

RED BIRCH ENERGY.COM

From the
Farm to the Fuel Pump







RED BIRCH *VISION*

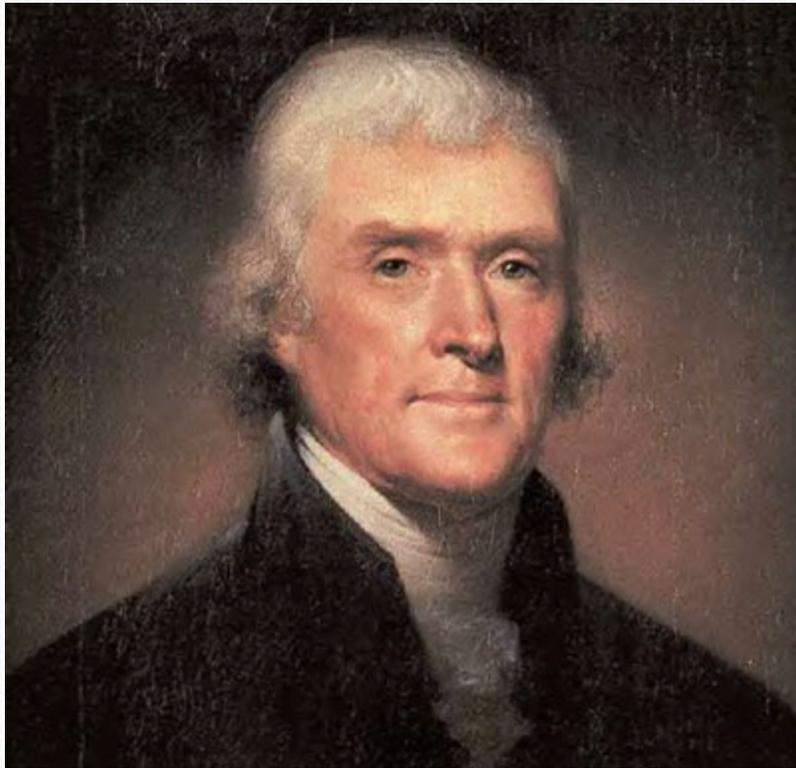
Small Scale

Farmer

Owned

Biorefineries

THOMAS JEFFERSON, ONCE SAID.....



“Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous and they are tied to our country and wedded to its liberty and interests by the most lasting bonds. I think our governments will remain virtuous for many centuries, so long as they are chiefly agricultural.”

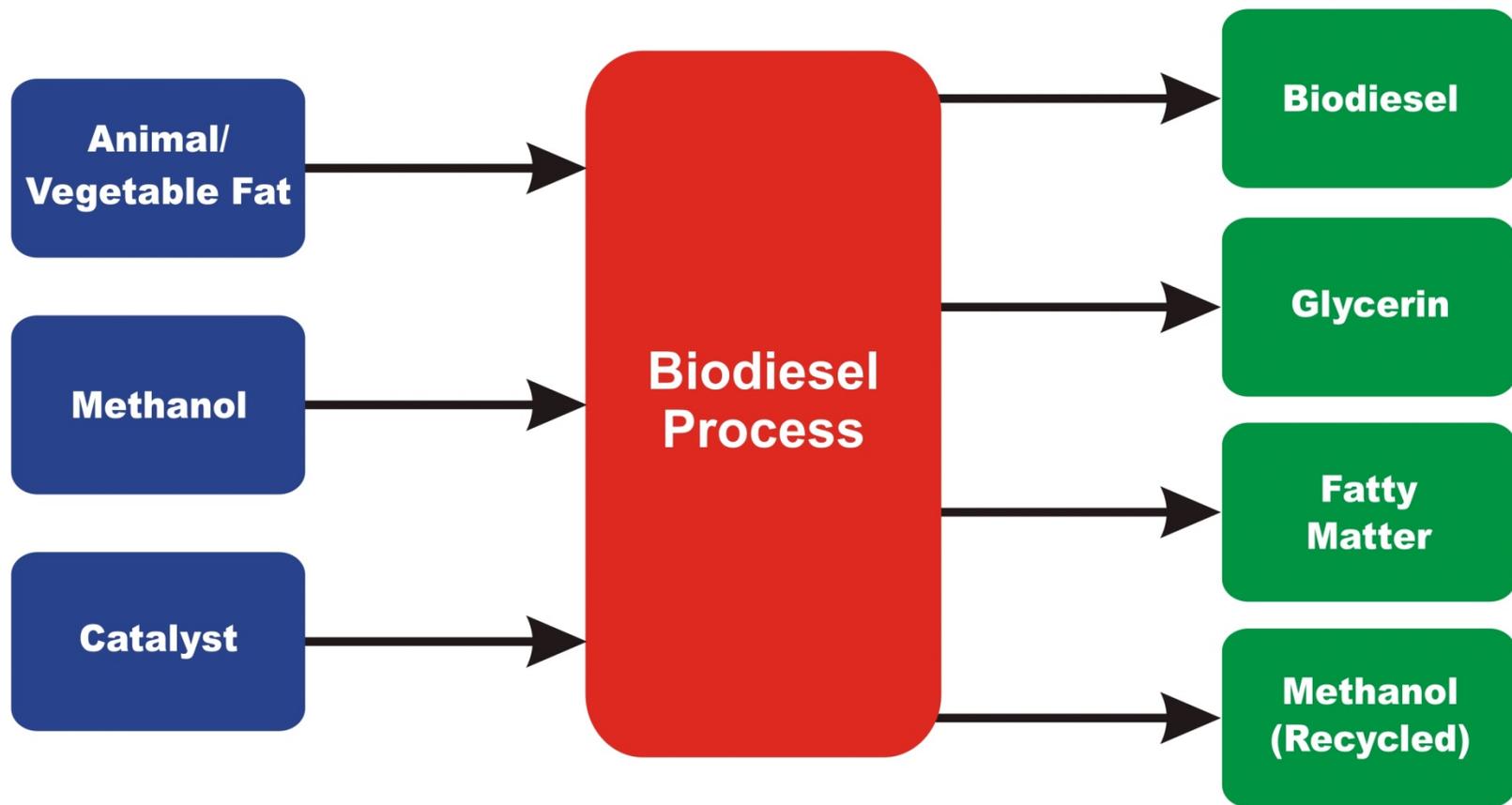
WHY BIODIESEL ?

1. 1 to 3.5 units of Energy in vs. Energy out
2. No Engine Modifications
3. Premium Fuel, Higher Cetane, **55**
4. 30% Better Fuel Efficiency with Diesel
5. Diesel Drives our Economy



THE **BI** **DIESEL** PROCESS

Feedstock → **Process** → **Products**

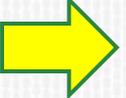


5 LEVELS OF THE BI DIESEL INDUSTRY

1. The Farmer
2. The Oil Supplier
Cargill, ADM
3. The Biodiesel
Manufacturer
4. The Transporter
5. The Retailer



ISSUES AFFECTING BI DIESEL

 **Supply and Demand**

Small Scale vs. Large Scale

Ownership Matters

Peak Oil Theory

80% OF AMERICANS WANT ALTERNATIVE FUEL

The Question has never been
about Demand its always
been about Supply

How do we get it to the customer?

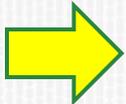


RED BIRCH COUNTRY MARKETS

- ◆ Recipe for Energy Independence ◆

ISSUES AFFECTING **BI** **DIESEL**

Supply and Demand

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ADVANTAGES OF SMALL SCALE

★ Much Lower Up Front Cost

Equity For Small Plants Can more easily be gained from local resources

Enabling the facility to be more rooted in the community

Larger proportion of the revenue generated by the facility staying in the community

★ Much Easier To Get Local Government Zoning Approvals

★ Adequate Land Available To Support Bassett Project, not so with Large Plant

★ Greater National Security when Bio-refineries are spread out

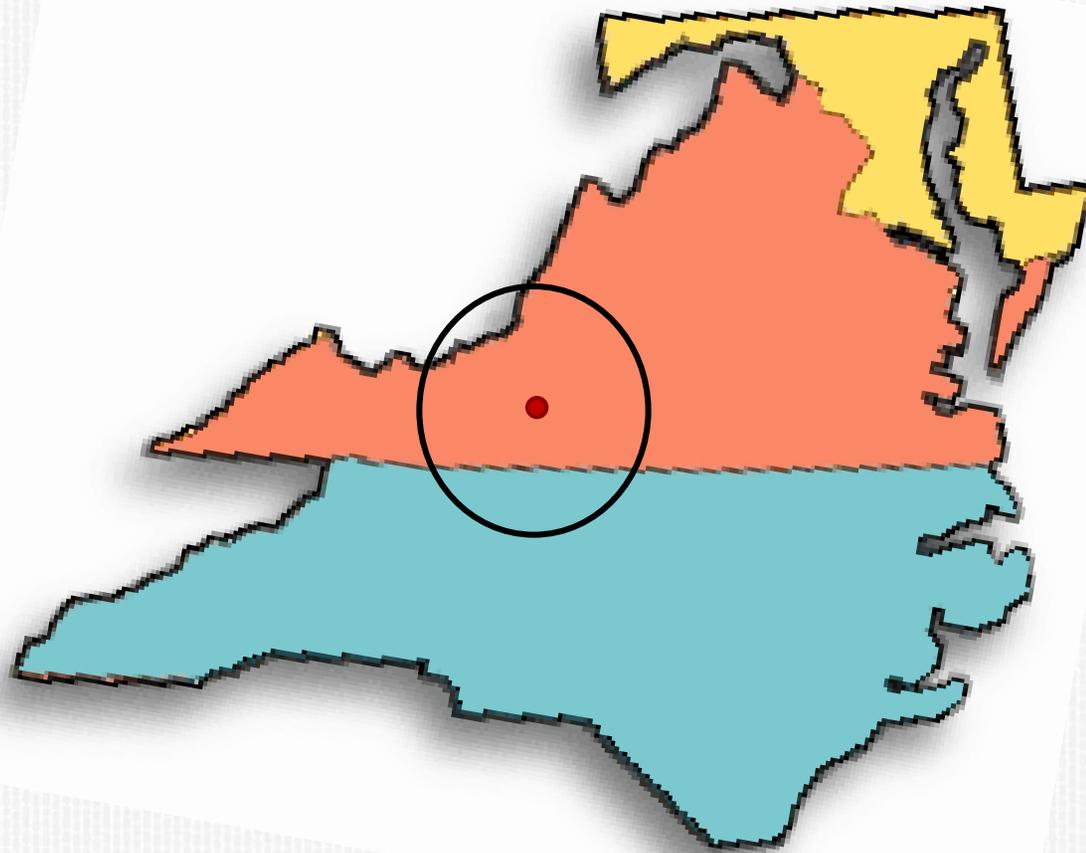
“DISECONOMIES OF SCALE”

“Large plants do not, of course, guarantee lower costs. There are diseconomies of scale. A large plant can strain local suppliers. Reporter Peter Rohde of *Inside Fuels and Vehicles* reports that a new 100-million-gallon ethanol plant in South Dakota raised the basis price of local corn by 30 cents per bushel. This increased feedstock cost wiped out any savings generated from reduced capital, labor and transport costs.”

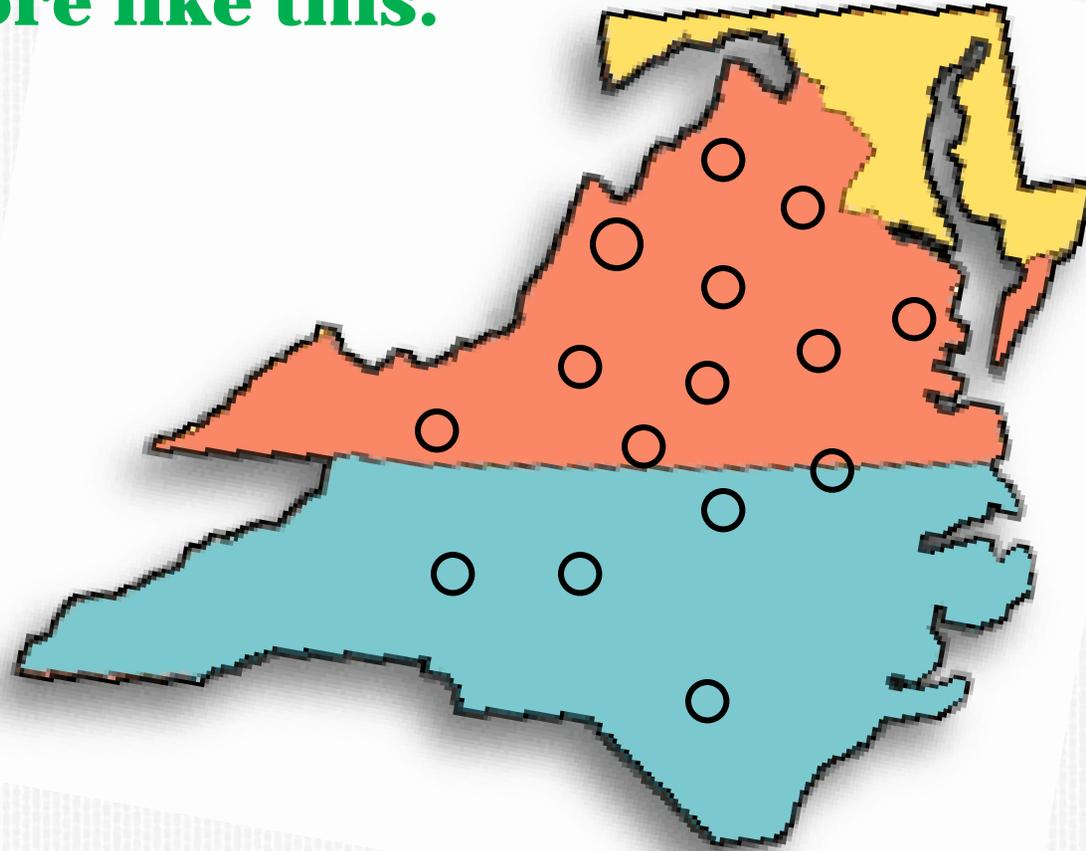
David Morris

Economist, advisor to federal energy agencies since the Ford Administration

Large Scale Plant In Bassett Would Require A Very Large Radius To Supply The Feed Stock



Small Scale Plant radius would look more like this.

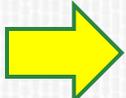


Every County, Every Municipality needs to become ***Energy Independent!***

ISSUES AFFECTING BI DIESEL

Supply and Demand

Small Scale vs. Large Scale

 **Ownership Matters**

Peak Oil Theory

JOHN F KENNEDY ONCE SAID,



“Farming is the only business where you buy everything retail and sell everything wholesale.”

Benefits for Farmers

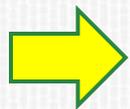
1. Hedge on Fuel Prices
2. Hedge against lower grain prices
3. New Market....Canola Oil
4. Ray Koch Model
5. Energy Independence

ISSUES AFFECTING BI DIESEL

Supply and Demand

Small Scale vs. Large Scale

Ownership Matters

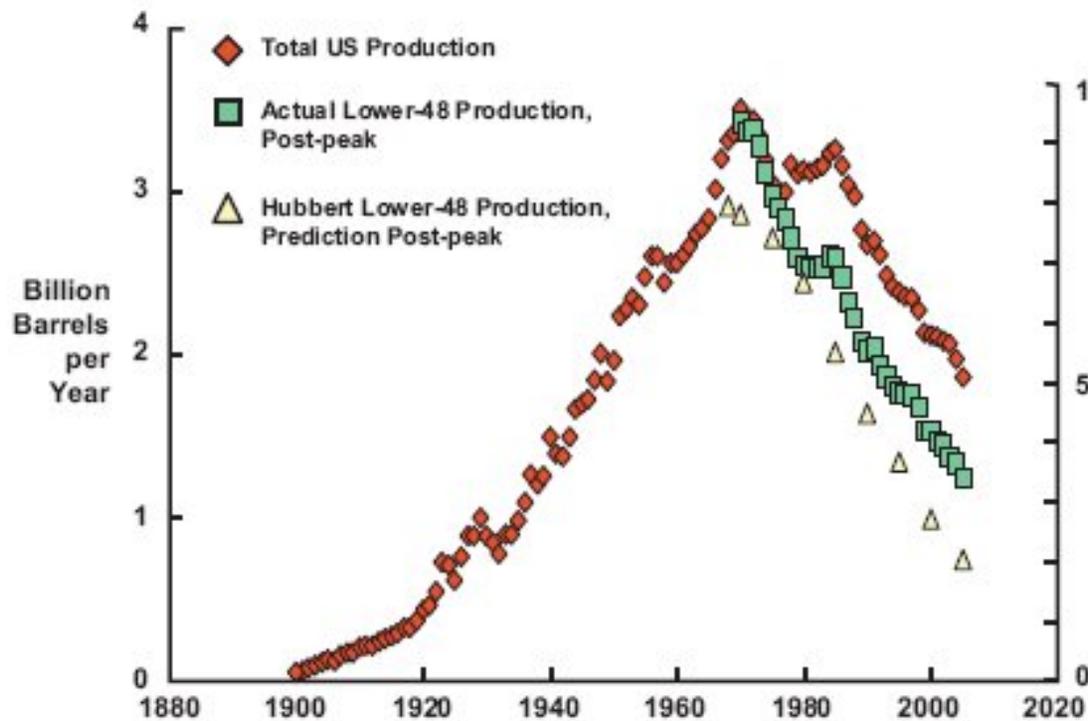


Peak Oil Theory

U.S. Peaked in 1972

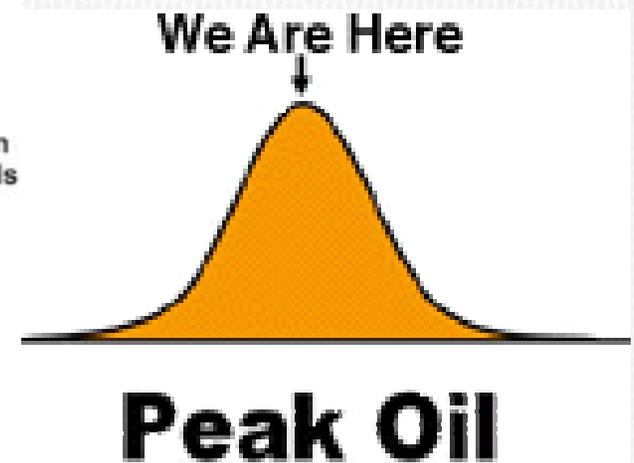
United States Production Hubbert versus Actual

United States Production, Hubbert versus Actual



Source: Cambridge Energy Research Associates.

World Production



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WHY VIRGINIA CANOLA ?



1. **Developed at Virginia State University by Dr. Harbans Bhardwaj.....Highest Yields per acre**

“studies have shown that planting soybeans in rotation with canola garners a greater yield of soybeans” ...Dr. Bhardwaj

2. **44% oil.....Highest oilseed crop that will grow in Virginia’s Climate**

3. **Winter Crop**...Plant in October, harvest in June....does not compete with food crops, ie....corn, soybeans

4. **Uses Conventional Equipment**....With the exception of Kevin Engle, Planted 100 acres with an *airplane*

5. **High Meal Value**....Virginia is a meal deficit state

The 5 E's of Biodiesel

-  **Equipment**
-  **Emissions**
-  **Environment**
-  **Energy Security**
-  **Economics**

Equipment

Bi  diesel has been endorsed
by most manufacturers



Nothing Runs Like A Deere®



Emissions



Biodiesel vs. #2 Diesel

	B100	B20
Total Unburned Hydrocarbons	-67%	-20%
Carbon Monoxide	-48%	-12%
Particulate Matter	-47%	-12%
NOx	+10%	+2%

Environment

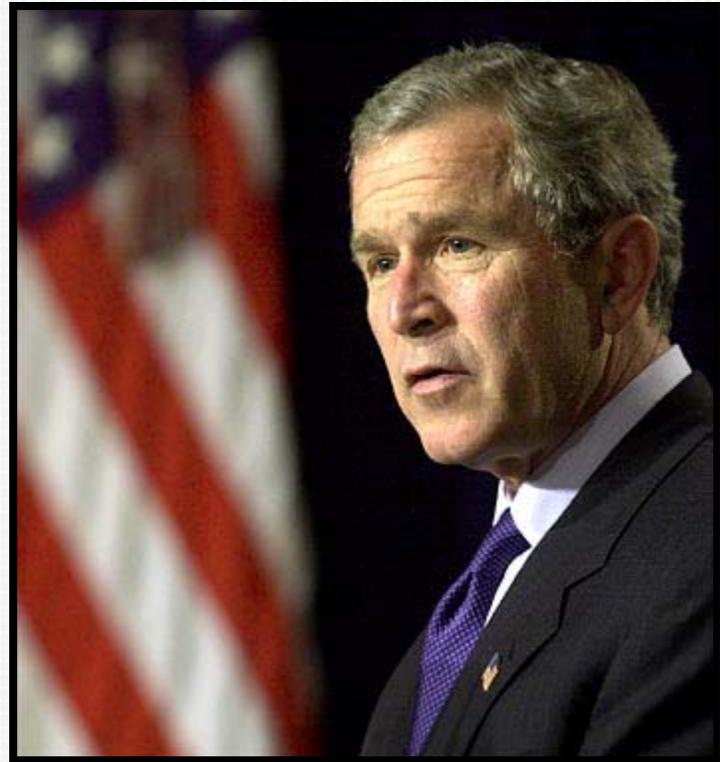


Bi  diesel is less toxic than table salt
& biodegrades as fast as sugar.

Energy Security

“We're Going To Continue To Figure Out Ways To Grow Our Way Out Of Dependence On Foreign Oil.”

“Someday, somebody is going to walk in and say, well, we got a lot of soybeans, Mr. President. And we're less dependent on foreign sources of oil because of biodiesel.”



President George W. Bush

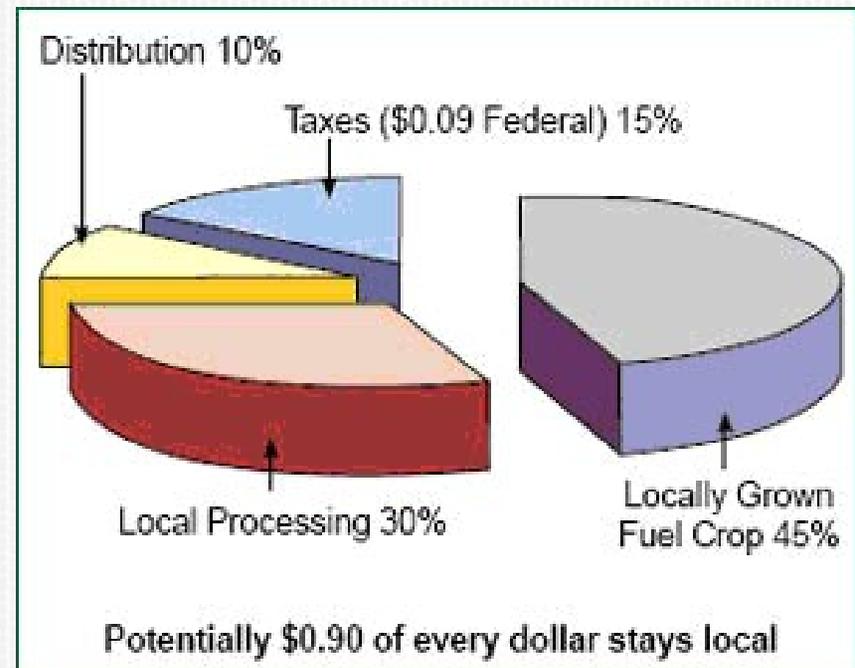
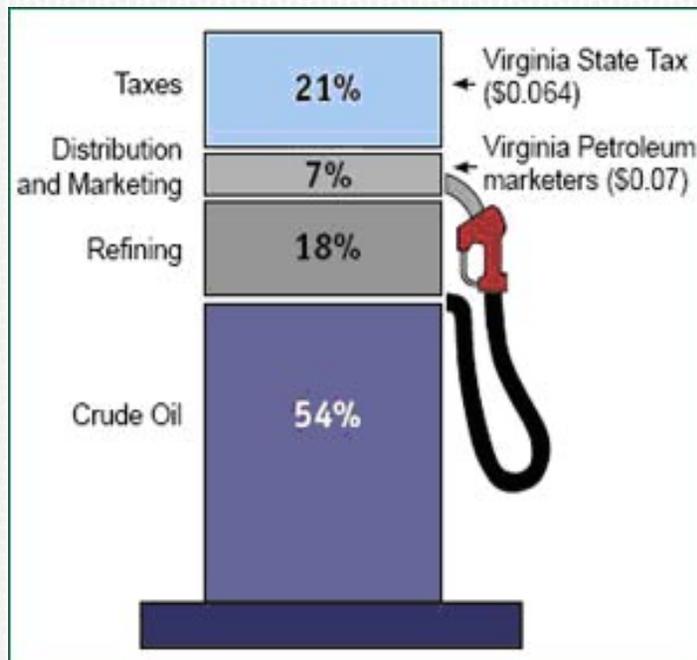
March 17, 2006

Economics



BIODIESEL USED IN VIRGINIA

Economic impact: The use of biodiesel in Virginia can have positive benefits for the state economy. Currently, for every \$1 spent buying diesel in Virginia, large portion of the premium goes to crude oil with only **\$0.134** staying locally through state tax and local distributor income (Figure 1). If locally produced biodiesel was used, for every \$1 spent, potentially **90 cents** would stay in the local or state economy (Figure 2).



AREA FARMER PARTICIPATION



Grow Canola

-  Bassett Facility requires 5000 acres
-  On- Farm Storage
-  Contracts/Growing agreements
-  Grading Seed
 - Moisture
 - Foreign Material
 - Visual
-  Off-Road Usage



OUR PLAN:

A “CLOSED LOOP” SYSTEM

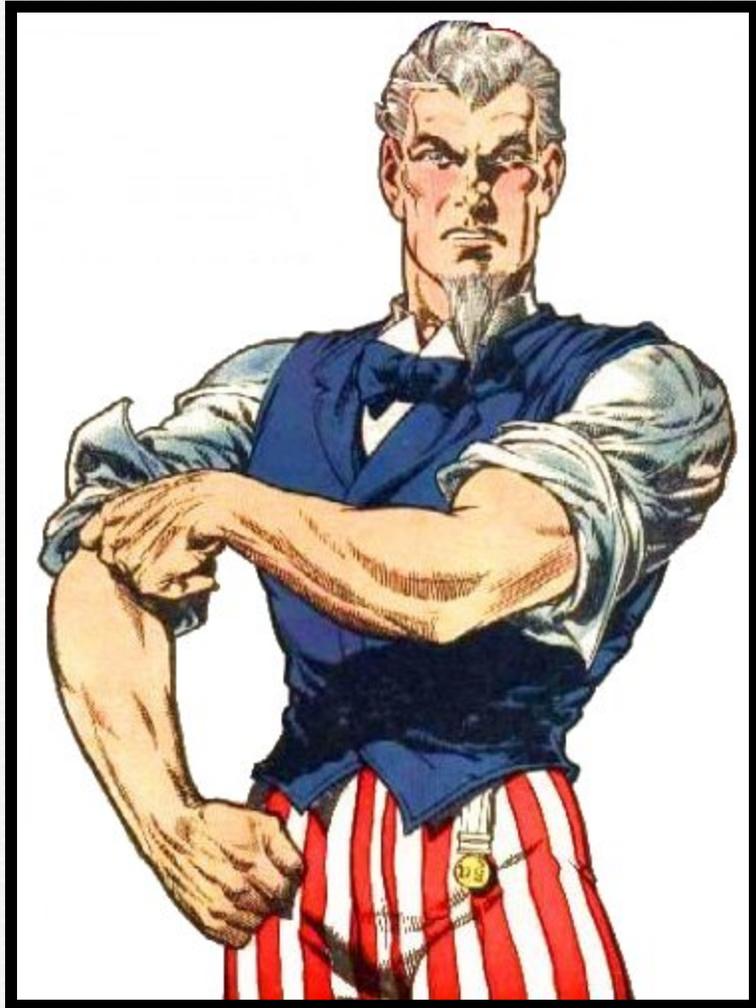


We grow it, We make it, We sell it



The story of

ROGER BANNISTER



Instead of
wringing our
hands, lets roll
up our sleeves
and get to
work !

Red Birch Energy.com



Energy

Independence Our Farms, Our Fuel, Our Future