

cleanenergy.org

Southern Alliance for
Clean Energy



SACE Bioenergy Program

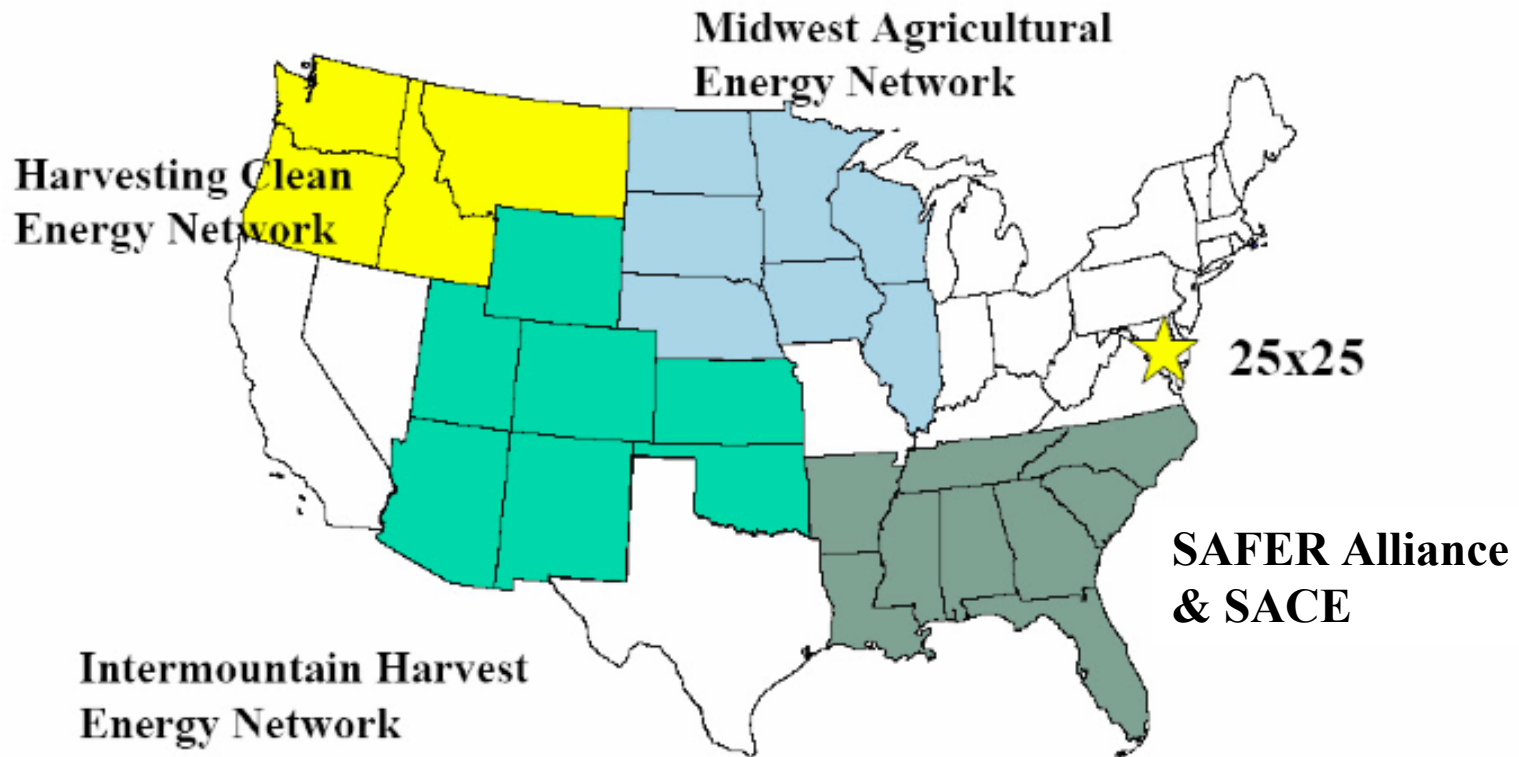
ACEEE

Ag Forum

Des Moines, IA

The Broader Context:

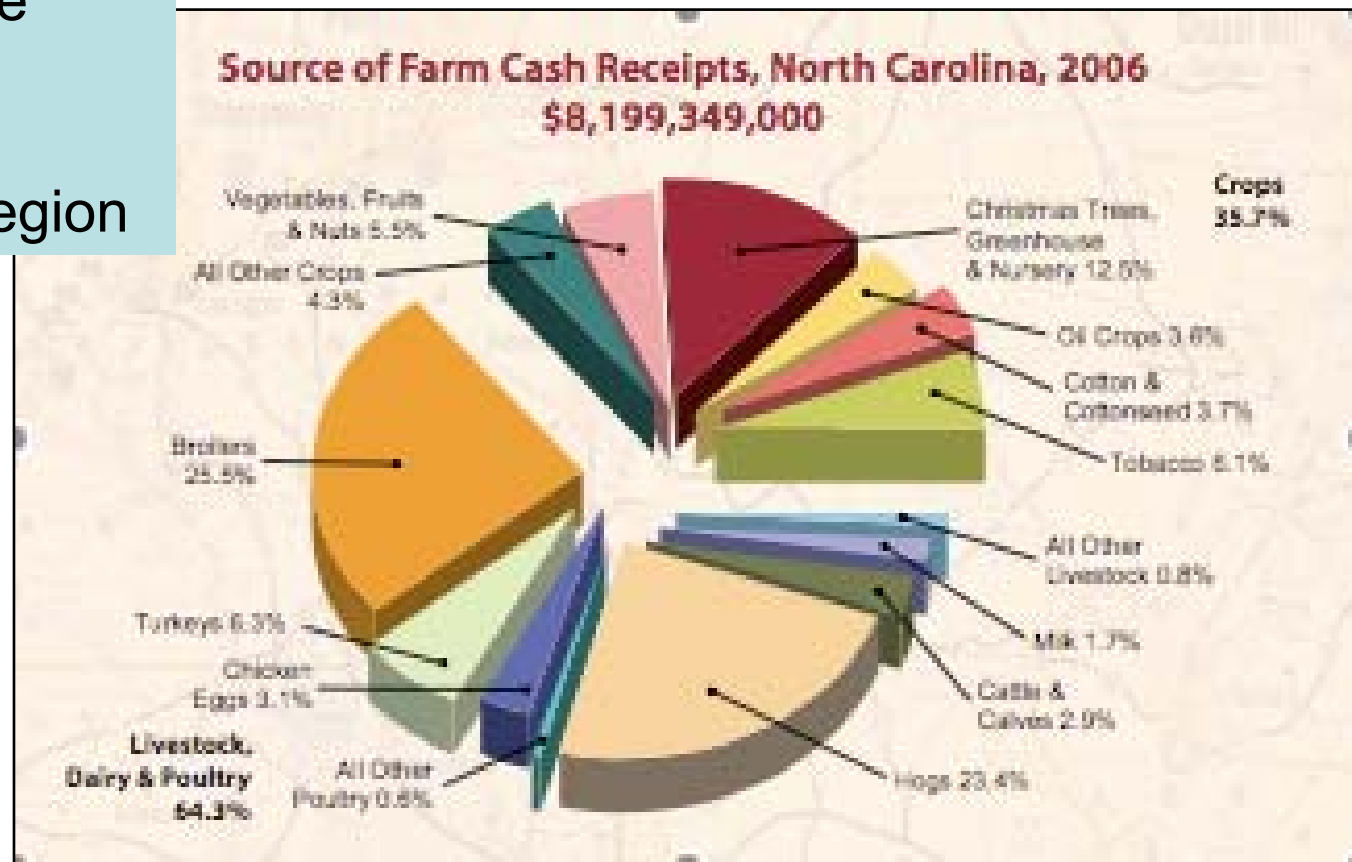
Organizing the Farm Energy Community



Source: May 2007 Energy Foundation slideshow.

DIVERSITY

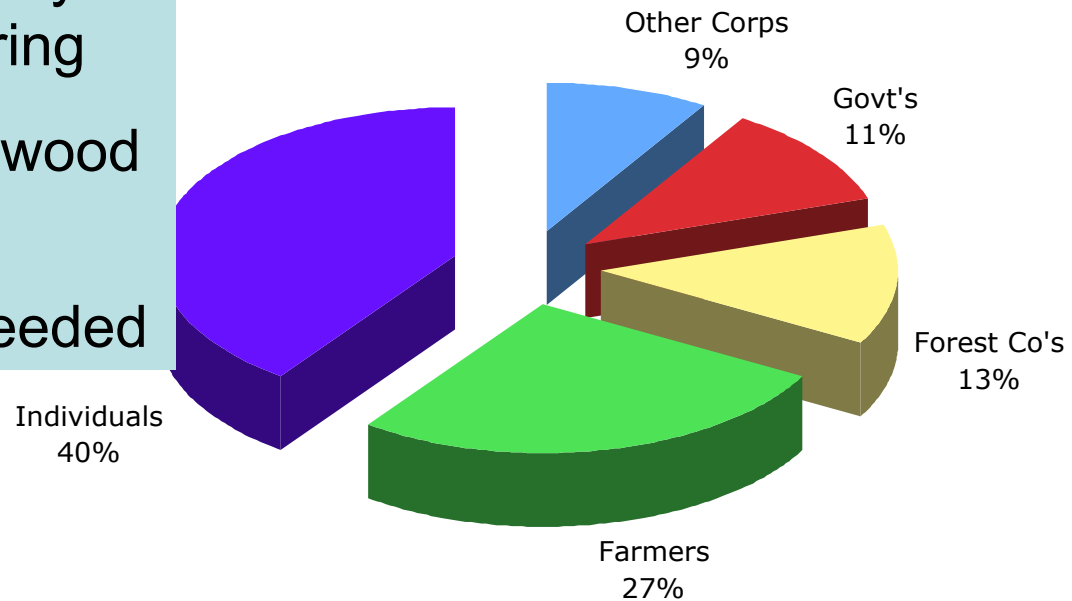
- NC for example
- Livestock 64%
- Corn Deficit Region



DIVERSITY

- NC for example
- Farmers & Individuals Own 67% of Forests
- Pulp & Paper Industry Shrinking / Off-Shoring
- 38% decline in pulpwood prices since 2005
- New markets are needed

Forest Ownership in NC



GOALS

Promote advanced biofuels & biopower for:

- **Energy Independence & local energy supply**
- **Displacement of fossil energy**
- **Boost rural economy**
- **Cleaner fuel and energy**
- **Slow global warming**

Our Projects:

Region-wide, state-level, federal level:

- Building Alliances for Bioenergy (Pine 2 Energy, 25x'25, SAFER)
- Promoting Biopower (I.e., REPS, co-firing, CHP, gasification)
- Promoting Advanced Biofuels (cellulosic ethanol, sustainable biodiesel)
- Evaluating/promoting carbon credits for ag & forestry
- Promoting On-Farm EE and RE: (I.e., 9006/REAP, audits, T.A.)
- Identifying global warming advocates in the Ag community
- Tracking Farm Bill, RPS, RFS
- Educating on Farm Energy Opportunities

State Level Initiatives:

- Tennessee Biofuels Strategic Plan/BioTenn
- Florida RES Development
- NC Biofuels Center/Strategic Plan
- SC and NC Global Warming Commissions
- Sustainability Efforts, Throughout Region
- Carbon Offset Inquiry, Throughout Region

Our Target Audiences:

- **Farmers, Timberland Owners, Rural Grassroots Leaders**
- **Agricultural Organizations (Farm Bureau, Agri-Business Councils, state Ag Depts., crop groups, etc.)**
- **Farm Allies and Technical Assistance Providers (Extension, Universities, Community Colleges, RC&Ds, USDA RD, Foresters, etc.)**
- **Emerging Organizations (Biomass Councils & Coalitions, P2E, SAFER Alliance, 25x'25 State Alliances).**

FEEDSTOCKS:



CONCERNS

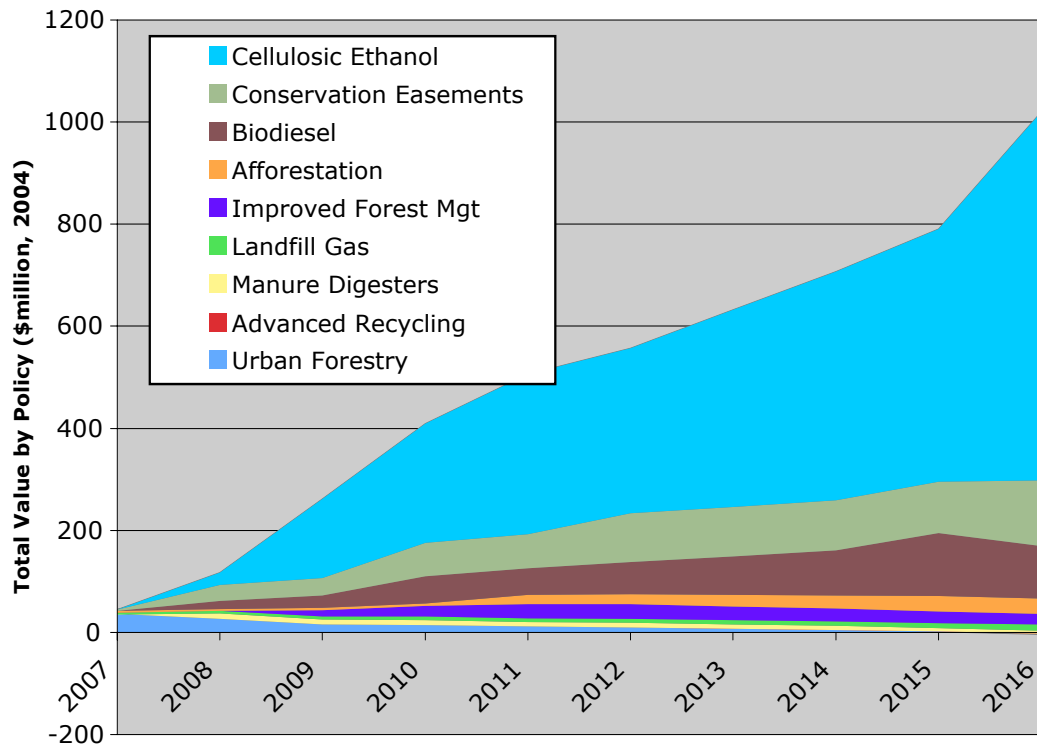
- Biodiesel? Strapped!
- Crush Infrastructure Lacking
- Limits of Corn for Ethanol
- Competition Among Commodities

OPPORTUNITIES

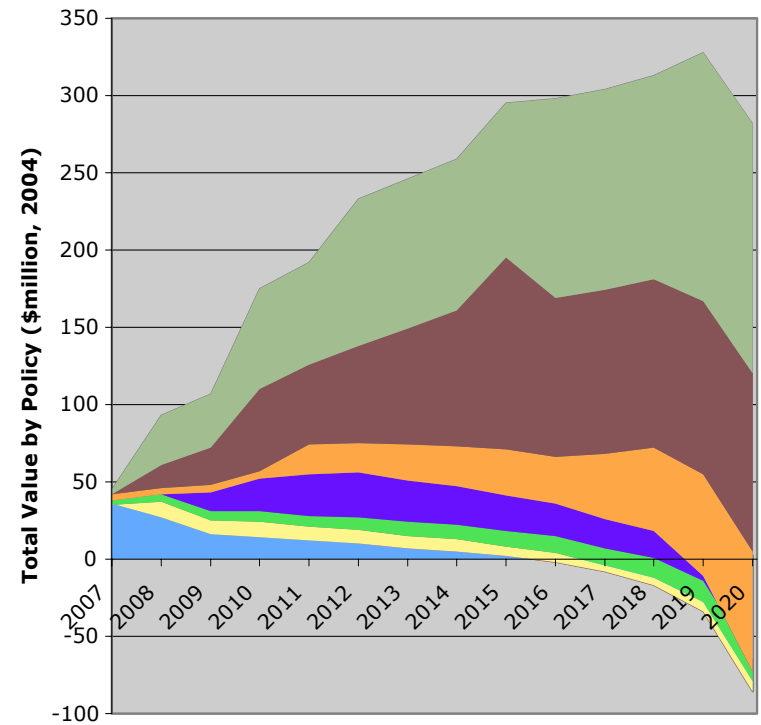
- Ethanol from Carbohydrates & Cellulose
- Modest-scale biodiesel, near the feedstocks
- Local ownership & control of infrastructure

WHY CELLULOSIC ETHANOL?

Economic Analysis of NC Climate Policy Opti



**NC Climate Options:
Omitting Cellulosic Ethanol**



Source: David Ponder's Analysis for NC CAPAG.

How Do We Measure Up?

	BIOPOWER (kW)	BIOFUELS (MGPY)	Biodiesel (MGPY)	Ethanol (MGPY)	CelEth (MGPY)
FL	1,497,400	276.9	143.5	110.0	23.4
GA	987,445	431.4	117.0	214.4	100.0
NC	472,430	271.4	101.4	170.0	0.0
SC	386,680	211.0	101.0	110.0	n/a
TN	189,000	320.7	15.7	205.0	5.0
TOTAL	3,532,955	1,511.4	573.6	809.4	128.4

	Biodiesel	Ethanol	CelEth
FL	5	4	3
GA	14	5	1
NC	11	5	1
SC	5	1	0
TN	13	3	1

Carbon Credits for Rural Landowners

- Carbon sequestration in agricultural soils, forests
- GHG avoidance / destruction (EE, methane recovery)
- Chicago Climate Exchange and private market
- Aggregators: Iowa, Nebraska, Pennsylvania, NC?
- Trading? \$2 to \$4, transaction costs = 30¢ per ton
- Value? \$2 to \$3 per acre, on average
- Looking to the future: Study on potential benefits to farmers and timberland owners of Cap & Trade bill.

Bioenergy Opportunities in 2008 Farm Bill

- Section 9006 (aka REAP “Rural Energy for America Program”) now contains audits and T.A.
- BCTA - Bioenergy Crops Transition Assistance
- Advanced Biofuels Producers Payment Program
- Regional Biomass Crop Experiments
- Community Wood Energy Program
- Regional Biomass Crop Experiments
- *Tax & Trade Concerns: CNG, coal-liquids*

BIOPOWER

- Urban wood waste
- Poultry litter
- Swine waste methane
- Logging residues
- Tree plantation thinnings
- Short rotation woody crops

WHY?

- Superior to Coal: SOX, NOX, Mercury
- Can be carbon-neutral and sustainable
- Boosts local & regional economies
- Helps rural landowners defer sprawl



- Biomass is the woody portion of tree available for conversion to energy:
 - non-pole, non-sawtimber portion above stump
 - tops and branches
 - also known as logging waste or residue

