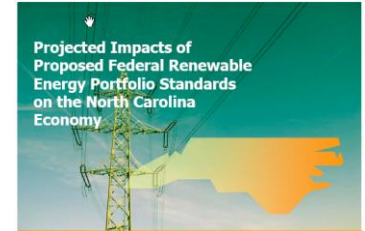
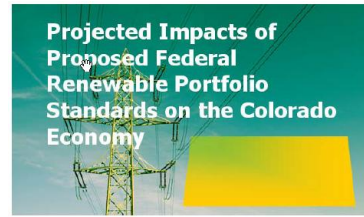


New Markets and Opportunities for Agriculture in Colorado, Florida, Kansas, and North Carolina: An Economic Analysis of a Federal Renewable Portfolio Standard



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This Study

- Provides an economic analysis of the economic costs and benefits from a Federal renewable energy standard (RES) policy to agricultural counties in Colorado, Florida, Kansas, and North Carolina.
- Addresses some key questions:
 - Impact of RES policy on farm revenue?
 - Potential of new markets for biomass and how much revenue could biomass sales generate at the farm level?
 - Direct employment opportunities that result from building out new electric generating facilities?
 - Job growth on the farm supported by increased biomass production?

RES Policies Considered

- Federal RES policies in the 111th Congress:
 - 20 percent Federal renewable energy standard (Bingaman)
 - 25 percent Federal renewable energy (Markey)
 - Energy savings assumed at maximum allowable levels
- Existing state RES policies:
 - Colorado Renewable Energy Standard
 - North Carolina Renewable Energy and Energy Efficiency Portfolio Standard

Driving Forces

- State differences:
 - Energy use
 - Natural resources
 - Energy and environmental policy framework
- Federal RES legislation
 - Interstate crediting of renewable electricity
 - What qualifies as a renewable electricity source
 - Consistency of environmental and energy goals

Renewable Sources

- **Linked to Agriculture**
 - Bioenergy dedicated crops
 - Agricultural / Crop residues
 - Animal waste
 - Forest waste and residues
 - Wind power
- **Non-Linked to Agriculture**
 - Solar energy
 - Municipal Waste

Method of Analysis

- Number and type of renewable energy facilities selected based on:
 - Engineering cost data
 - Announced plans for facility construction
 - Resource availability in the region
- The Impact Analysis for Planning (IMPLAN) model, a regional input/output modeling framework, was used to project:
 - Economic impacts resulting from expenditures on renewable energy technology and feedstock both statewide and at the regional level.
- **Remaining slides: Study Highlights...**

Value of Biomass Feedstock Production

- **Table 1: Value of Direct Agricultural and Forestry Sector Biomass Feedstock Production in 2025, Million Dollars**

	North Carolina	Florida	Colorado	Kansas
State RES	\$ 382.4	-	\$ 127.9	-
20% RES	\$ 760.7	\$ 447.1	\$ 208.4	\$ 36.6
25% RES	\$ 848.1	\$ 447.1	\$ 248.9	\$ 36.6

- RES policy is anticipated to create new market opportunities for biomass in the agricultural sector.
- Size of this new market varies by state and by stringency of the RES target, with higher targets typically resulting in a larger market for biomass.

Gross Receipts per Farm

- **Table 2: Change in Gross Receipts per Farm in 2025**

	North Carolina	Florida	Colorado	Kansas
NC RES	\$ 7,228	-	\$ 8,995	-
20% RES	\$ 14,376	\$ 9,421	\$ 10,517	\$ 43,229
25% RES	\$ 16,028	\$ 9,419	\$ 11,283	\$ 43,229

- RES policy has a positive effect on farm income.
- Income tied to RES targets, with higher targets producing greater income.

Agricultural Sector Employment

- **Table 3: Increase in Direct Employment from Biomass Feedstock Production in 2025**

	North Carolina	Florida	Colorado	Kansas
State RES	1,266	-	585	-
20% RES	2,506	2,296	948	139
25% RES	2,781	2,296	1,130	139

- Employment projected to increase as a result of increased agricultural activity.
- Relationship between job creation and RES policy was positive, with more jobs created in scenarios with stronger RES targets.

Concluding Remarks

- **RES** instruments creates new opportunities for agriculture and rural development
- **Federal RES** should allow States to enhance the value of their natural resources
- Impact in **cost of electricity** is less than 1%

Full study available at
www.21stCenturyAg.org
beag.ag.utk.edu/pub.html

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