



Jill Stuckey, Director
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Center of Innovation - Energy



Overview



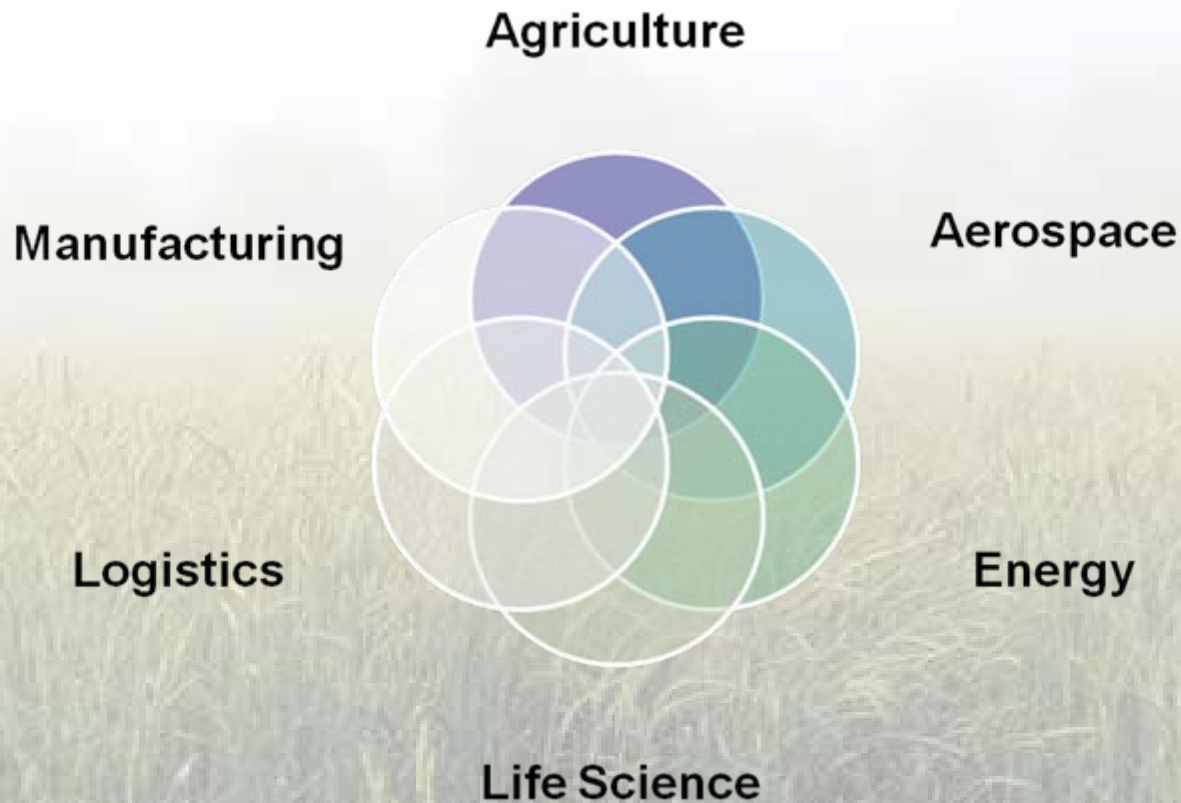
- Georgia's Centers of Innovation
- Drivers
- Regional Strength
- Current Research and Development
- Considerations
- State of the Industry

What is a Center of Innovation?



**The Georgia Centers of Innovation
are the critical link between
strategic industries, research
universities, financial resources,
and the regulatory community.**

Georgia Centers of Innovation



Our Mission



Georgia®
Centers of Innovation

Energy

***“To increase production and use
of renewable energy and
alternative fuels in Georgia”***

The Governor's Directive

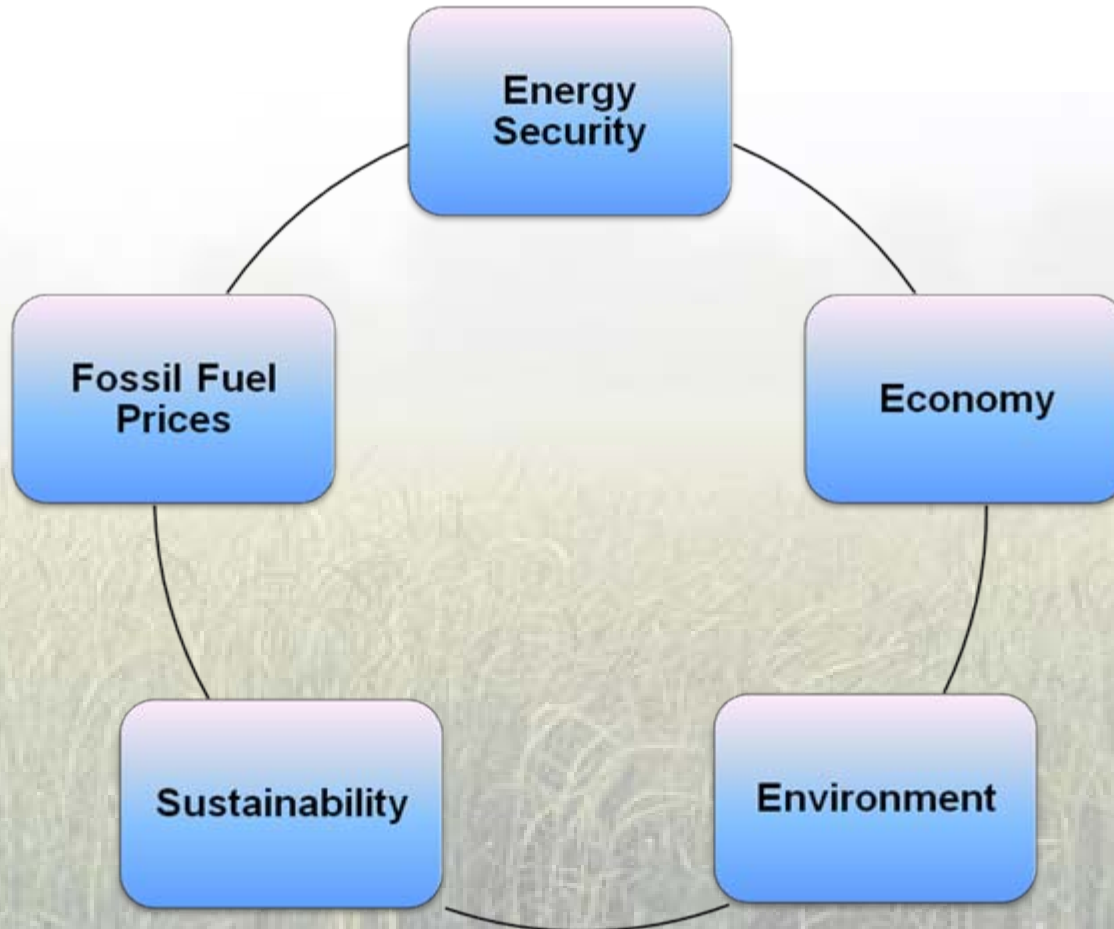


- ***Grow the Feedstock in Georgia***
- ***Produce the Fuel in Georgia***
- ***Use the Fuel in Georgia***

Drivers



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Energy



One Stop Shop



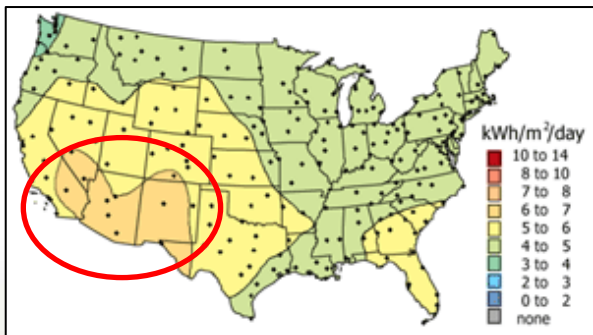
- **Pre-screened**
- **Invitation only**
- **Contact Info**
- **Permitting Checklist**
- **One Hour**
 - -- Present
 - -- Q & A
 - -- Roundtable

One Stop Shop

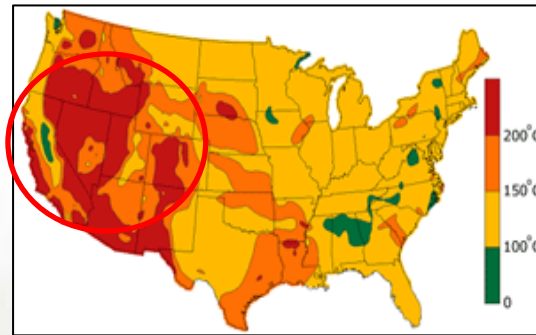


- Energy Innovation
- Agriculture Innovation
- Governor's Office
- Lieutenant Governor's Office
- GA Environmental Facilities Authority (GEFA)
- GA Department of Agriculture
- GA Department of Natural Resources
- GA Department of Revenue
- U.S. Environmental Protection Agency
- GA Department of Community Affairs
- GA Department of Economic Development
- Division
- GA EPD Small Business Environmental Assistance Program
- GA EPD Air Protection Branch
- GA Forestry
- Herty Advanced Materials Development Center
- State Fire Marshall
- United States Department of Agriculture
- University of Georgia
- Georgia Tech
- Georgia Railroad Association
- UGA Small Business Development Center

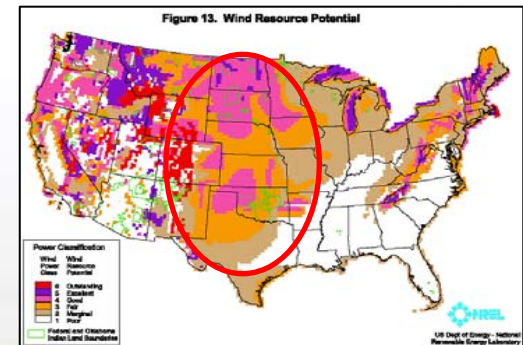
Regional Strength



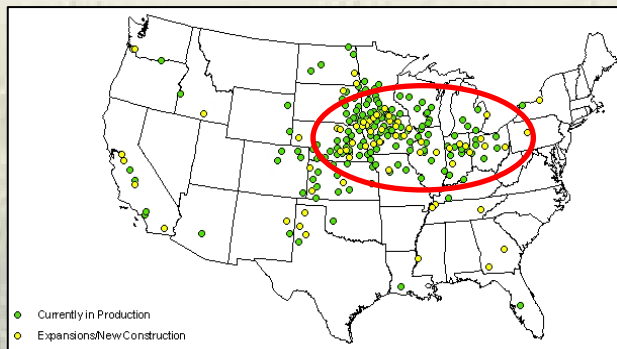
Solar



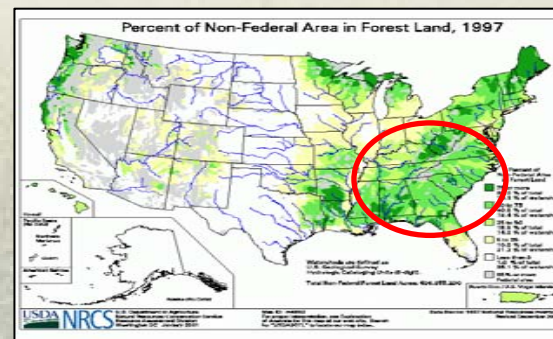
Geothermal



Wind



Biofuel / Corn Ethanol



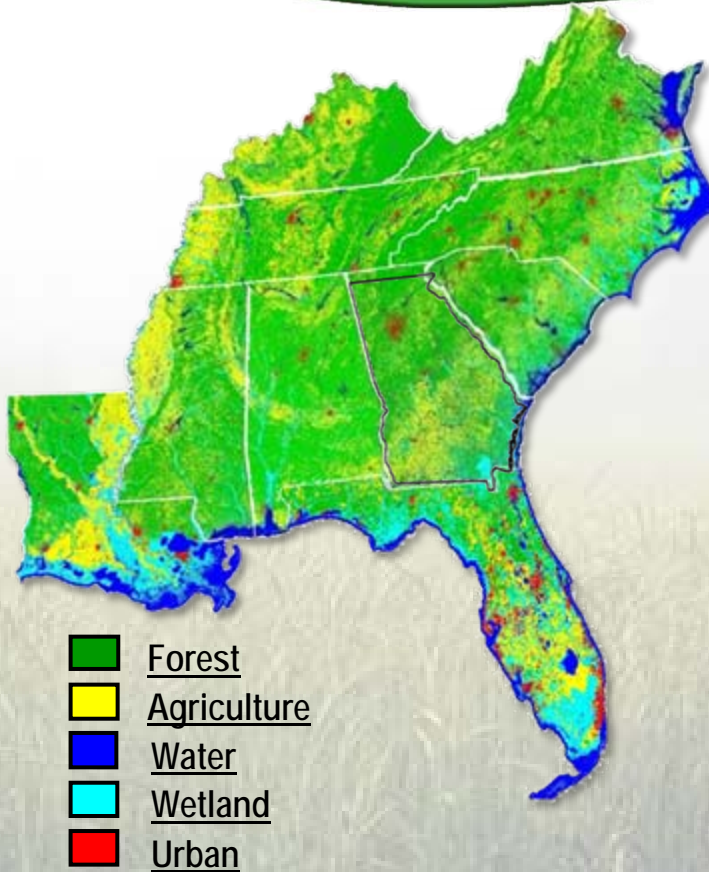
Biomass

Not one market – but several each focused on a primary renewable energy source for region

Forests Dominate Georgia's Land Use



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Energy



Georgia Forestry = Biomass Energy

Biomass to Electric



- **Twelve biomass to electricity projects have been announced in Georgia**
- **Total of 689 megawatts of renewable energy**
- **\$1.8 billion investment**
- **570 direct jobs / 1700 indirect jobs**

Alternative Fuels



- **Fifteen alternative fuel companies launched**
- **372 million gallons of production capacity**
- **215 direct jobs / 645 indirect jobs**

Laboratory Research Emphasis



- **Biochemical** - Enzymatic & Microbial,
Fermentation



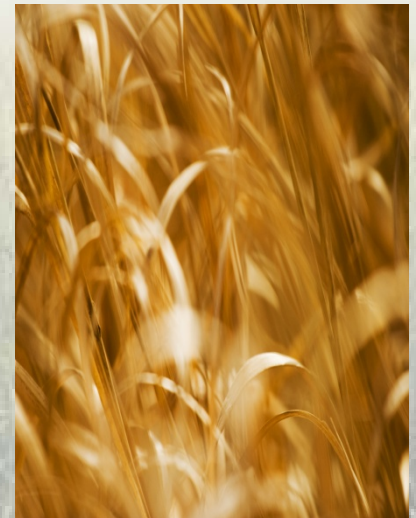
- **Thermochemical** – Acid hydrolysis, Gassification,
Pyrolysis, Torrefaction
- **Gas to Liquids**



Field Research Emphasis



- Genetics / Genomics
- Energy Crops
 - Short Rotation – Grasses/Woody
 - Trees
 - Modified Food Crops
 - Algae
 - Oil Crops



Considerations



- Greenhouse Gases (GHG)
- Environmental Constraints – Air & Water
- Permitting Issues
- Competing Land Use
- Diversion of Food Crops

American Recovery & Reinvestment Act



- \$400 M to add electric technologies to vehicles
- \$300 M to support Alternative Fueled Vehicles Pilot Grant Program
- \$ 300 M Federal acquisition of greener vehicles
- <http://www.recovery.gov/>
- Alternative Fuels and Advanced Vehicles Data Center <http://www.afdc.energy.gov/afdc/>

State of the Bioenergy Industry



Ethanol

Company	Location / County	Feedstock	Production Capacity (gallons/year)	Status
First United Ethanol	Camilla / Mitchell	Corn	110 Million	Operational
US Ethanol	Cordele / Crisp	Waste Liquid	4 Million	Operational
Windgap Farms	Baconton / Mitchell	Yeast	.05 Million	Operational

Pellets

Company	Location / County	Feedstock	Production Capacity (tons/year)	Status
Fram Fuels	Baxley / Appling	Dirty & Clean Chips	145,000 Tons	Operational
Woodlands Alternative Fuels	Meigs /Thomas	Sawmill residue	150,000 Tons	June, 2009

Electricity

Company	Location / County	Feedstock	Production Capacity (per year)	Projected In Service Date
Rollcast	Heard County	Dirty Chips	50 Megawatts	2010
BG & E	Cumming / Forsythe	Dirty Chips	30 Megawatts	2009
Decker Energy	Fitzgerald / Ben Hill	Dirty Chips	50 Megawatts	2012
Georgia Power	Albany / Dougherty	Dirty Chips	96 Megawatts	2010
Oglethorpe Power	Pending 2 or 3 sites	Dirty Chips	(3) 100 Megawatts	2014
Rollcast	Lagrange / Lamar	Dirty Chips	(2) 50 Megawatts	2010; 2012
Summit Energy	Ft. Gaines /Clay	Dirty Chips	100 Megawatts	2010
Tyson	Cartersville / Bartow	Waste (Chicken)	5 Megawatts	2008

*Dirty Chips = whole tree with bark &/or leaves; manufacturing residue. *Clean Chips = wood only

State of the Bioenergy Industry



Biodiesel

Company	Location / County	Feedstock	Production Capacity (gallons/year)
Alterra Biofuels	Gordon /Williamson & Plains/Sumter	Soy Oil	15 Million
Bulldog Biodiesel	Ellenwood / Clayton	All	25 Million
Farmers & Fleet	Augusta / Richmond	All	5 Million
Georgia Mountain Biofuels	Toccoa / Stephens	All	2 Million
Inland Oil	Bainbridge / Decatur	Soy Oil	10 Million
Middle GA Biofuels	Dublin / Laurens	Waste Grease	1 Million
Soy Met	Rome / Floyd	Soy Oil	4 Million
Sunshine Biofuels	Camilla / Mitchell	Soy Oil	6 Million
U.S. Biofuels	Rome / Floyd	Chicken Fat	14 Million

Under Construction

Company	Location / County	Feedstock	Production Capacity (gallons/year)	Status
East Coast Ethanol	Mt. Pleasant / Banks	Corn	110 million	November, 2009
Georgia Alternative Energy	Ashburn / Turner	Corn	55 million	January, 2010
Range Fuels	Soperton /Treutlen	Dirty Chips	10 million	November, 2009

For More Information Contact:



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Or visit **<http://energy.georgiainnovation.org>**