

# Agriculture and Clean Energy Summit Fort Morgan, Colorado

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# Overview: ACES Opens Opportunities for Ag Energy

- Renewable Electricity Standard
- Success Stories
- Carbon allowances for agriculture
- Other program benefits for agriculture





# Ag Energy and Low Carbon Energy

- Biofuels
- Biogas – manure digesters
- Wind power
- Solar power
- Biomass energy
- Energy Efficiency





# Renewable Electricity Standard

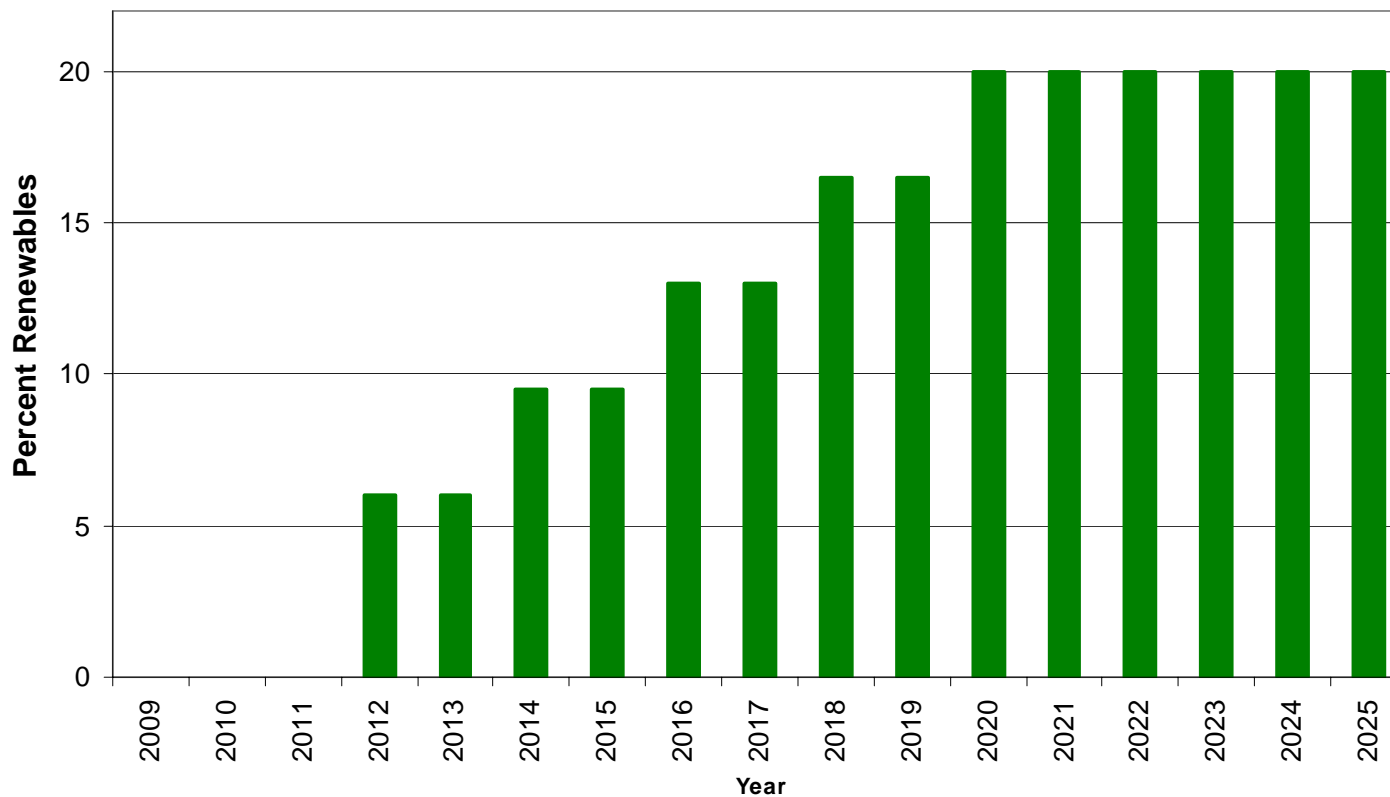
- Works like Renewable Fuels Standard
- Requires electric power retailers to provide a percentage of power from renewable resources
- Small utilities and rural electric cooperatives exempted
- Combined with energy efficiency standard
- Proven in the states – 21 states have an RES
- Provides Renewable Energy Credit trading across states.





# ACES Renewable Electricity Standard

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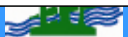
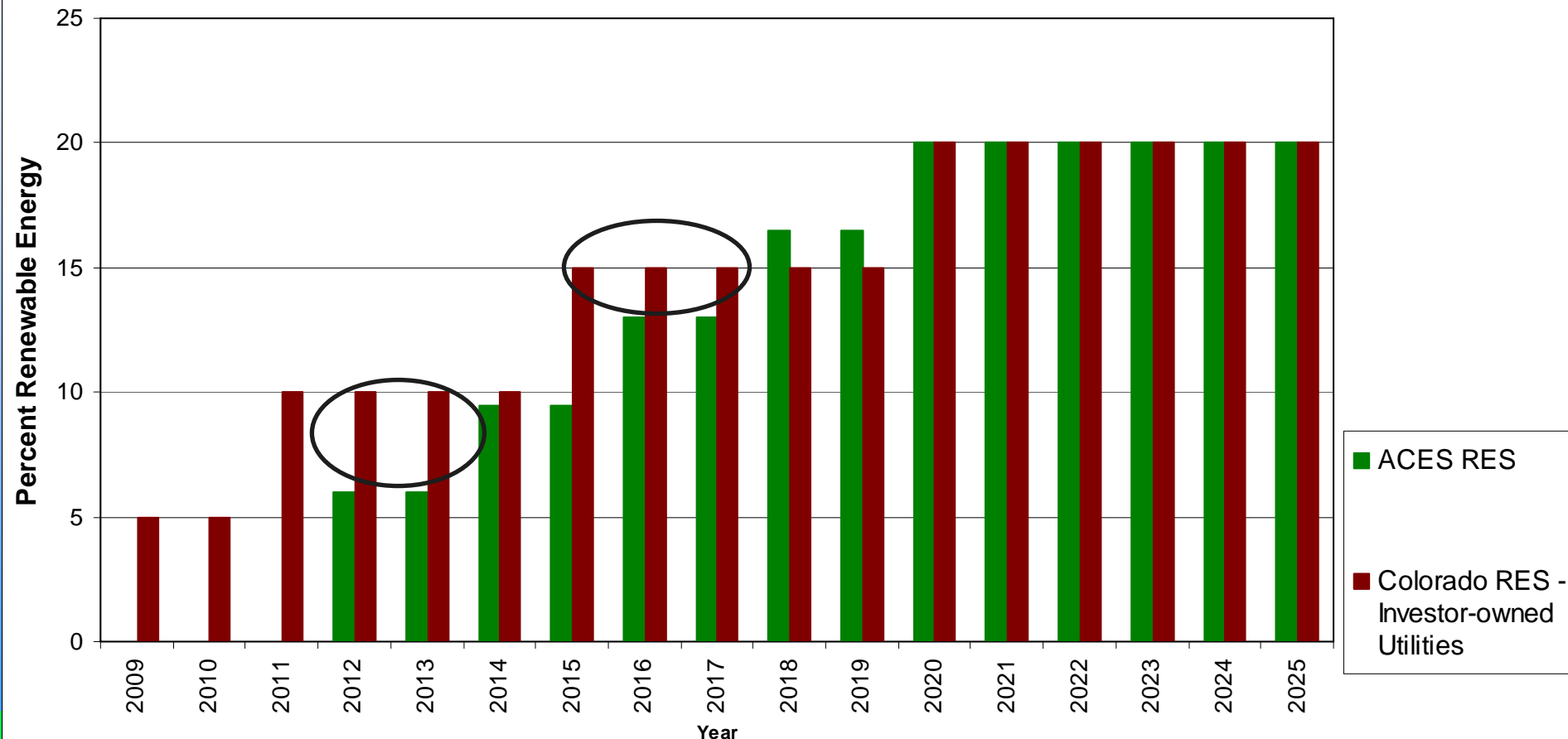




# Renewable Electricity Standards

ACES Standard includes energy efficiency

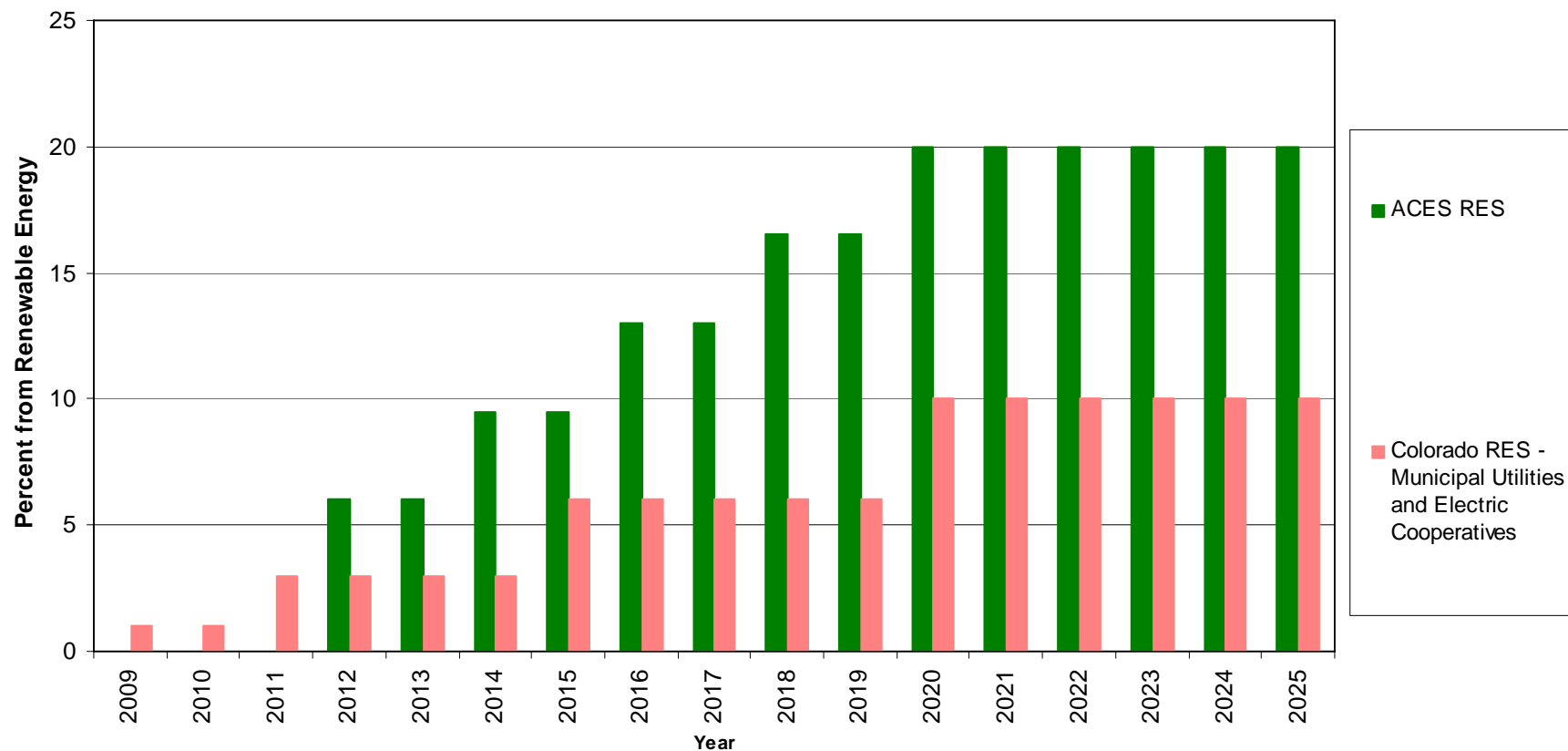
## Renewable Electricity Standard Comparison





# Renewable Electricity Standards Colorado REC Requirement

## Renewable Electricity Standard Comparison





# Benefits of a Strong RES

- Stimulates billions in clean energy investments – much in rural America.
- For Colorado, can sell credits, advances technology.
- Increases farm income with
  - farmer-owned power generation,
  - biomass energy crop sales,
  - wind lease payments.
- Save money – energy efficiency cuts bills



# Farm Energy Success Studies





# Blue Sun Biodiesel

- Fort Collins, Colorado-based biodiesel company.
- \$500,000 grant
- Now developing new oilseed varieties for biodiesel production.
- Using soy for diesel, looking to canola oil





# Indiana Wind Power Project

- BP Wind Energy pays
  - \$7,500 base rental PLUS
  - Electric sales about \$2,500

*"If you offer me the opportunity to have four towers that generate \$30,000 to \$40,000, that's a lot of corn and soybeans."*

- Bruce Buchanan, Benton County





## Desert Rose, Idaho

- Grow desert plants
- Received \$17,776 grant.
- Jacobs 20 kw wind turbine.
- By reducing electric costs, the Johnsons plan to operate the greenhouse well into their retirement years.

"I have wanted to do this for 30 years," Larry Johnson said. "It's a great feeling to be able to produce my own electricity."





# Show Me Energy Cooperative Kingsville, MO

- Use waste grass and seed residue from seed operation for fuel.
- Now converting 15 million pounds to biomass pellets with high BTU value
- \$95,000 grant.



- Company now organizing growers cooperatives for energy grasses





# Show Me Energy Cooperative Kingsville, MO





## Butter Creek Power Echo, Oregon

- Kent Madison, Wheat farmer in eastern Oregon
- Jointly developed 64 MW wind project with neighbors.
- REAP grant helped him increase his equity.
- REAP “Allows us to own a bigger share of the turbines more quickly.”
- John Deere Renewable Energy project.
- Also sells biodiesel from canola.



# Butter Creek Power Echo, Oregon



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## Local Wind Development: Ryan Wolf and Wolf Wind

- Son of a farm family
- Developed a family-owned 5-turbine wind farm
- Section 9006 Grant Recipient
- Now developing other community wind projects





## Cozad Alfalfa Cozad, Nebraska

- Replaced natural gas boiler with biomass boiler in alfalfa pellet manufacture.
- Payback now in less than 5 years.
- Using sawdust that used to go into a landfill.
- Reduces waste, global warming pollution, saves money, improves financial health of Cozad Alfalfa.





## Red Lodge Ales, Montana

- Rural Small Business
- Tapped solar energy and energy efficiency
- Solar provides space heating and hot water.
- Refrigerator uses cold winter air.
- Biodiesel from waste oils for delivery fleet
- \$26,400 REAP grant





# Alamar Farms Palisade, CO

- Wholly energy independent and free of fossil fuel price swings
- Installed 10 kw solar electric
- 59 panels
- REAP grant, \$24,926
- Xcel Energy rebate





# Crete Food Mart, Nebraska

- Energy efficiency grant \$11,750 grant
- Produce coolers 35 years old+, other equipment old and inefficient.
- Used grant to invest in produce and milk coolers, walk-in freezer, roof and insulation and high-efficiency T-8 bulbs
- Project energy savings nearly **50%** with 5 year payback
- Other benefits:
  - Lower maintenance costs
  - Better store appearance, larger sales
  - Local job protection





# Irrigation Systems

- Energy and water savings
- Low pressure systems
- 100s of irrigation projects
- Used widely in Nebraska
- Some fuel switching from diesel to electric
- Result of partnership with public power agency





## Five Star Dairy, Wisconsin

- Manure Digester: Elk Mound, Wisconsin
- An 800-head dairy, began operating its digester in June 2005.
- The digester generates up to 775 kW of electricity, enough power to supply 600 homes.
- 34 digesters funded in Wisconsin. Outreach key by Focus on Energy, Dept of Ag
- REAP Grant: \$108,000





# Section 788: Support for Agriculture

- Funding for early adopters of carbon sequestration a likely priority.
- Broad discretion to USDA for other carbon reduction which *might* support clean energy activities
- Possible support for ag energy through state and local programs.





# Low Carbon Energy Technology Development

- Incentives to deliver more efficient equipment to market sooner, cutting costs in process
- Accelerate energy efficiency technologies that will help agriculture cut energy consumption – and bills.
- Lighting efficiency standards
- Rebates for high efficiency motors
- Can do even more for agriculture!





# Senate Can Do Even Better

- The Missing Piece:  
Low Carbon Ag Energy
  - Use carbon sale proceeds for clean energy
  - Support aggressive rural renewables development
- Improve Renewable Electricity Standard
  - Increase percentage from House levels
  - Follow Colorado model: Require Rural Electric Utility Participation
- All good for agriculture!





# National Bioenergy Partnership

- DOE to coordinate state, federal, and private sector
  - Promote deployment of sustainable biomass fuels and bioenergy technologies
- Support infrastructure development for biofuels.





## Conclusion

*Thank you for listening!*

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