



Florida Climate Change Conference

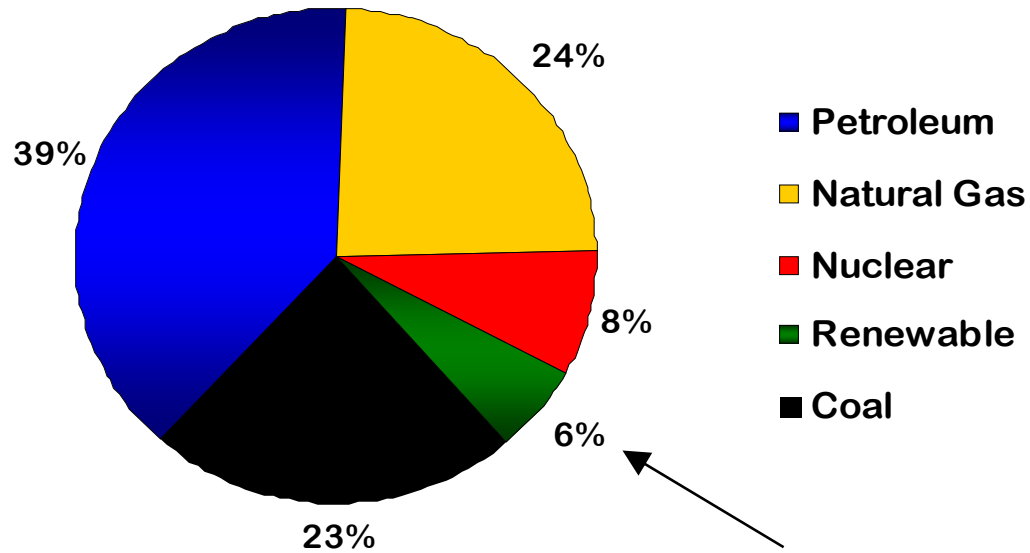
Current Initiatives and Technologies
May 10, 2007



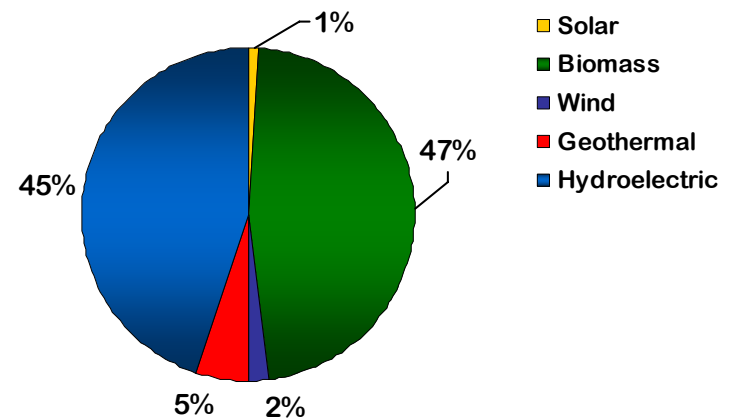
Florida Department of Agriculture
and Consumer Services
CHARLES H. BRONSON COMMISSIONER



US Energy Supply (2004)



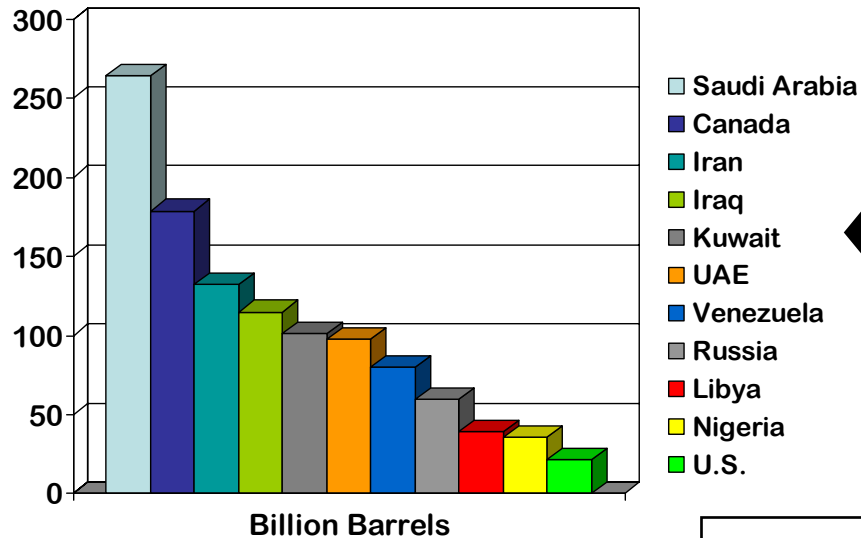
U.S. Renewable Energy Supply



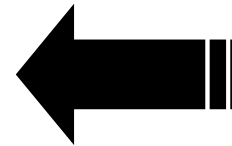
Source: Energy
Information
Administration



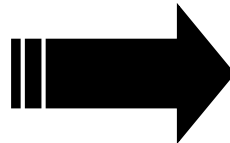
World Oil Reserves



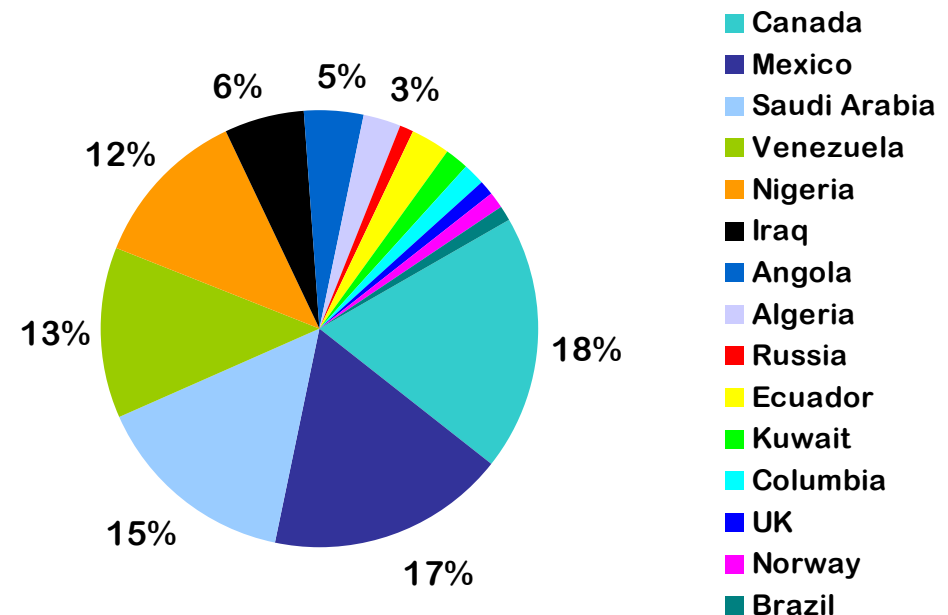
Who has all the oil?



Where do we get our oil from?



US Crude Imports



Source: Energy Information Administration



Florida's Current Fuel Situation

- We depend almost exclusively on other states and nations for supplies of oil and gasoline
- We use 10.5 billion gallons of gasoline and diesel fuel per year and consumption is growing by 300 million gallons per year
- Florida is the 3rd largest consumer in the U.S.
- Limited availability of ethanol/biodiesel





25x'25

AMERICA'S
ENERGY FUTURE

***By the year 2025,
America's farms, ranches
and forests will provide 25
percent of the total energy
consumed in the U.S.
while continuing to
produce safe, abundant
and affordable food, feed
and fiber.***

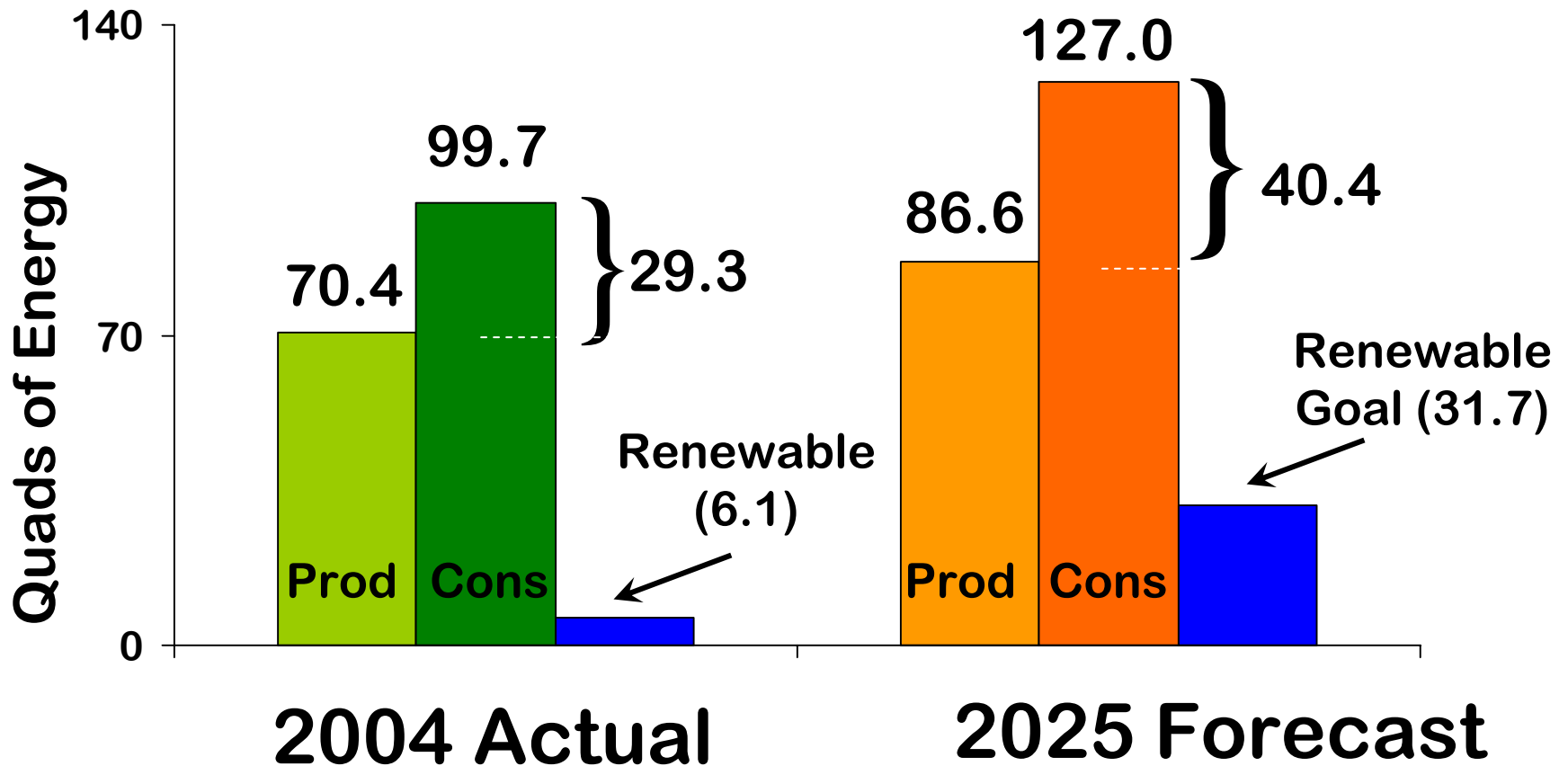


25x'25 Initiative

- Organized to explore agriculture and forestry's role in energy production
- Seeks to forge consensus on a new energy future
- Focuses on economic, national security and environmental benefits
- Endorsed by more than 475 groups and leaders



Total Domestic Energy Production and Consumption



Source: EIA Annual Energy Outlook 2006



25x'25 goal will be met by...

- Producing transportation fuels
- Harnessing wind energy
- Converting biogas emissions
- Capturing solar energy
- Providing biomass for generating heat and power



25x'25 Action Plan: Charting America's Energy Future

- The Action Plan calls for supportive policies in each of five areas:
 - Increasing production of renewable energy
 - Delivering renewable energy to markets
 - Expanding renewable energy markets
 - Improving energy efficiency and productivity
 - Strengthening conservation of natural resources and the environment

www.25x25.org



Benefits to Agriculture

- Increased farm income
- Added value uses for crops, livestock, agricultural residues, and byproducts
- Alternative agricultural and rural enterprises
- More productive use of marginal land
- Resolution of air, water and soil quality problems
- Increased reliance on new markets to maintain the viability of agriculture
- Major impact on rural development with many job opportunities being created through the processing of agricultural products and byproducts



Farm to Fuel

570.954 Farm-to-fuel initiative.--

- (1) The department may develop a farm-to-fuel initiative to enhance the market for and promote the **production and distribution of renewable energy from Florida-grown crops**, agricultural wastes and residues, and other biomass and to enhance the value of agricultural products or expand agribusiness in the state.
- (2) The department may conduct a statewide comprehensive information and education program aimed at educating the general public about the **benefits of renewable energy and the use of alternative fuels**.
- (3) The department shall coordinate with and solicit the expertise of the state energy office within the Department of Environmental Protection when developing and implementing this initiative.

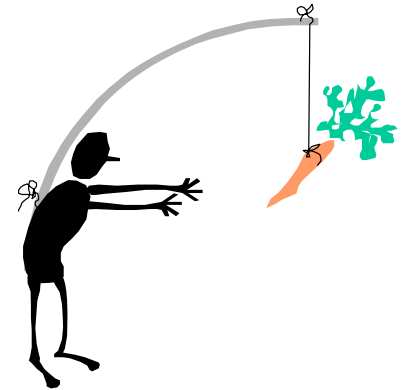


Farm to Fuel Grants Program

- The Farm-to-Fuel Grants Program is established within the department to provide matching grants for bioenergy projects. Such grants may be made for research, demonstration, or commercialization projects relating to the production of bioenergy or feedstocks used in bioenergy production.
- "Bioenergy" means energy produced from organic matter that is available on a renewable or recurring basis, including crops and trees, agricultural food and feed crop residues, wood and wood wastes and residues, aquatic plants, grasses, animal wastes and residues, and other organic waste materials.
- \$25 million appropriation



Florida Biofuel Production and Sales Incentives



- Voluntary
- Promotes production and distribution of ethanol and biodiesel in Florida
- Reduces dependency on foreign oil, better for the environment, creates new markets and increased farm income for Florida agriculture
- Creates targets for biofuel consumption beginning at 3% for 2008 ramping up to 10% by 2012
- Provides incentives to producers and retail dealers of biofuels



Farm to Fuel Summit

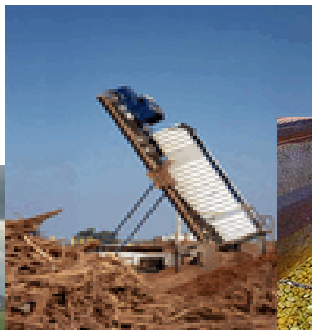
- 2006 - Orlando
 - More than 300 participants
 - Topics included ethanol/biodiesel research, production, distribution and incentives
- 2007 - July 18-20, St. Petersburg
 - Agenda expanded to include discussions on biomass, and in particular, forest resources





Biomass in Florida

- 43,000 farms and ranches
- 10 million acres cropland
- 15.5 million acres of timberland
- 3.4 million acres of pastureland
- Marginal land can be put in crops that are well-suited to Florida to make ethanol
- Fast-growing trees and crops
- Agricultural residues
- Animal manures
- Forest debris and thinnings, undergrowth in timber stands
- Leftover materials from the wood products industry
- Urban wood waste
- Invasive species





Ethanol

- An alcohol-based alternative fuel *typically* produced by fermenting and distilling starch crops that have been converted into simple sugars.
- Ethanol can be blended with gasoline to create E85, a blend of 85% ethanol and 15% gasoline or up to 10% for use in all vehicles.
- Cellulosic Ethanol - A blend of ethanol that can be produced from a great diversity of biomass including waste from urban, agricultural, and forestry sources.

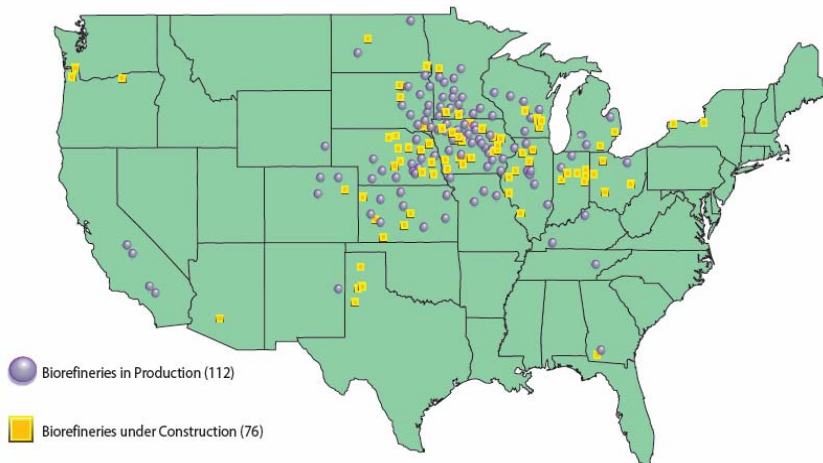




U.S. Ethanol Industry

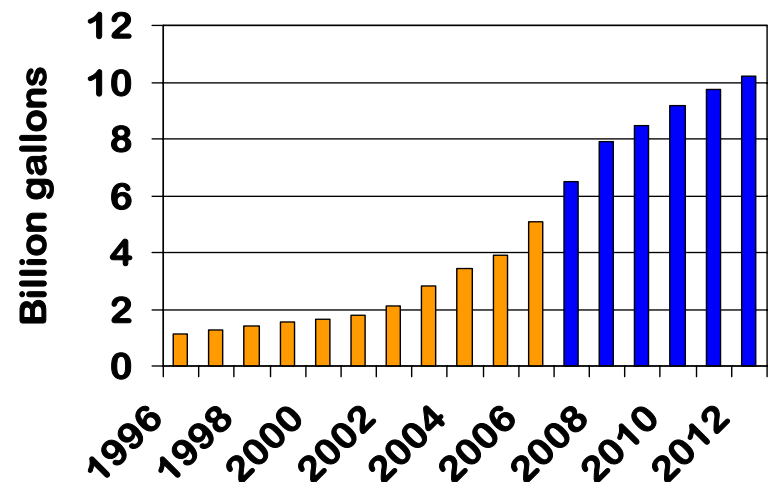
(as of May 2007)

- 117 plants with nearly 6 bgy capacity
- 80 plants under construction and 8 expansions will add more than 6.5 bgy of new production
- No Florida plants



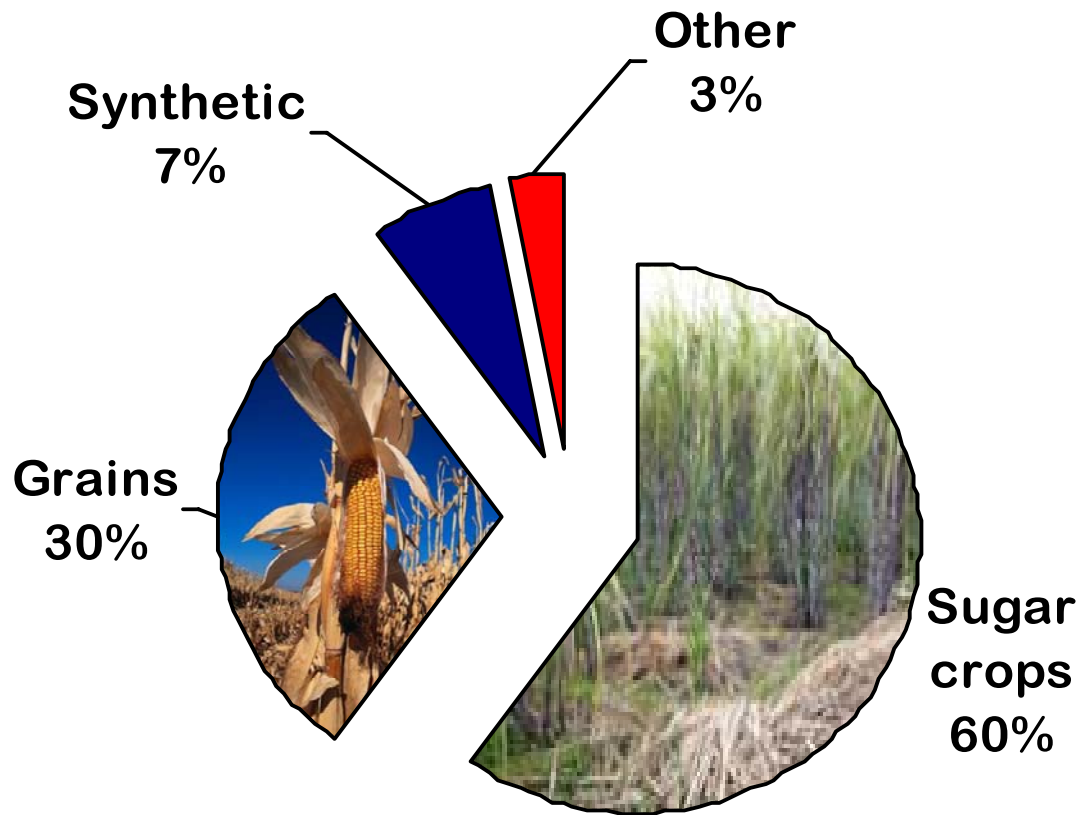
Source: Renewable Fuels Association
1.29.07

U.S. Ethanol Production





Globally most ethanol is produced from sugar crops...



... **in the U.S.** virtually all ethanol is made from grains



Biodiesel

- Biodiesel means the mono-alkyl esters of long-chain fatty acids derived from plant or animal matter for use as a source of energy.
- Biodiesel can be blended with diesel to create a blend for use in all vehicles.
- Most prevalent feedstock is soybean although others show promise (algae, jatropha).

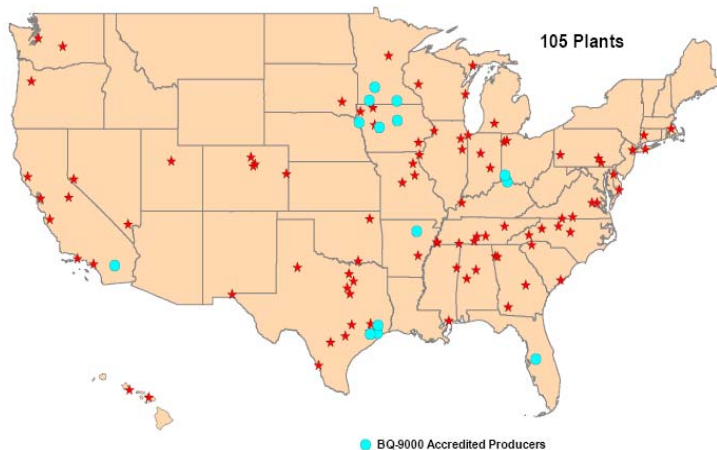




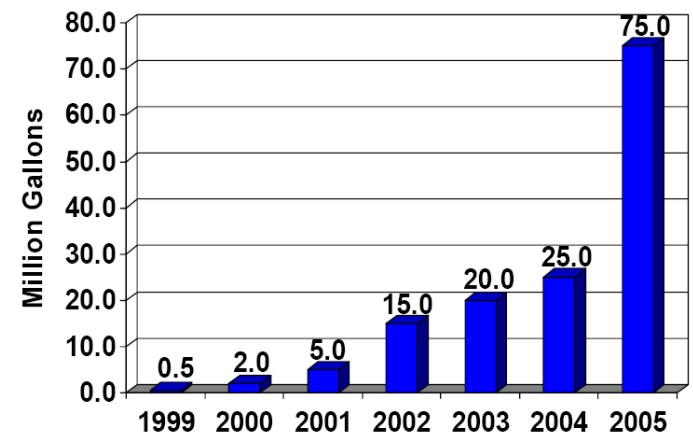
U.S. Biodiesel Industry

(as of January 2007)

- 105 plants with over 864 mgy capacity
- 77 plants under construction and 8 expansions will add 1.7 bgy
- One Florida plant, 18 mgy



Estimated US Biodiesel Production



Waste to Energy





Anaerobic Digesters

- Benefits
 - Reduced pathogens
 - Reduced odor and odor producing compounds
 - Production of “green energy” and reduced dependence on fossil fuels
 - Biogas produced from one day’s manure from 100 cows has about the same energy content as 1 barrel of oil
 - Improve water quality
 - Produces high quality byproducts
- Barriers
 - Initial capital costs
 - According to the EPA, cost for a manure digester is ~\$550 per COW
 - Requires modifying lagoons or installing new digester tanks
 - Interconnection issues
 - Compensation for excess power



Florida Climate Change



Alex Sink, Chief Financial Officer
Charles Bronson, Commissioner of Agriculture



WELCOME TO FLORIDA CLIMATE CHANGE!

Commissioner of Agriculture and Consumer Services

Charles Bronson and **Chief Financial Officer Alex Sink** are proud to present *Conversations on Climate Change*, a series of Cabinet workshops that will explore how Florida's economy could be affected by climate changes and our state's opportunities to expand renewable energy sources. Each workshop will feature a new topic and national experts in a variety of areas, including the science of rising sea levels, renewable energy sources, and the impact of climate change on the insurance and finance industries. These sessions will also give elected officials, business leaders and Floridians the opportunity to understand how these challenges and potential solutions present opportunities for new areas of economic growth for our state. The *Conversations on Climate Change* series began with [*Climate Change: An Overview*](#) on Tuesday, April 3, 2007, at 11:00 a.m. after the Florida Cabinet meeting. Future workshops are scheduled immediately following the June 12, September 18, and November 14, 2007, Florida Cabinet meetings. An archived Webcast of the meeting will be linked from this page.



Commissioner Charles Bronson launched Florida's Farm to Fuel program, which partners with "25x25," the national bi-partisan organization whose goal is to see U.S. agriculture produce 25 percent of the nation's energy needs by the year 2025.

2007 Farm to Fuel Summit

Florida Department of
Agriculture & Consumer Services
July 18-20, 2007
Marriott Renaissance
Vinoy Resort and Golf Club
St. Petersburg, Florida



www.floridafarmtofuel.com