We Import Most Everything We Consume

How Sustainable Can We Be?



# Can We Start with Energy?

- We started with Conservation in the 70's
  - Solar took off in the 80's
  - Wind made significant strides in the 90's
  - Renewable Fuels kicked into high gear after Y2K
- Can we make sustainable fuels from local resources to support the local economy?



# What Do You Need to Build a Renewable Fuels Company

- Feedstock; Raw Materials
  - Food Grade Commodities
  - Waste Streams
  - New Opportunities
- Off-Take Agreement
  - What Are the Market Segments
  - Who Are the Real Clients
- Technology & Engineering
  - Single or Multiple Product Focus
- Business Plan
  - Management Team
  - Funding
  - Focus; what type of fuels and what market segment



# What Type of Fuel ?

Biodiesel – Diesel Fuel Additive

Ethanol – Gasoline Additive

Butonal - Gasoline and Jet Fuel Additive

Hydrogen – Competitive Fuel

SynGas – Biogas Competitive to Natural Gas

Synthetic Fuels – Competitive Fuel and Additives



# Feedstocks - What Do We Have?

Algae - Micro

Algae – Macro

Seaweed

Cranberry

Cranberry Oil

Cranberry Pulp

Cranberry Trash

Cranberry Slurry

Fish

Trash Fish

Fish Livers

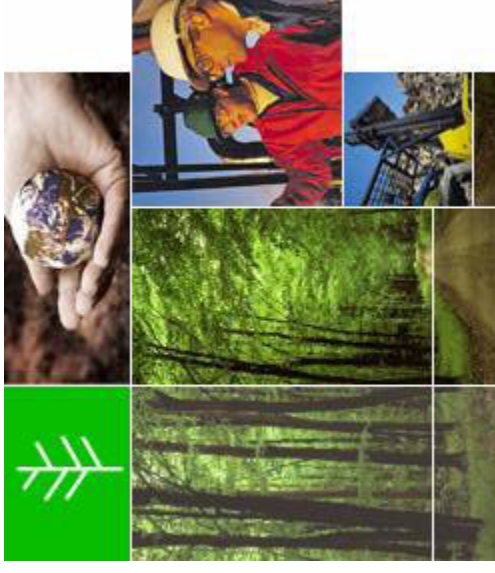
Biomass

Willow

Grasses

Ag Wastes

C&D Waste



# Micro Algae?

| Feedstock | US Gallons/acre | Total Cost/Gallon | Total Cost of Goods per Month | Acres to be Harvested per Month |
|-----------|-----------------|-------------------|-------------------------------|---------------------------------|
| Soybean   | 50              | \$2.08            | \$866,667                     | 75,000                          |
| Rapeseed  | 145             | \$2.44            | \$1,016,667                   | 25,862                          |
| Jatropha  | 175             | \$0.84            | \$350,000                     | 21,429                          |
| Palm oil  | 650             | \$1.57            | \$654,167                     | 5,769                           |
| Algae     | 3,750           | \$0.48            | \$200,000                     | 110                             |



# Algae – Macro?

## June 2006 Sea Lettuce in North Bay

Gross sea lettuce infestations are a major problem in many parts of the world and the use of mechanical harvesters to remove it has been successful. Sea lettuce thrives when soluble nitrogen, almost always from sewage, mixes with phosphorus rich seawater. In the open ocean, dilution prevents excessive growths. However, in poorly flushed estuaries, accumulating concentrations of nitrogen along with the phosphorus naturally present in seawater, cause extensive growths of sea lettuce and other undesirable algae.

### **Management:**

Options for managing the problem include hiring a contractor to harvest the sea lettuce or independently purchasing harvesting equipment

Three Bays Preservation Osterville, MA



# Cranberry Oil?

## **Decas Botanical Synergies (DBS)**

Founded in 2002, Decas Botanical Synergies has rapidly become a leader in the development of cranberry-based powders, extracts and oils for a wide range of applications and industries.



# Willow?

## Laidlaw Energy expands into hybrid willow biomass production (G&C)

Laidlaw Energy Group, Inc. is undertaking a significant business expansion aimed at creating a vertically integrated renewable energy company. The new business lines include a technology division that will focus on acquiring and investing in innovative renewable energy technology, as well as an agricultural division that will focus on initially obtaining 1,000 acres of land in Western, NY to grow hybrid willow to provide a "closed loop" source of fuel for their biomass energy project in the area and also to sell to area coal plants as fuel for co-firing.

## Willow biomass study receives \$1,950,000 US (G&C – R&D)

A research project to investigate the regulation of coppicing in willow to improve its biomass yield at the University of York and Rothamsted Research has received almost 1,950,000 US (£1M) funding as part of \$25,000,000 US (£13M) granted to 18 plant science projects by the Biotechnology and Biological Sciences Research Council (BBSRC) in the UK. The project is linked to a willow breeding program and its' goal is to facilitate the selection of improved biomass willows in breeding.



# Projects

## **HUGE HAWAII BIODIESEL PLANT TO FEED ELECTRICITY GENERATION**

A biodiesel plant that would be the largest in the United States is being planned by developers and the local electric company with an eye to fueling most of the power needs on the Hawaiian Island of Maui.

**Shell New Zealand** is delighted to announce it has signed a letter of intent with Argent Energy New Zealand Ltd in preparation for meeting the new biofuels sales target announced by the New Zealand Government today. The biofuels sales obligation will see the mandated introduction of biofuels commencing in 2008, with the aim of 3.4% of the total fuel sold in New Zealand to be biofuel by 2012.

**U.S. Microbics** formed a new business unit to research and apply its proprietary microbial blends for use in the production processes of bio-diesel and ethanol from **organic material sources** for fuel applications.

## Projects by MA Companies

### **CELLULOSIC ETHANOL COMPANY MASCOMA, ROYAL NEDALCO TEAM UP**

Massachusetts cellulosic ethanol developer Mascoma Corp. recently announced it signed a license and joint development agreement with Dutch ethanol technology producer Royal Nedalco.

The agreement aims to license Nedalco's yeast-based technology for use in Mascoma's recently announced 500,000 gal/yr cellulosic ethanol demonstration plant in Rochester, N.Y., as well as future Mascoma commercial plants.

## Projects

### **University of North Dakota and ICM to improve biomass ethanol production (R&D)**

The Centers for Renewable Energy and Biomass Utilization at the University of North Dakota Energy & Environmental Research Center (EERC) are partnering with ICM, Inc., to improve the ethanol production process and further advance its use through nontraditional feedstocks that go beyond corn. The EERC is developing a new technology to produce ethanol from biomass materials such as **grasses, wood and straw**.



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Thank You.