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## Biofuels and South Carolina

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## Outline

- Introduction to the SC Energy Office
  - State Energy Consumption & Projections
  - Reasons to promote ethanol and biodiesel
  - State Incentives for ethanol and biodiesel production
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## S.C. Energy Office Mission

To increase energy efficiency and diversity, enhance environmental quality and save energy dollars for South Carolina.



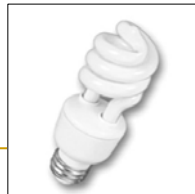
## History of SCEO

- Initially established in 1973
- Formally constituted into law by the S.C. Energy Conservation and Efficiency Act of 1992
- Now an office of the State Budget and Control Board



## Programs

- Transportation Alternatives
- Renewable Energy
- Energy Efficiency
- Energy Education and Outreach
- Radioactive Waste Disposal
- Energy Planning and Forecasting



## Clients

- Business and Industry
- State Government
- Local Government
- School Districts
- College and Universities
- Non-profits
- Homeowners
- Utilities



## Activities

- Technical Assistance
- Training
- Financial
- Information
- Planning



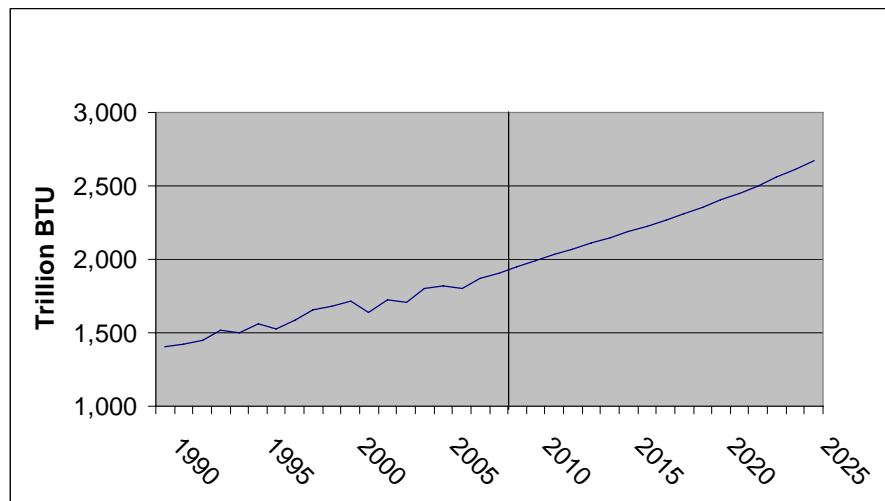
## South Carolina energy overview

- South Carolina has no conventional energy resources of its own; it has no coal, no oil, no natural gas and no uranium.
- Therefore, we must buy these resources from other states and other countries, costing South Carolina money and jobs, and risking supply disruptions.
- South Carolina is highly dependent on coal for electricity and oil for transportation fuel.

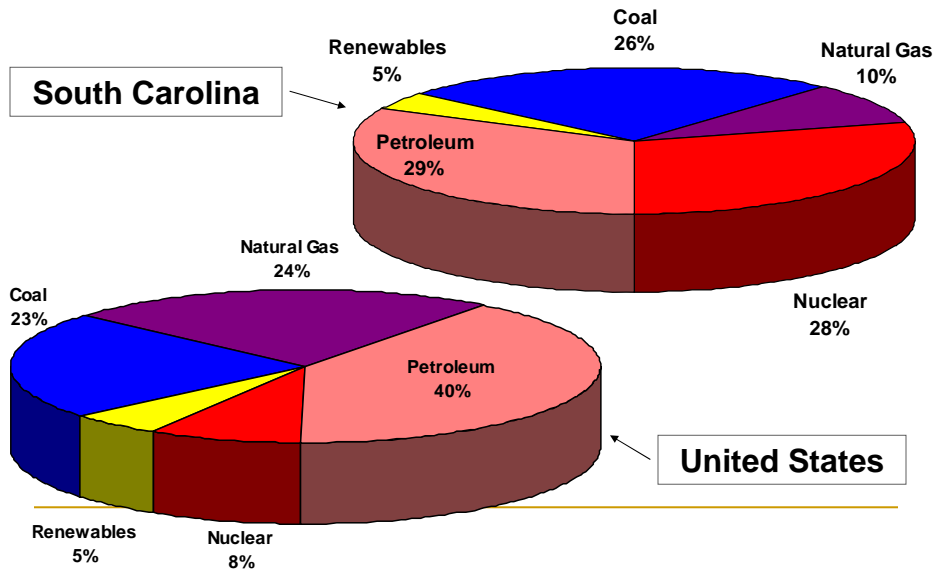
## S.C. energy statistics

- S.C. ranks **15<sup>th</sup>** nationally in total energy consumption per capita.
- S.C. spends **\$20 billion** on energy annually.

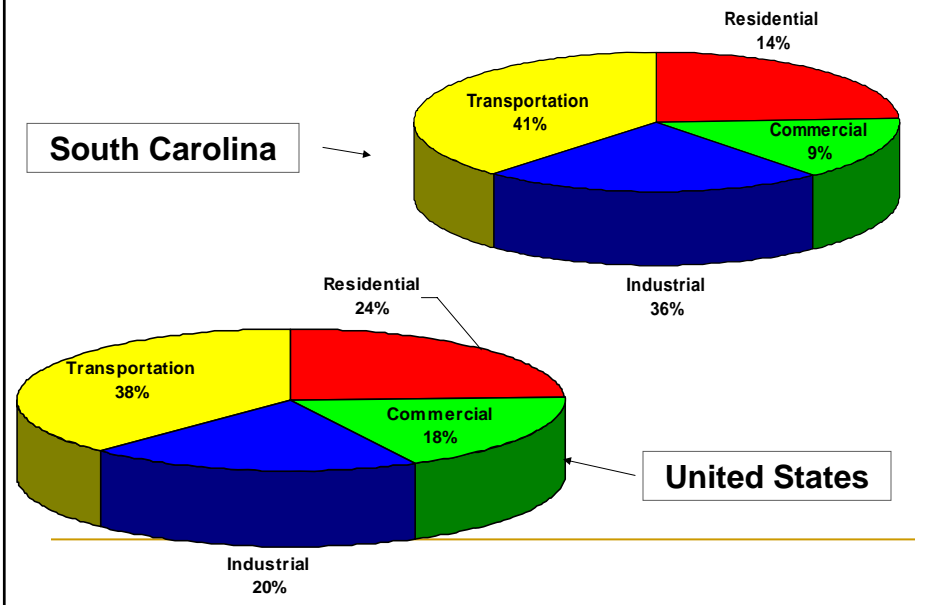
## S.C. total energy consumption



## S.C. total energy consumption by fuel type



## S.C. total end-use energy consumption by sector



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## Concerns about oil

- South Carolina is **13<sup>th</sup>** in the nation in per capita motor fuel consumption.
  - In 2007, S.C. spent **\$8.7 billion** on motor fuel.
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## Growth rate of oil consumption, 1990-2005

- United States – 22%
  - World – 25%
  - South Carolina – 31%
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## Ethanol and biodiesel benefits

- **Economic Benefits**
  - Improve national and local economies
  - Create jobs
  - Local tax bases are significantly expanded
- **Security Benefits**
  - Decrease the amount of energy we import
- **Environmental Benefits**
  - Up to 68% fewer greenhouse gas emissions
  - About 55% fewer nitrogen oxide emissions
  - Contain virtually no sulfur



## Effect on S.C.

	Gasoline/Diesel	Corn Ethanol/ Biodiesel	Advanced Ethanol/ Advanced Biodiesel
Amount yearly spent in S.C.	\$8.7 billion	\$51.8 million	N/A
Possibility of production in S.C.	None	Yes	Yes
Impact on health costs	Very high	Very minimal	Very minimal
Impact on S.C. economy	Very negative	Potentially positive	Potentially very positive

## Biofuels as part of the solution

- In 2006, the SCEO established a new organization, the SC Biomass Council, to recommend legislative opportunities that would advance the biomass energy industry.
- In January 2007, the SCBC released recommendations which were integrated into H.3649 “Energy Freedom and Rural Development Act.”
- A version of bill passed in 2007 and was improved in 2008.

## Ethanol and Biodiesel Production Credit

- A taxpayer can claim a corporate income tax credit for gallons of ethanol and biodiesel produced for up to 60 months, for up to 125 million gallons.
- \$0.20 per gallon for corn-based ethanol or soy-based biodiesel up to 25 million gallons a year.
- \$0.30 per gallon for biodiesel from feedstocks other than soy-oil and ethanol from feedstocks other than corn up to 25 million gallons a year.
- Credit goes down to \$0.075 after the first 5 years.
- Maximum amount of credit that could be claimed for corn-based ethanol or soy-based biodiesel = **\$33,500,000**
- Maximum amount of credit claimed for non-corn or non-soy based = **\$39,750,000**

## Ethanol and Biodiesel Equipment Credit

- ❑ Taxpayer may claim up to 25% of the cost to construct or renovate and equip a facility to produce ethanol and biodiesel.
- ❑ There is no cap on the total amount a taxpayer may claim.
- ❑ Ex: A \$100,000,000 facility would be eligible to claim up to **\$25,000,000**.

## Ethanol and Biodiesel Dispensing Equipment Credit & Incentive Payment

- ❑ Taxpayers may claim an income tax credit up to 25% of the cost of installing equipment to distribute E100 or B100 or to dispense fuels containing E70 or greater at a new or existing facility.
- Between 2009 and 2012 a retailer may claim an incentive payment equal to \$0.05/gallon for E70 or greater and \$0.25/gallon for each gallon of pure biodiesel (must be blended to B2 or greater).
- No limit on payment for retailer or wholesaler.
- Ex: retailer sells 1,000,000 gallons of B100 = **\$250,000** payment

## Biodiesel and Ethanol Fuel Quality Testing

- Free alternative fuels testing for registered in-state retailers and fuel producers.



## Advanced Fuel Research Credit

- ❑ A taxpayer may claim up to 25% of costs associated with cellulosic ethanol and algae-based biodiesel research and development.
- ❑ Credit is capped at \$100,000 per taxpayer for all years.
- ❑ Unused credits may be carried forward up to 5 years.



## S.C. Renewable Energy Loans & Grants

- Renewable Energy Revolving Loan Program to help assist individuals and organizations build renewable energy production facilities. The loan would be available for up to 50% of the cost with a maximum of \$250,000 per application.
- Renewable Energy Grant Program offers matching funds up to \$200,000 for research and demonstration projects and planning funds up to \$10,000 to offset costs of applying for federal grants.

## South Carolina Biomass Council

- Hub of biomass activities in the state since 2006
- Over 130 members dedicated to promoting biomass energy production and use
- Quarterly information forums
- Public outreach
- Legislative advocacy



## South Carolina Biomass Council

- In 2008, saw the passage of the Energy Freedom and Rural Development Act, a series of biomass energy incentives and facilitators based on recommendations by the South Carolina Biomass Council.



## S.C. Renewable Energy One-Stop Shop

- Designed to assist renewable energy businesses interested in locating in South Carolina. The One-Stop Shop can provide important background information, provide a step-by-step analysis of state incentives and requirements, and concisely answer questions.

## S.C. Renewable Energy One-Stop Shop

- ❑ Department of Health and Environmental Control
- ❑ Department of Commerce
- ❑ Department of Agriculture
- ❑ Department of Revenue
- ❑ State Fire Marshal
- ❑ SC Energy Office
- ❑ SC Forestry Commission
- ❑ SC Research Authority
- ❑ New Carolina/Carolina Competitiveness Council
- ❑ SC Rural Development Council
- ❑ Clemson Institute for Economic and Community Development (CIECD)
- ❑ Norfolk Southern
- ❑ SC Association of Railroads
- ❑ US Department of Agriculture Rural Development Office
- ❑ Palmetto State Clean Fuels Coalition
- ❑ SC Biomass Council
- ❑ SC Solar Council

## In-state purchasing requirements

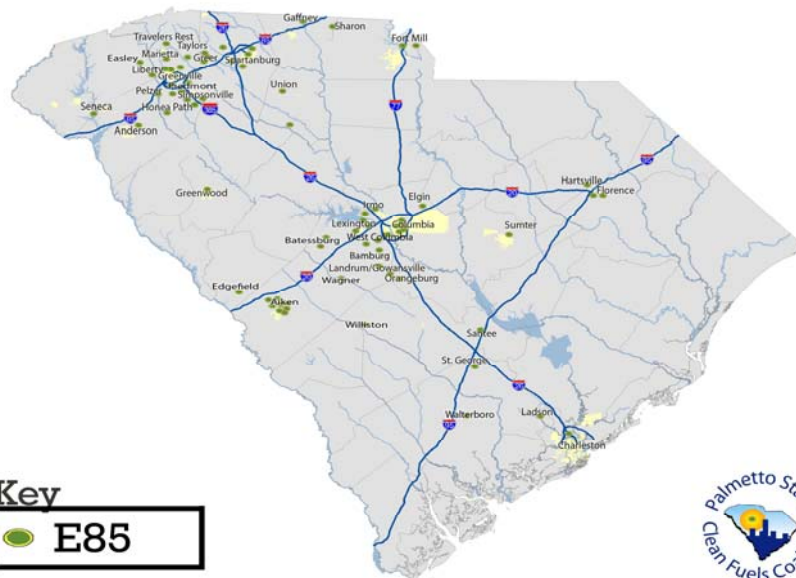
- ❑ All state-owned fueling facilities must contain at least B5 in all diesel pumps.
- ❑ The school bus fleet is preparing to use up to B20.
- ❑ Eventually the state may use up to 3 million gallons of B100 annually.



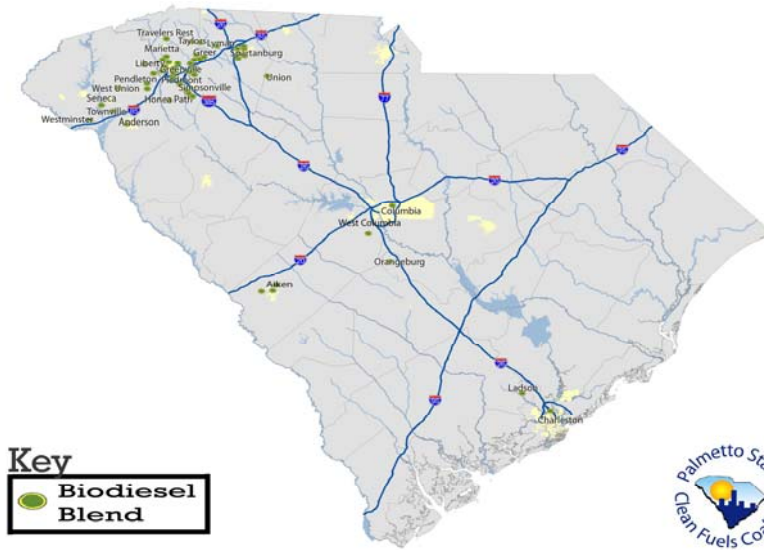
## Biofuel use in S.C.

- 71 ethanol (E85) pumps, 54 biodiesel pumps
- Approximately 45 million gallons of biofuels sold in FY2008 – over 3X the amount sold in previous year.
- Biofuel sales in FY2008 represented 1.5% of motor fuels sold in the state.

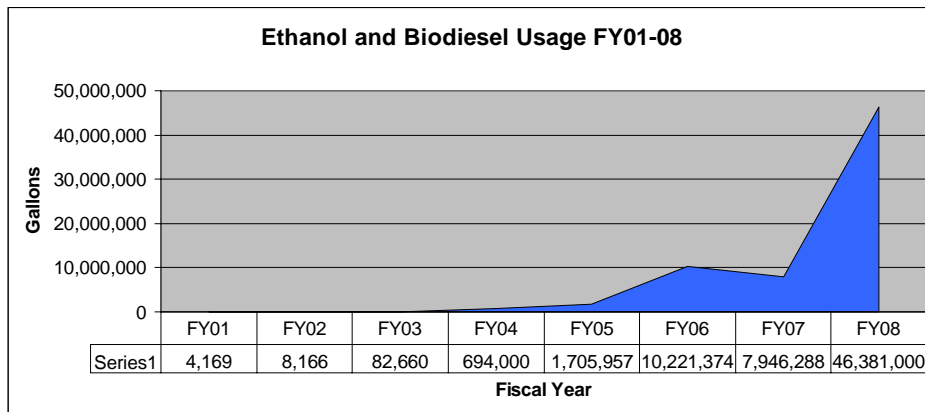
## E85 stations in S.C.



## Biodiesel stations in S.C.



## Biodiesel and Ethanol Use in S.C.



## Existing infrastructure

- Existing Biodiesel:
  - Carolina Biofuels, LLC – Taylors: projected 40 MG in 2008
  - Carolina Soya/Ecogy Biofuels, LLC – Estill: projected 15 MG in 2008
  - Southeast Biodiesel – Charleston: projected 6 MG in 2008
- Biodiesel Under Construction:
  - Greenlight Biofuels – Laurens: projected 10 MG
  - Aiken Biofuels, LLC – Warrentville: projected 10 MG
- Ethanol
  - East Coast Ethanol – Chester Co.: projected 110 MG
  - Osage Bio Energy – Union Co.: projected 65 MG

## Palmetto State Clean Fuels Coalition

- Established in 2003 as part of the U.S. Department of Energy Clean Cities initiative to encourage transportation fuel alternatives.

### Highlights:

- Obtained numerous grants for alternative fuel infrastructure for E85, B20, CNG, and propane and CNG vehicles in SC
- Over 300 individual stakeholders
- Organized dozens of major events over the past five years including Odyssey Days, Biodiesel Fuel Quality Symposium, and Beyond a Billion Gallons event



## Conclusion

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