cema

The Benefits of Bioheat®

OUR PURPOSE TODAY IS TO…

Arm you with information about the profound changes (cleanliness & price) about heating oil as well as illustrate how Bioheat in Connecticut is cleaner than natural gas.

RENEWABLE FUELS

WIND ENERGY

- Produced by converting the kinetic energy into electricity
- Reduces need for fossil fuels when used as an energy source
- Wind reduces carbon dioxide emissions by 98.6%

SOLAR ENERGY

- Energy derived from the sun converted into usable energy
- Reduces need for fossil fuels when used as an energy source
- One megawatt hour offsets 1 ton of CO_2

BIOMASS ENERGY

- Biological material derived from both plant and animal material
- Reduces need for fossil fuels when used as an energy source
- Can be produced as needed
- Biomass crops produce oxygen and use up carbon dioxide

TWO TYPES OF BIOMASS

BIODIESEL

100% renewable
Made from plant oils
Can be blended with other fuels or used as a pure product (B5-B100)
Enhances food supply

ETHANOL

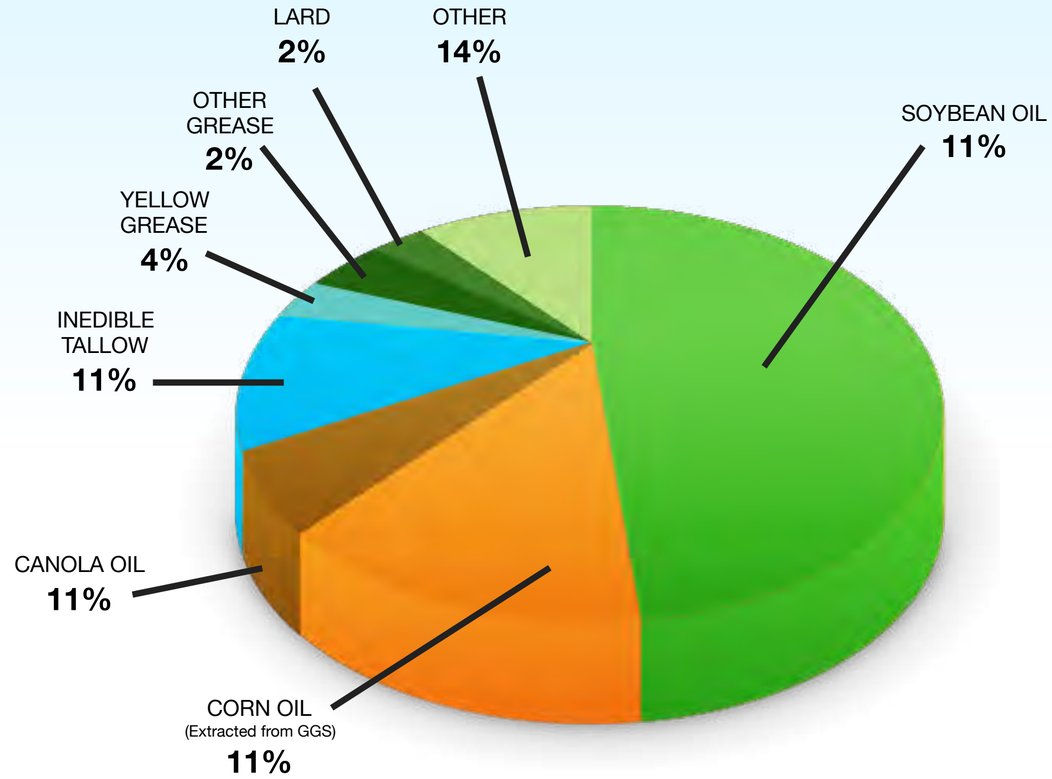
Alcohol-based biofuel produced from sugar-based crops
Blended with gasoline to produce cleaner burning gas

WHAT IS BIODIESEL?

Biodiesel comes from plant oils such as soybean and palm oil, animal fats, or recycled restaurant oils. It is a 100% renewable fuel and contains nearly 0% sulfur content. Biodiesel must be designated as B100 and meet all of the current requirements of ASTM D-6751 to be certified as Biodiesel.

What is Biodiesel made from?

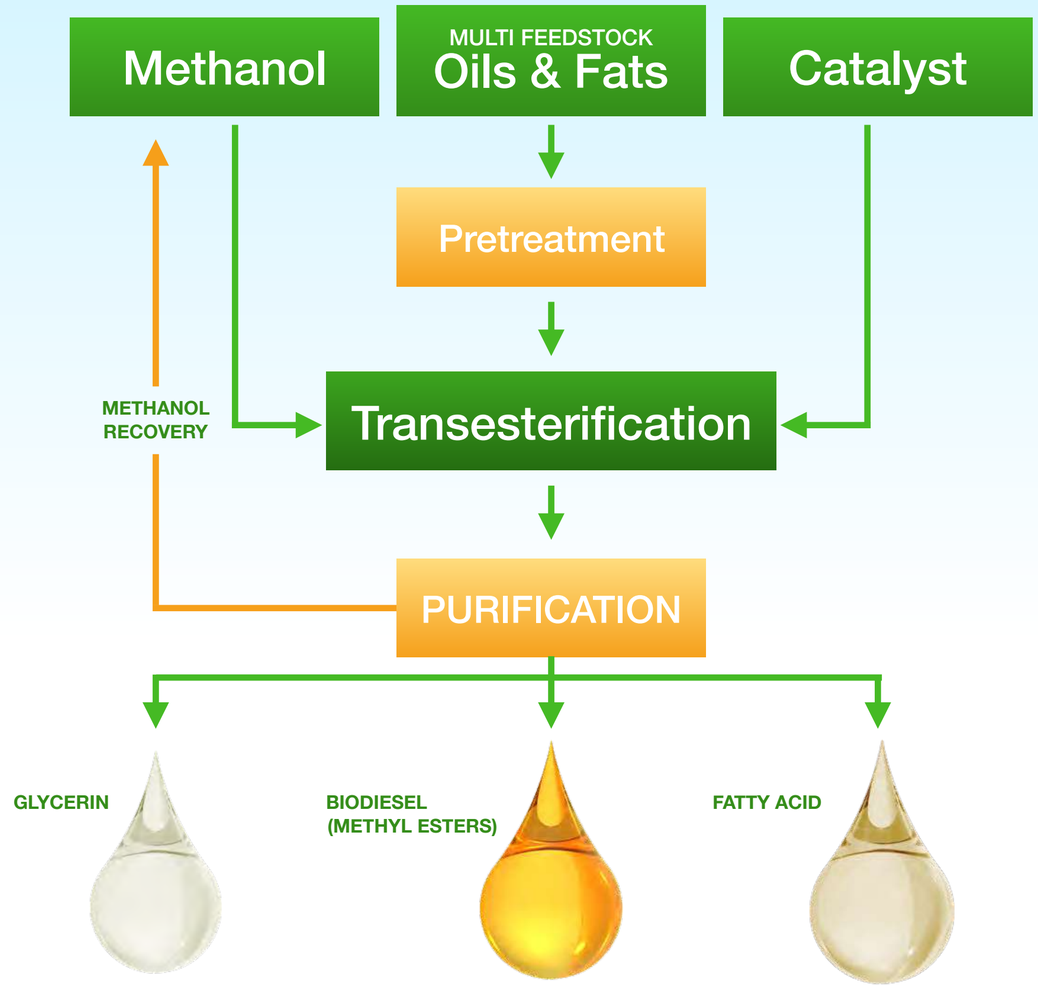
Feedstocks that meet the ASTM quality specifications as defined under ASTM D-6751



PRODUCTION OF BIODIESEL

Biodiesel is produced when solid particles are removed from fats or plant oils. The solid particles, glycerin, are then used to create many household products including soaps. The remaining liquid is the biodiesel.

This chemical process is called transesterification.



QUALITY ASSURANCE IN BIODIESEL AND BIOHEAT®

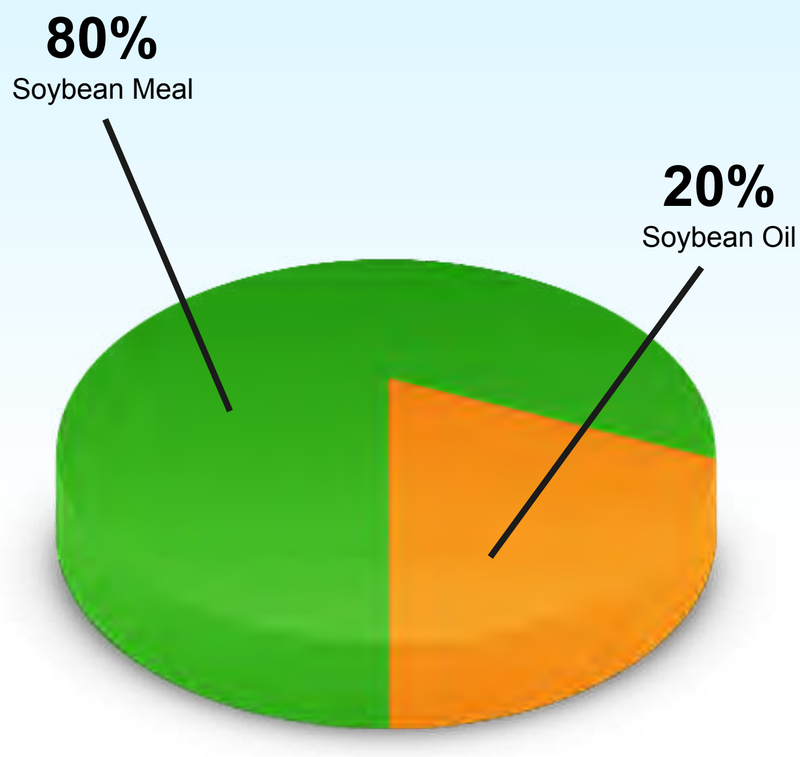
ASTM International sets technical standards globally. D-6751 is their code number for pre-blended Biodiesel fuel, which is also the only renewable diesel fuel with approved ASTM specifications. Here are some of the specifications that prove the quality of Biodiesel and Bioheat®:

- Biodiesel must be B100 and ASTM certification D-6751 (or current version)
- EPA registration is required to sell Biodiesel
- #2 Heating Oil - ASTM D-396 (inclusive of up to 5%, B100 Biodiesel)
- Diesel Fuel - AST D-975 (inclusive of up to 5%, B100 Biodiesel)

You will also see BXX. XX is the volume percentage of Biodiesel. For example B5 means there is 5% Biodiesel blended.

WHAT DOES BIODIESEL HAVE TO DO WITH THE WORLD'S FOOD SUPPLY?

Soybeans are primarily grown to be used as a high protein meal for livestock. But, not all of it is used as food. Nearly 20% is a by-product, which otherwise would have been discarded, and is in the form of oil. And, as the demand and value increases for soybean oils that are used in Biodiesel production, the cost for the proteins used in feed for livestock and food comes down.



BIOHEAT (THE ADVANTAGES)

Enhances and extends life of heating equipment

Creates jobs in CT (US and reduces foreign oil dependency)

No system modifications are needed

HEATING OIL + BIODIESEL

BIOHEAT®

THE EVOLUTION OF OILHEAT

Every gallon of heating fuel in CT is already Bioheat (5-8%)

Currently sold in 23 states

Burns cleaner & more efficient than conventional heating oil

BIOHEAT VS NATURAL GAS

BIOHEAT®

THE EVOLUTION OF OILHEAT

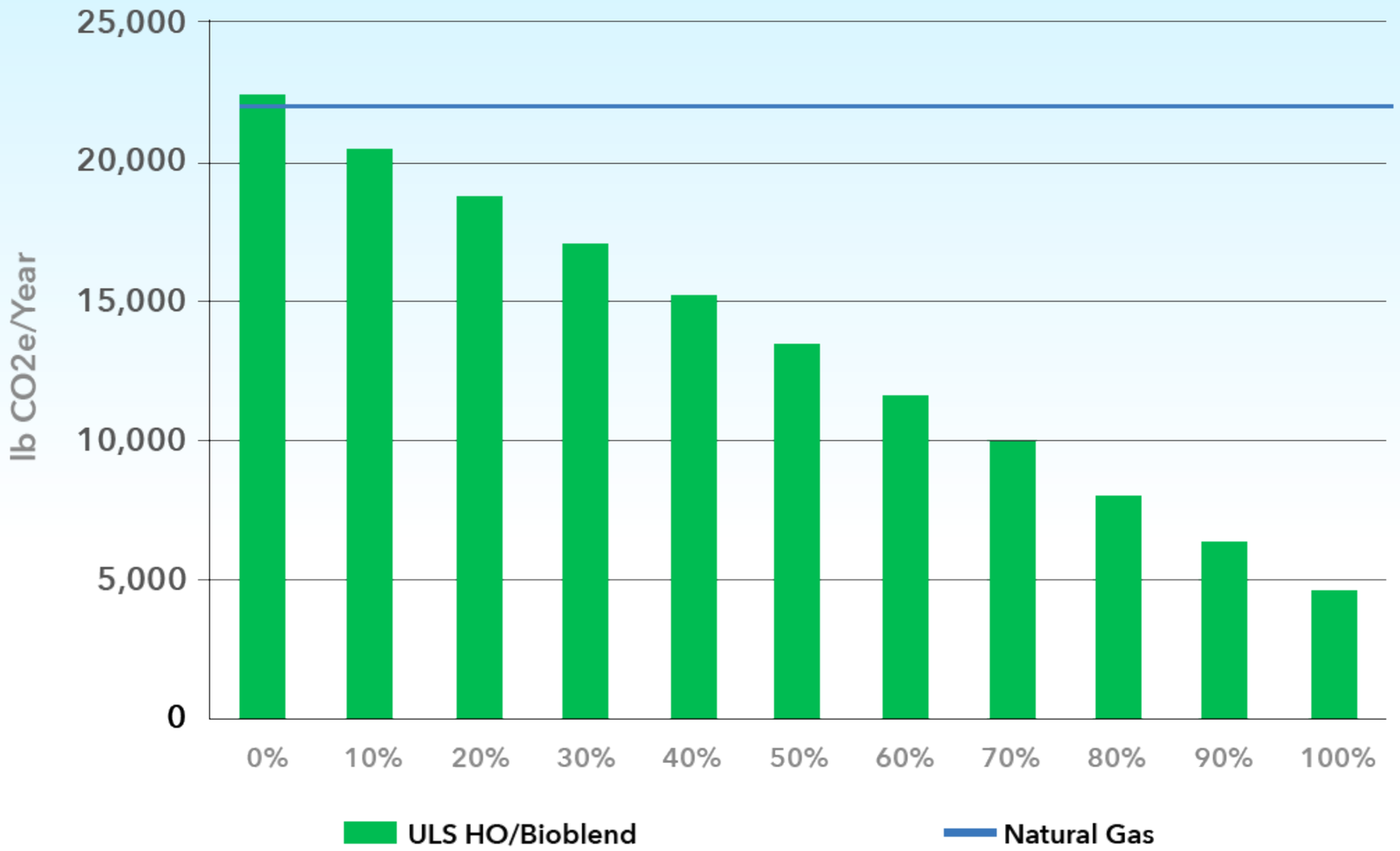
Cleaner Than Natural Gas
A Brookhaven National Laboratories study has concluded that Bioheat blends as low as 1.8%, is cleaner than natural gas

Helps Communities
Heating oil companies delivering Bioheat are typically local, family-owned businesses committed to the communities they serve

Natural Gas

- X Methane—(the green house gas) emitted by natural gas – *is far **more toxic** than carbon dioxide*
- X In the northeast, the natural gas infrastructure is so old and antiquated that there is methane being emitted into the atmosphere at dramatic rates
- X Natural gas pipelines cannot meet current capacity requirements placing even greater strain on the aging pipelines and delivery reliability
- X Natural gas utilities operate as monopolies in the state of CT as it is **NOT** a deregulated commodity

BIOBLEND GHG EMISSIONS BY BLEND PERCENT VERSUS NATURAL GAS 20 YEAR ATMOSPHERIC LIFETIME (WITHOUT INDIRECT LAND USE)



Source: February 2007: ICF Report entitled, “Final Report Resource Analysis of Energy Use and Greenhouse Gas from Residential Boilers and Hot Water Heaters*

BIOHEAT IS BETTER

BIOHEAT®

THE EVOLUTION OF OILHEAT

Safer	Cleaner	Environmentally Friendly	Renewable		
Sustainable	Creates American Jobs	No Modifications Required	Enhanced Equipment Operability	More Efficient	
Additional Improvements as blends increase	Biodegradable	Comparable Value to Generic Heating Oil	Virtually Sulfur Free	Marketable	Natural Gas Performance Parity

ADDITIONAL INFO

Additional information for the advantages of Bioheat can be found on the following links:

BioheatNow.com

MyBioheat.com

AskBen.info

BioDiesel.org

OilHeatAmerica.com