

NBB and EPA: Where are we going together?



EPA Mobile Sources Technical Review Subcommittee

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Thank You

NBB appreciates the good working relationship with EPA over the years

- **EPA Fuels/Fuel Additive registration requirements**
- **CAA 211(b) Tier 1 (speciation) and Tier 2 (90 day subchronic) testing**
- **2002 draft emissions report**
- **ULSD implementation**
- **RFS implementation**
- **Inclusion of biodiesel in various grant programs and initiative**
 - **Clean School Bus**
 - **Regional Collaboratives**
 - **Others**

Industry Update



Biodiesel Markets

ON-HIGHWAY USERS

- Trucking
- Fleets
- Passenger Vehicles



EPACT REGULATED FLEETS

- Federal
- State
- Selected Utilities



HOME HEATING



MARINE

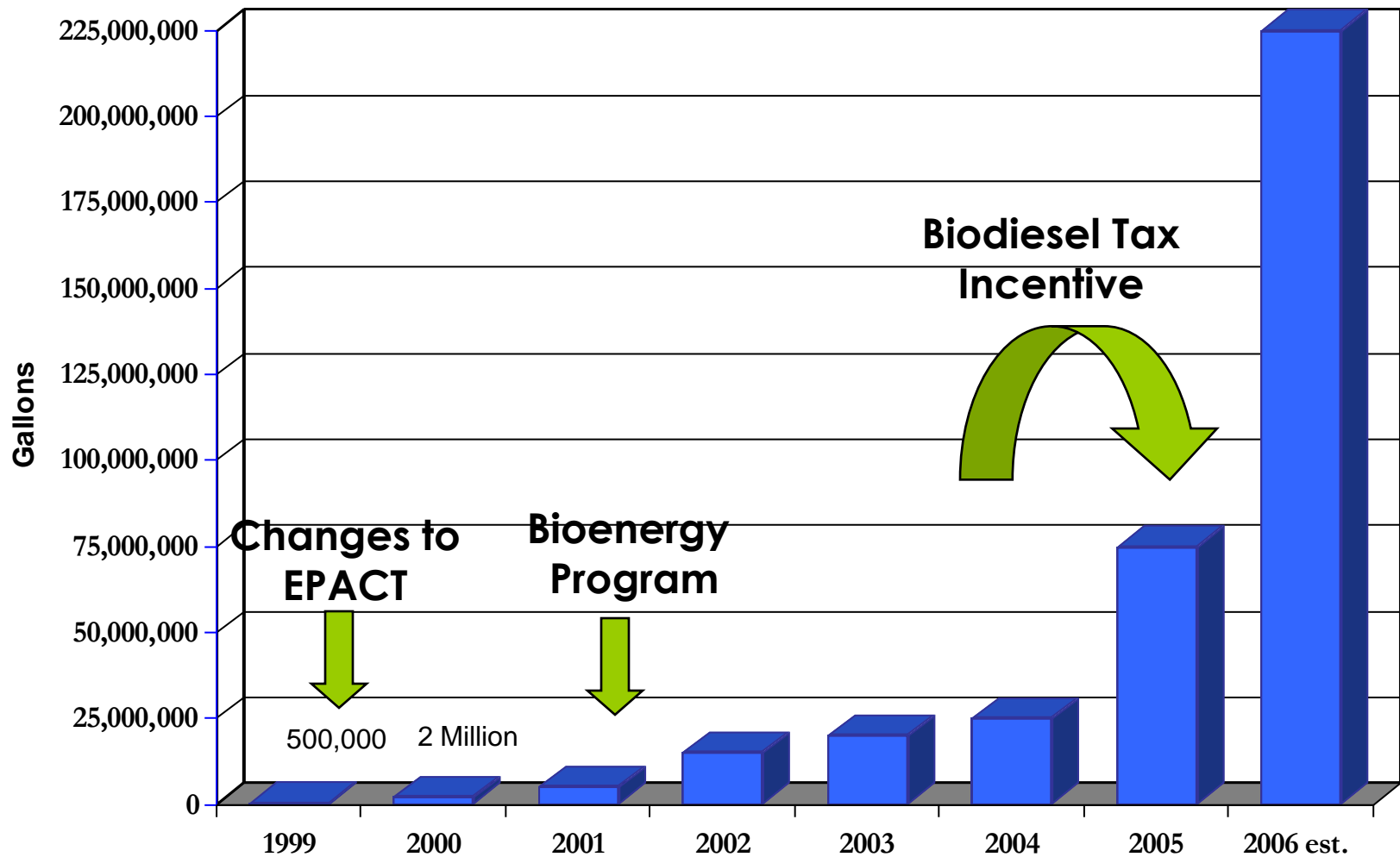
- Recreational
- Tour Boats
- Environmentally Sensitive Areas



AG AND OFF-ROAD USERS

- Lubricity Enhancement

US Biodiesel Production



Policy Remains Critical

- **Federal Policy has served as an effective catalyst for the biodiesel industry**
 - **Biodiesel Blenders Tax Credit**
 - **Renewable Fuel Standard**
 - **Small Agri-biodiesel Income Tax Credit**



Other Critical Issues

- **Research Needs**
 - **Biodiesel and 2007 Engine Technology**
- **Co-Product Value**
 - **Glycerine Application Development**
- **Biodiesel Raw Materials**
- **Consumer Acceptance**
 - **Downstream Fuel Quality Assurance**
 - **Enforcement of ASTM**

Biodiesel & 2007 Technology



NBB OEM Program—Three Prongs

- **B20 in existing vehicles (B20 FET)**
 - Plus: Oxidation Stability and ASTM

- **B20 in new vehicles (2007/2010 OEM)**
 - Preliminary results very positive
 - approximately \$11MM program

- **B20 in retrofits for existing vehicles**
 - Industry funded, just now starting

Impact of Biodiesel on Emissions

- ❑ NBB will continue to work with EPA to assess the net impact of NOx
- ❑ Biodiesel Emissions Collaborative Effort being planned
- ❑ One set of numbers for biodiesel
- ❑ State SIPs and PM emissions



Goals of 2007 Program

Assess the impact of B20 and lower biodiesel blends on 2007 and later fuel system, engine, and emission control technology

- ❑ **Performance and durability in 2010 medium duty engine**
- ❑ **Performance and durability in 2010 line-haul engine**
- ❑ **Performance and certification with aftermarket retrofit systems**
- ❑ **Fleet evaluation on post-2007 and retrofitted systems**

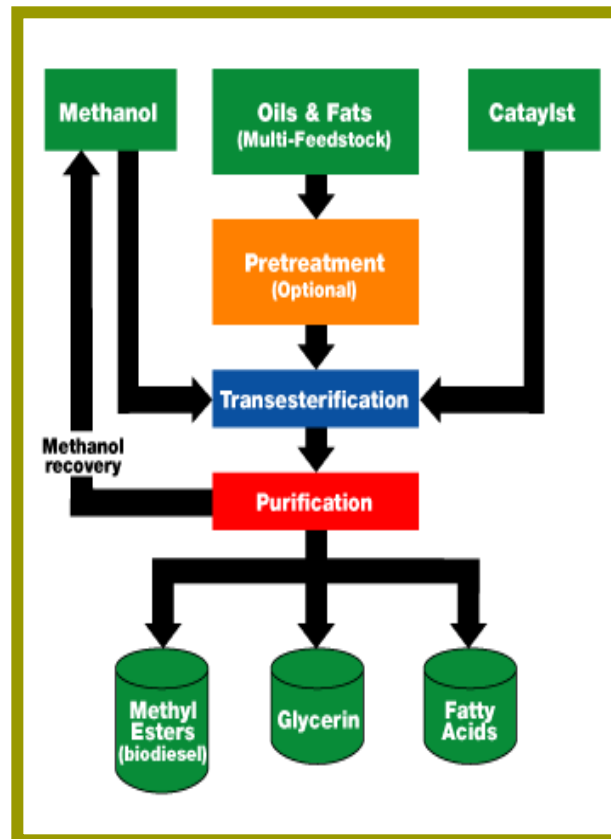
Glycerine Application Development



The Biodiesel Reaction

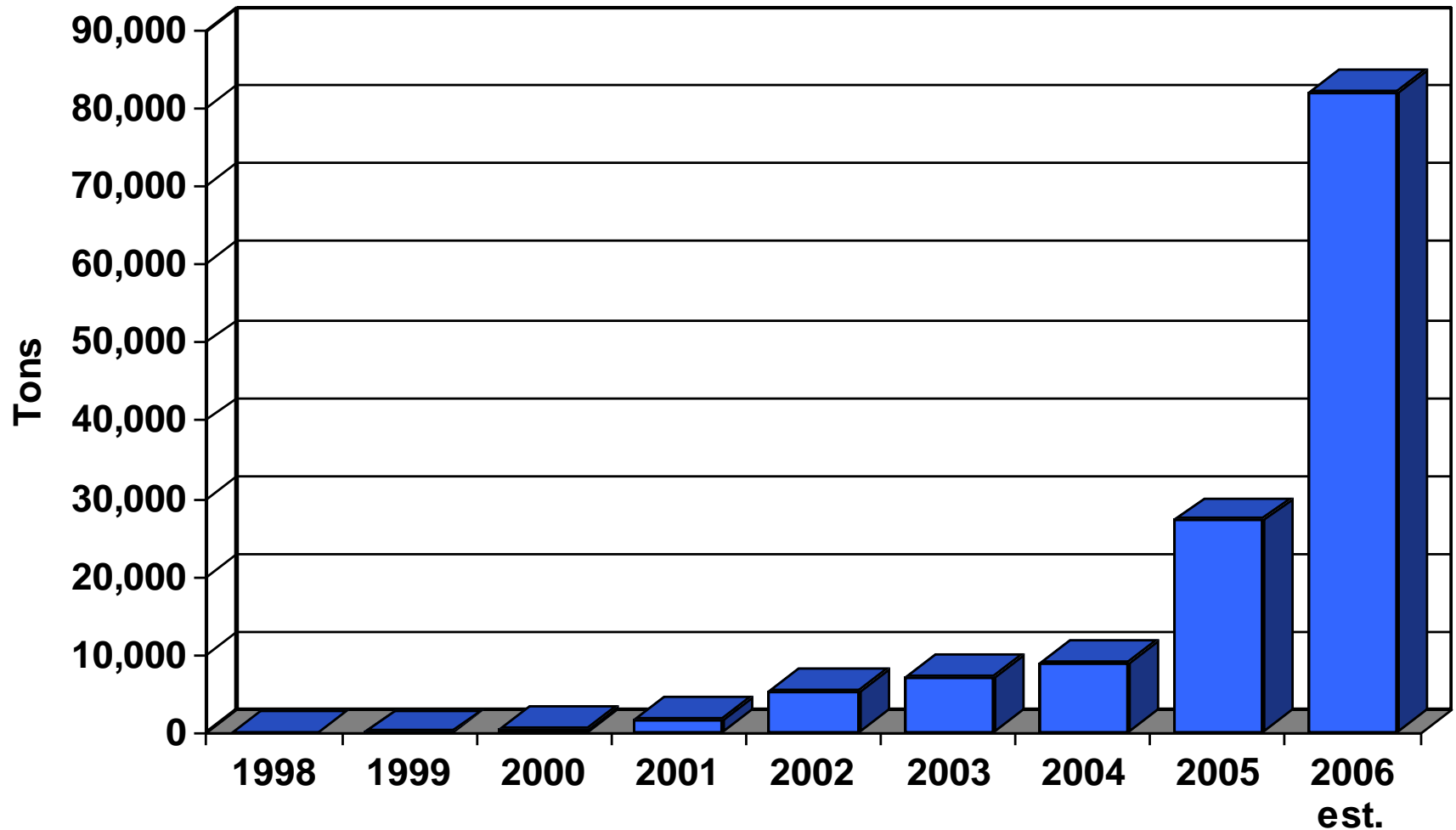
In the presence of a catalyst

Combining
Vegetable Oil
or
Animal Fat
(100 lbs.)
+
Methanol or
Ethanol
(10 lbs.)



Yields
Biodiesel
(100 lbs.)
+
Glycerine
(10 lbs.)

Estimated Glycerin Output from US Biodiesel Industry



Biodiesel Raw Materials

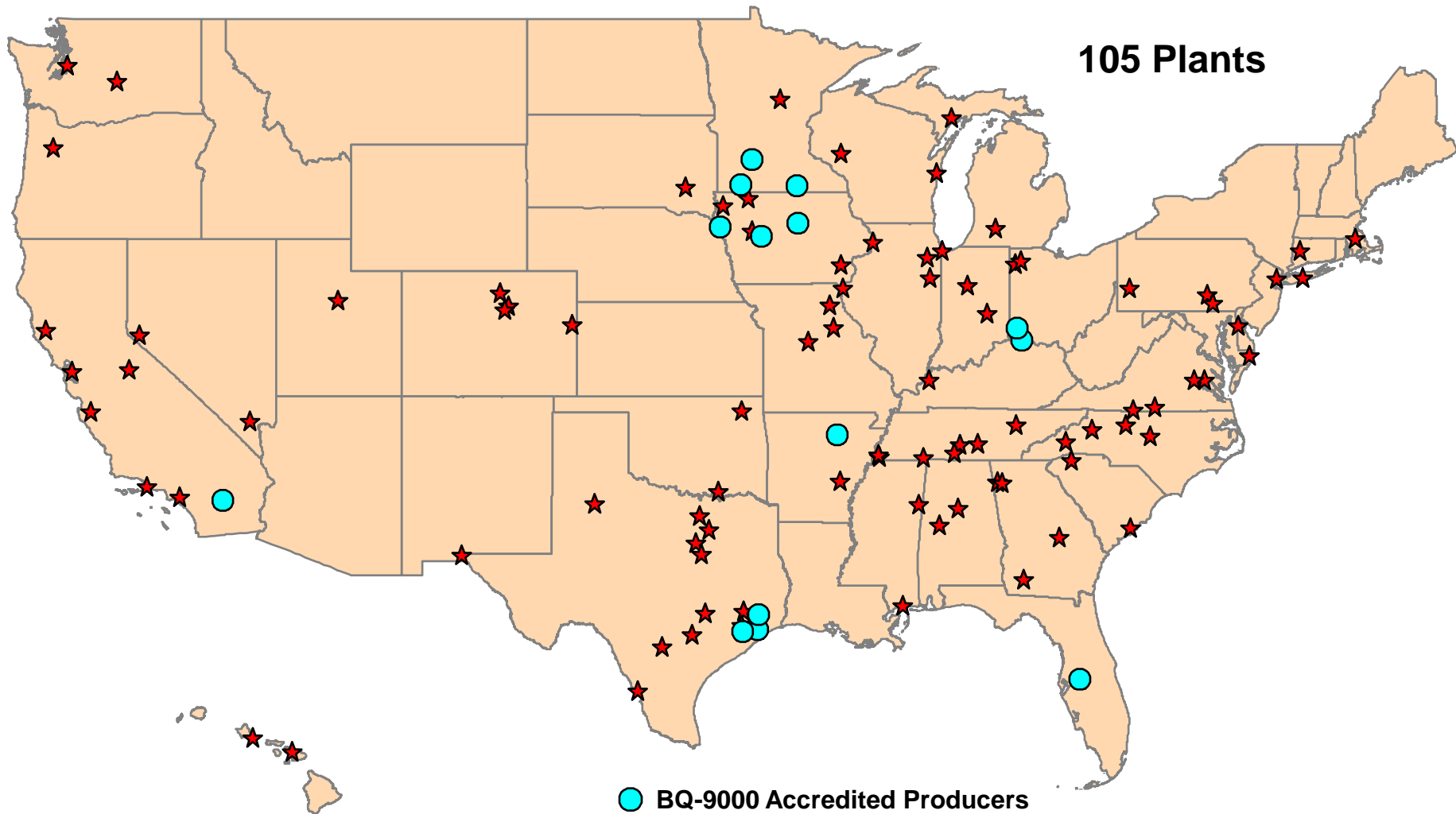


US Production Capacity History

	2001	2002	2003	2004	2005	2006	2007
Plants	9	11	16	22	45	86	105
Capacity (millions)	50	54	85	157	290	580	864

- ❑ **Capacity Information was based on information available in or around the month of September for each year.**
- ❑ **However, the 2007 information is based on data available on 1/31/07**

Production Locations (1/31/07)





**Will Feedstock Supply
Become a Natural Brake for
Growth?**

Raw Material Availability

- To date, soybean oil has been the predominant feedstock.
- Will there be a supply response?
 - Grow more beans?
 - Raise the means?
 - Change the genes?
- Additional Sources
 - Ethanol plants
 - High percentage oilseeds such as canola
 - Imports
 - Reduced exports
 - Mustard
 - Camelina
 - Algae

Goals of 2007 Program

Identify feedstock scenarios to increase raw material supplies in order to achieve up to a 5% national diesel replacement, a goal of the Department of Energy's Freedom Car Program.

- Identify market drivers for biodiesel use in the U.S. and globally and estimate future demand based upon mandates and national directives,
- Estimate current raw material supplies for the production of biodiesel; considering current competitive uses,
- Identify scenarios that would result in increased raw material supplies; including cropping rotations, variety improvement and/or modification, and novel feedstock production,
- Document implications of the World Trade Organization (WTO) on the U.S. biodiesel market, and
- Provide recommendations for future courses of action.

Goals of 2008 and beyond

- **Danforth Center will:**
 - **Carryout Recommendations of 07 Analysis**
 - **Economic impacts of different feedstock scenarios**
 - **Feasibility of various feedstock scenarios**
 - **Possibly engineer crops**
 - **Possibly evaluate Climate Change impacts**

Fuel Quality



Fuel Quality

- ❑ Fuel quality is of the **utmost concern and importance** to the biodiesel industry.
- ❑ ASTM D 6751 is the specification for biodiesel fuels irrespective of the feedstock source and/or processing method.
 - National Quality Program (BQ-9000) Launched for Biodiesel Marketers and Producers
 - Look for **BQ-9000 Certified Marketers:** Biodiesel's 'Good Housekeeping' Seal of Approval

BQ-9000 Seals



Goals of 2007 Program

Improve fuel quality and consumer acceptance of biodiesel and biodiesel blends.

- **Quality Assurance Programs**
 - Support of BQ9000
 - Host workshops throughout the US
- **ASTM Integration**
 - Fuel Testing
- **NCWM Quality Testing**
 - Education of state fuel regulatory agencies

Summary

- **NBB would like to continue our relationship by working with EPA:**
 - **Enforcement of ASTM standards and fuel quality**
 - **Examining Emissions Impact of Biodiesel**
 - **Integrating Biodiesel into Climate Change Models and related CO2 programs**

**Thank You for the Program
Support!**

