OIL: *Transporting* our Climate
One Vehicle at a Time

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Overview

- Introduce interesting and insightful facts about fossil fuels
- Explain why these facts are important
- Prove that burning fuel is affecting the climate
- Present a cleaner alternative
- Compare and contrast the old alternatives with the new
- Offer ways to get involved and make a difference
Many of the environmental problems our country faces today result from our fossil fuel dependence.

**Fossil fuel provides 80% of the world's energy needs** — the three fossil fuels are: coal, oil, and natural gas.

Petroleum accounts for nearly 40% of our country's energy — 97% of America's transportation fuels are satisfied by the use of oil.

Globally the average citizen uses about 4 barrels of oil a year — the average American uses about 25.

70% of the nation's goods are transported in diesel-powered vehicles, helping to make it America's primary commercial fuel.
Proof that oil effects our climate

- The burning of fossil fuels by humans is the largest source of emissions of carbon dioxide.
- In the United States, more than 90% of greenhouse gas emissions come from the combustion of fossil fuels.

The steady increase of greenhouse gases are contributing factor to the earth’s warming climate.
Coincidence or Science

Global Average Temperature and Carbon Dioxide Concentrations, 1880 - 2004

- Global Temperatures
- CO2 (ice cores)
- CO2 (Mauna Loa)

Year AD

http://www.whrc.org/resources/online_publications/warming_earth/images/Fig2-CO2-Temp.jpg
A Greener Alternative
What is Biodiesel?

- Renewable fuel
- Completely natural (contains no petroleum)—can be 100% vegetable oil based
- Reduces carcinogenic emissions as well as gases that enhance global warming
- Can be used in any diesel engine—in either pure form or blended with petroleum diesel
Pacific Biodiesel Texas

- Location: Carl's Corner, Hillsboro, Texas
- Capacity: 8,000 gallons per day - over 2 million gallons per year; designed for initial expansion to double capacity
- Feedstock: designed for multi-feedstock; goal is to utilize mostly locally farmed cottonseed oil and locally collected used cooking oil
- Target date for full production: end of August
- Distribution: Carl's Corner Truck Stop
How Does it Work? in comparison to petroleum

- When burned, petroleum emits carcinogens as well as carbon dioxide and other harmful gases.
- Biodiesel is produced through a chemical reaction of alcohol and animal or vegetable oils.
- Process is called transesterification, the reaction removes by-products that are not good for your engine—glycerin.
Why Biodiesel?

- **Power**
  - Can be used in existing engines without negative impacts to operating performance.

- **Efficiency**
  - Virtually the same MPG rating as regular diesel
  - Extends the life of the engine

- **Storage/Combustibility/Safety**
  - Because it's non-toxic, biodegradable, and non-flammable, handling and storage are safer than conventional petroleum diesel fuel.

- **Production/Refining**
  - Zero emissions from production facilities
Only renewable alternative diesel fuel that actually reduces major greenhouse gas components in the atmosphere.

In September 2006, in a report from the national laboratory of the U.S. Department of Energy, the National Renewable Energy Laboratory identified the advantages of using a B20 biodiesel blend:

- Reduces life-cycle petroleum consumption by 19%
- Reduces life-cycle CO2 emissions by 16%
- Further reduces hydrocarbon emissions by 20%
- Significantly reduces toxic emissions
- Reduces PM emissions
- No impact on NOx
How Can You Help?

- **Be educated:**
  - “Diesels really make sense only if you care about carbon dioxide emissions and global warming, and like most Americans, I don't. I even think warming up Canada a bit might be a good idea.” – Flint
  - Diesel passenger vehicles in the US has increased by 80% from year 2000-2005 (301,000-550,000)

- **Spread the word**
  - Tell a friend
  - Bumper Stickers

- **Support local efforts**
  - [http://www.austinbiofuels.com/](http://www.austinbiofuels.com/)
Work Cited