

Development of Renewable Energy in Texas



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Texas Renewable Energy Program



- Comprehensive retail competition legislation enacted in 1999
- Fixed goal for renewable energy
 - 2000 MW of new renewables by 2009
- Market-based mechanism to support efficient deployment
 - Trading of renewable energy credits
- Definition of qualifying resources
 - Solar, wind, hydro, geothermal, wave, tidal, biomass, landfill gas



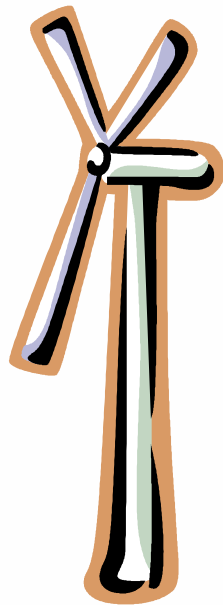
Renewable Energy Credits



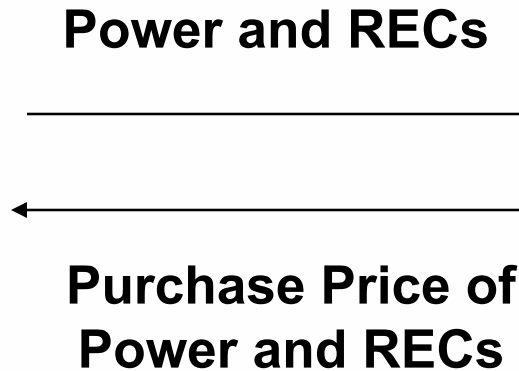
Generation

Retailer

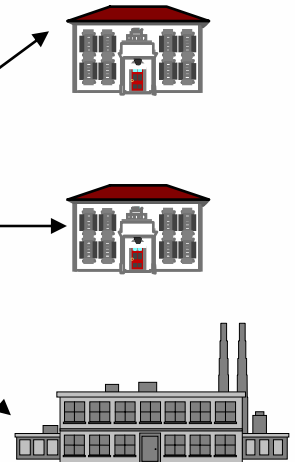
End User



Earn RECs
for Production



Required to
Retire RECs



Transmission Policies

- Regional postage-stamp rate
 - Distance not a factor in rate
 - Multiple utilities do not charge multiple rates
- Standard interconnection agreement
- Transmission upgrades rolled into regional rates
- Neutral planning organization



Results through 2004

- 1190 Mw of new capacity
 - Wind 1140
 - Landfill gas 30
 - Hydro 10
- 3.6 million Mwh of electric energy generated in 2004
- RECs retired in 2004:
 - 2.7 million for compliance
 - 420,000 voluntary (e.g., renewable energy sales)



Residential Customer Impact

- REC prices about \$15 (REC=Mwh)
- Mandatory REC ratio of about 1.1 RECs per 100 Mwh of consumption
- Annual cost of renewable mandate is minimal
- Cost drivers are level of mandate, cost of resource, and transmission needs



Consequences of REC Approach

- Competitive producers decide what and where to build
- Projects typically have been located where resource has an advantage
- Producers have emphasized large wind projects and landfill gas—low cost in Texas
- Insufficient incentive for high-cost technologies, such as solar
- RECs support competitive offers of renewable energy products



Consequences of Transmission Policy

- Easy to interconnect new generation
- Distance not a factor in competitiveness of generators
- Projects typically located where resource has an advantage
- Over-building of wind generation in favorable areas led to congestion
- Assuring delivery from wind generation will require significant transmission investment



Issues with Current Program

- Significant development of wind in remote areas of West Texas
 - Congestion on transmission system
 - New transmission under construction
 - Stalemate on whether wind or transmission makes commitment for next level of development



Current Legislative Proposals

- Increase renewable energy goal
 - 5,000 MW in 2015
 - 10,000 MW in 2015
- 500 MW set-aside
 - Non-wind renewable resources
 - Distributed renewable resources
- Enhance assurance of cost-recovery for transmission
- Create renewable generation zones



For More Information

- PUC
 - Statute—PURA 2003 §39.904
 - www.puc.state.tx.us/rules/statutes/index.cfm
 - Regulations—Subst. Rule 25.173
 - www.puc.state.tx.us/rules/index.cfm
- REC administrator--ERCOT
 - www.texasrenewables.com

