

Waste-to-Oil

Eliminate Waste

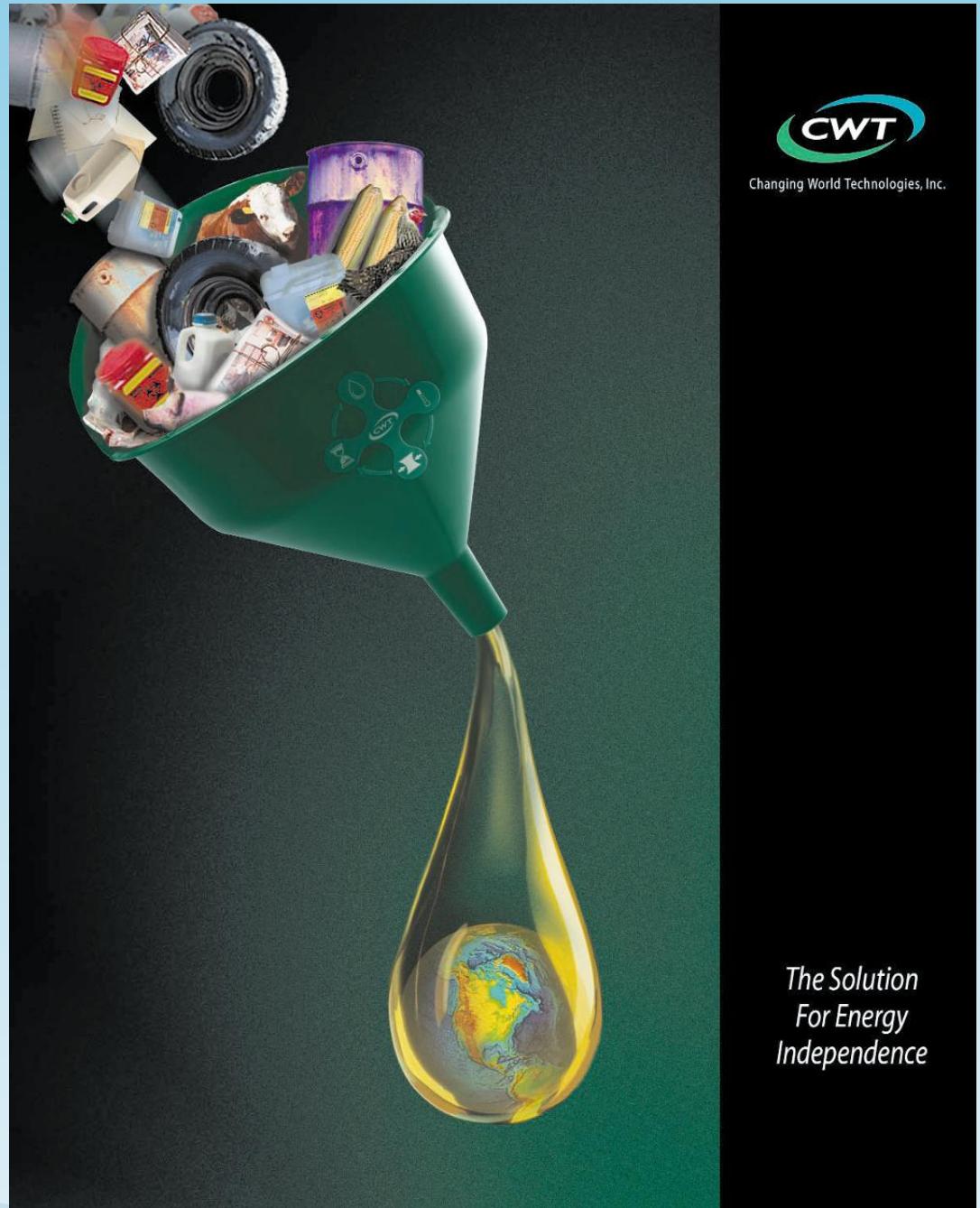
Produce Renewable Energy

Reduce Global Warming

Improve Quality of Life

Renewable Diesel Fuel Oil

Introduction



Changing World Technologies, Inc.

*The Solution
For Energy
Independence*



Who we are...

- ▶ Company Founded in 1997
- ▶ HQ (NY), R&D Center (PA), and Commercial Demonstration Facility (MO)
- ▶ Over \$150M of Private Equity and Government Grant Financing
- ▶ Developer of the Thermal Conversion Process (TCP)
TCP breaks down organic materials by using heat, pressure and water to produce oil and other co-products. www.changingworldtech.com

- Our Platform: **Renewable** and Alternative
- Our Patented Technology: **Renewable** and Green
- Our Production: **Renewable** and Competitive
- Our Customer Proposition: **Renewable** and Compelling





What we do...

Input



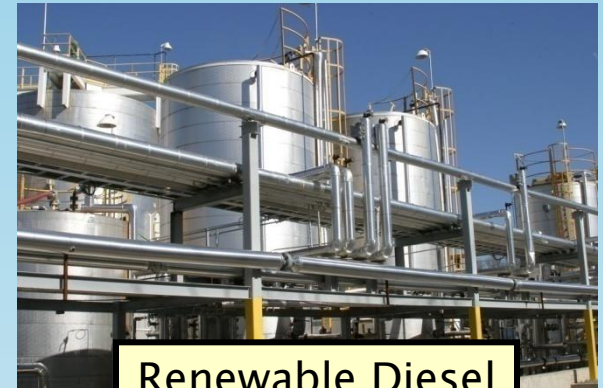
Waste

Process



Converted to

Output



Renewable Diesel

Fertilizers



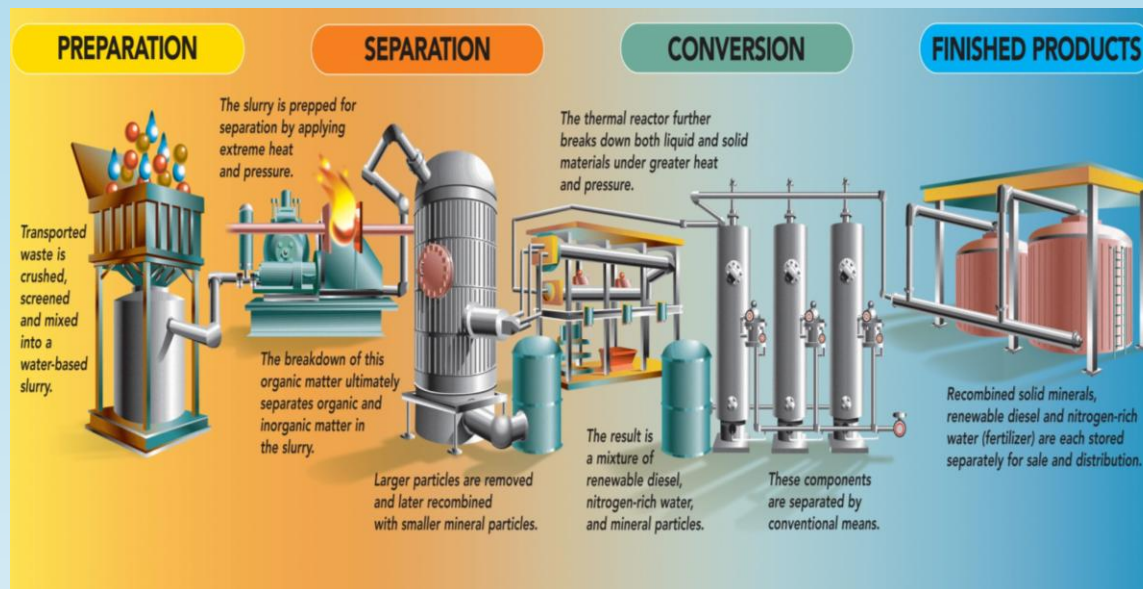
Turn Waste-to-Oil



The hydrothermal process...

► Multiple Steps

- Proprietary four-step process emulates Earth's geological and geothermal processes. Unique application and interaction of water, heat and pressure in multiple stages





Our fuel...

- ▶ Does not compete for food crops, unlike other biofuels
- ▶ Compatible with existing petroleum infrastructure (no alcohol)
- ▶ Uses fewer natural resources than conventional diesel and other biofuels; no catalysts or enzymes
- ▶ Higher net energy balance than conventional fuels

Truly Sustainable



We offer a solution to waste disposal...

- ▶ Reduction in disposal costs
- ▶ Expansion of local business opportunities
- ▶ Reduce burden of “solids” loading at wastewater treatment facilities [F.O.G.]
- ▶ Beneficial reuse of a waste product
- ▶ Creation of a Green alternative fuel
- ▶ Improving overall quality of the environment

Feedstock Available



Customer satisfaction and validation...

Initial Title V customers



- \$3B exclusive cheese supplier to Wal-Mart
- Two fuel contracts at sites in Missouri
- Approximately 1.4 million gallons annually



- \$3B global leader in commercial explosives industry
- Two-year fuel supply agreement
- Approximately 1.0 million gallons annually

Millions of gallons sold



Fuel highlights...

- Meets characteristics of ASTM D-396 fuel oil
 - All fuels must eventually meet ASTM D-396
- Burns compatible to #2 fuel oil
- Direct fossil fuel substitution*
- Air emission tested under AP-42 guidance
- Minor changes required for fuel delivery system
- Minimal additional operation and maintenance cost

Terminology

What is Bioheat® fuel?

Bioheat® fuel is the industry-accepted term for any blend of pure Biodiesel with conventional high or low sulfur home heating oil. The heating oil must meet its specification, ASTM D 396 and the Biodiesel must meet its ASTM specification, ASTM D 6751, before blending them together.



* CO2 credit eligible @ 22.384 lbs/gallon



Fuel characteristic highlights...

Fuel Property	Renewable Diesel
Water & Sediment, Vol %	<1.0
Ash, Wt%	<0.2
Copper Corrosion @ 122°F	1A
Flash Point, °F	Above 200
Sulfur, %	<0.2
Heat Content, BTU/gal	>126,000
API Gravity @ 60°F	21.5



Validations...

▶ Key Aspects

Highly respected

- U.S. EPA – RFS2 Certified Producer



- Multiple State Agencies – MO, PA, OK, KS, NY, CA
 - NEPA Assessments and LCA's



- U.S. DOE



- U.S. DOD



- MIT-Princeton-Hofstra



- Industry
 - USCAR – Ford, GM, Daimler





Current validations...

▶ Fuel Property Awareness

- Brookhaven National Laboratory - U.S. DOE
- Quartz combustion test and metallurgy



Flame produced by No. 2 oil



Flame produced by RDO



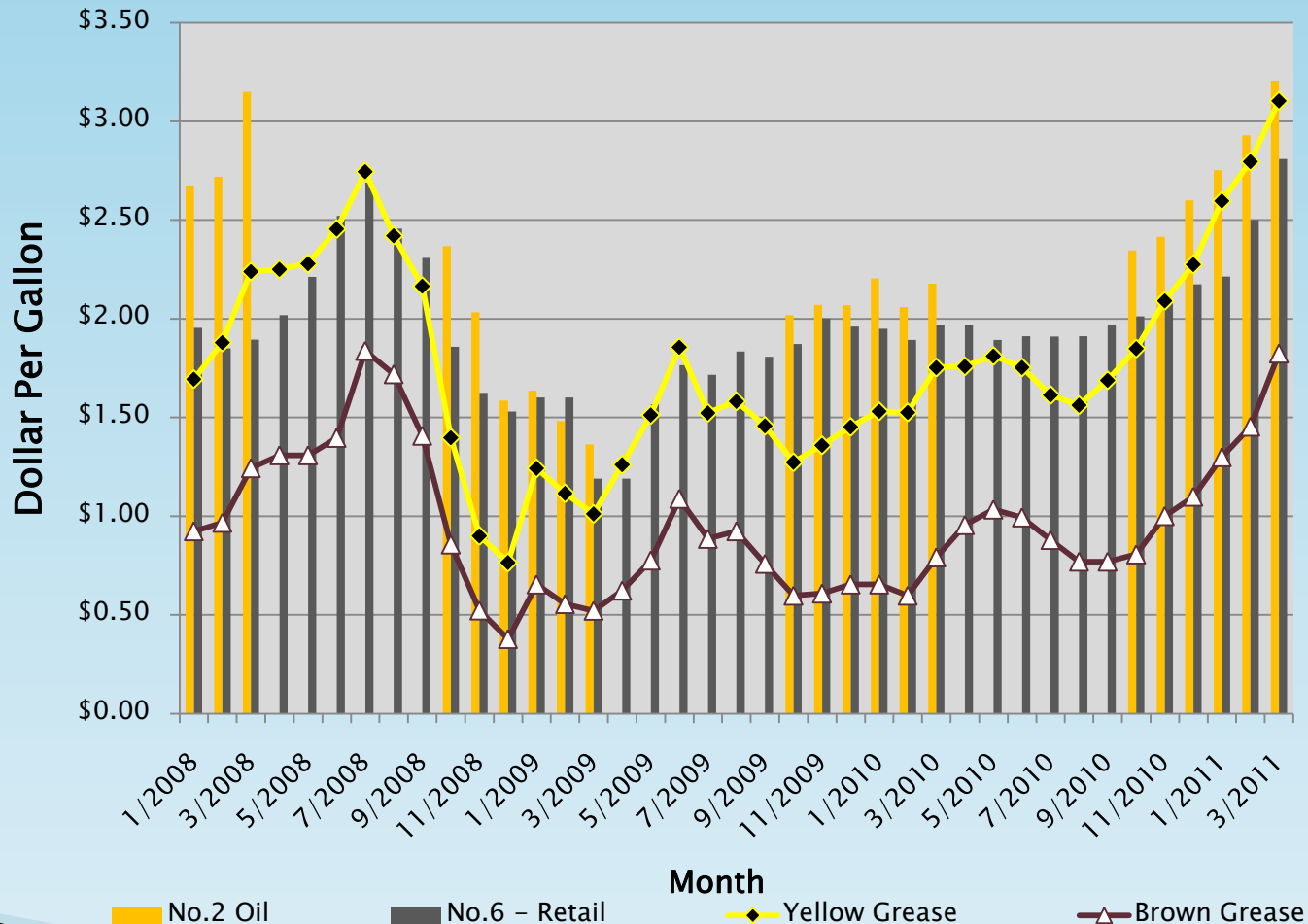
Corrosion Coupons
Steel and Copper

Emissions and performance



Fuel price stability...

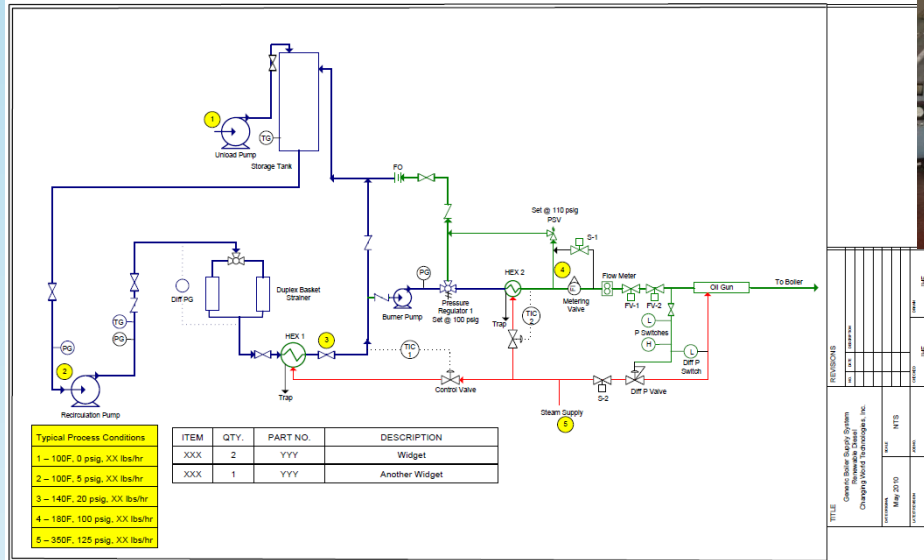
- ▶ Sales – Feedstock Contribution Margin Spread
New England Fuel vs. Brown/Yellow Grease Prices



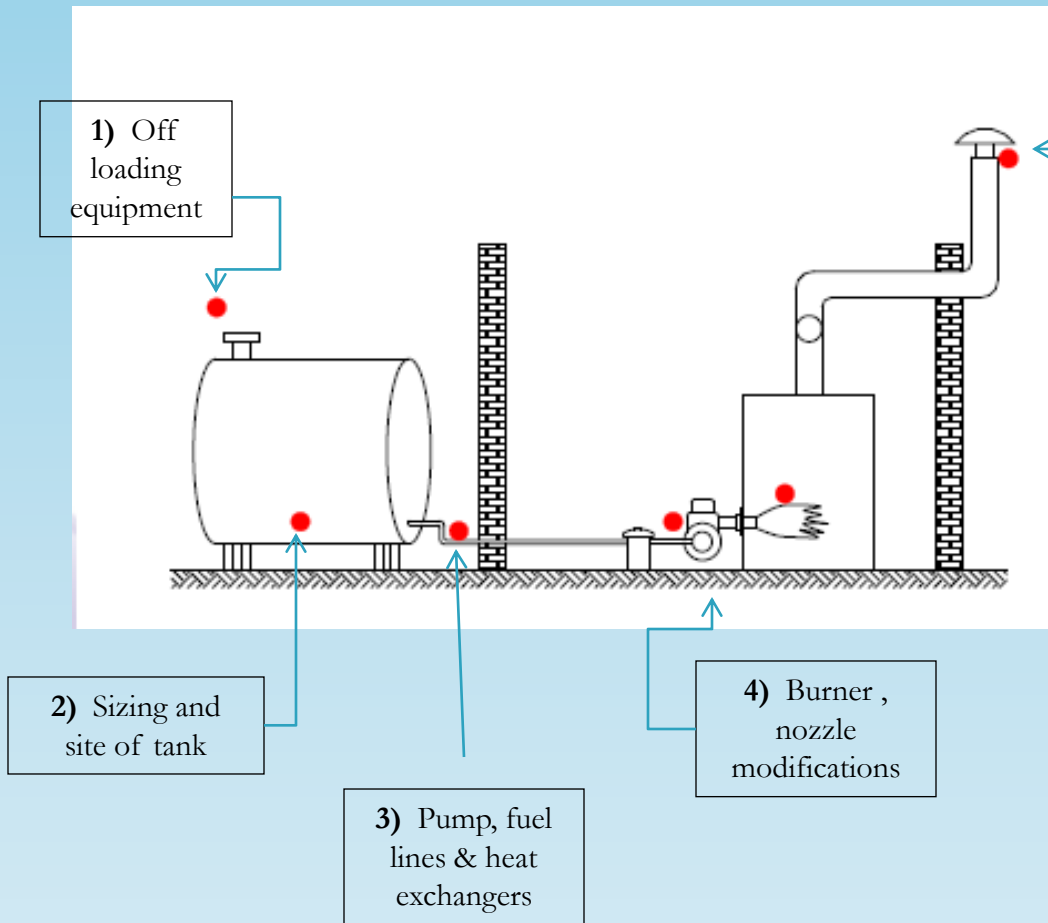


Seamless integration...

- ▶ Sales, Service and Support
 - Supply 100% neat fuel
 - May require slight modification to fuel delivery systems



Fuel Delivery Modifications



Equipment Modifications

Notes

1)

2)

3)

4)

5)

Misc.

Notes:



Adequate assurance of fuel...

- ▶ Logistics
 - Trucking [local tanker]
 - Rail Cars [45 GATX & Trinity]



6 staging positions on site; 2500 feet local track

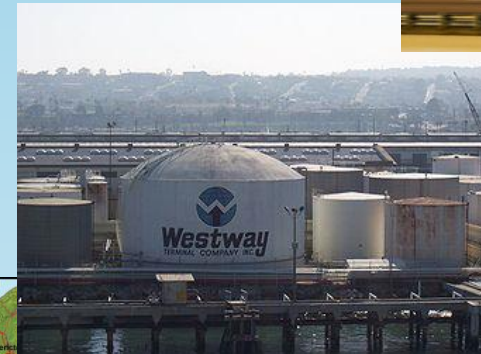




Adequate assurance of fuel...

▶ Logistics

- Westway Terminal - Albany, NY
- Local trucking contracted
- Fuel positioned in New England





Production facility...

- ▶ Operations
 - 15 million gallon/year, Carthage, Missouri
 - Expansion plans...22 million gal/yr





Where are we going?

- ▶ Taking leadership role to a more sustainable existence...

