

# Texas Renewable Program and Technology Demonstration

Dub Taylor, Director  
State Energy Conservation Office (SECO)



# About SECO...

# Presentation Outline

- 3 The Texas Energy Picture
- 3 Renewable Energy Resources
- 3 Policy and Economic Impact
- 3 Renewable Energy Projects
- 3 Education & Support

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# The Texas Energy Picture

- 3 Oil & Gas production peaked in 1972
- 3 Texas became a net energy importer in 1993
- 3 5th largest energy user in the world
- 3 Texas accounts for 12% of U.S. energy consumption - why?
  - 3 60% of US petrochemical production
  - 3 25% of US refining capacity
  - 3 19 million automobiles
  - 3 22 million population (7.5 million households)



# Top Twenty States for Wind Energy

As measured by annual potential in billions of kWhs, factoring in environmental and land use exclusions for wind class of 3 and higher:

1	North Dakota	1,210	11	Colorado	481
<b>2</b>	<b>Texas</b>	<b>1,190</b>	12	New Mexico	435
3	Kansas	1,070	13	Idaho	73
4	South Dakota	1,030	14	Michigan	65
5	Montana	1,020	15	New York	62
6	Nebraska	868	16	Illinois	61
7	Wyoming	747	17	California	59
8	Oklahoma	725	18	Wisconsin	58
9	Minnesota	657	19	Maine	56
10	Iowa	551	20	Missouri	52

*Source: An Assessment of the Available Windy Land Area and Wind Energy Potential in the Contiguous United States, Pacific Northwest Laboratory, 1991.*

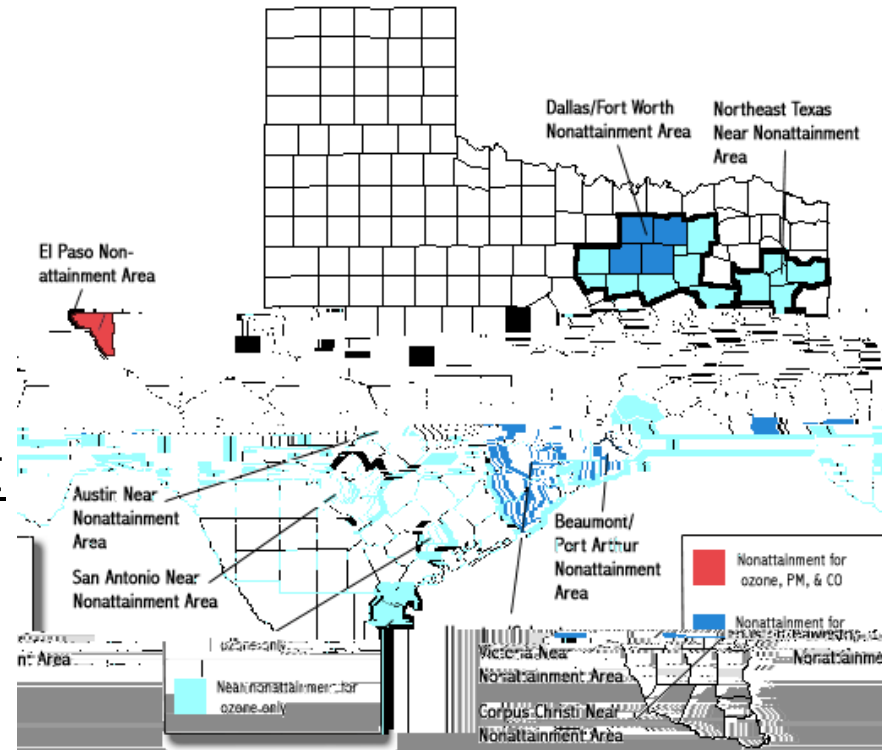
# Texas Air Quality Challenges

## Ozone Non-Attainment

- 3 Dallas/Fort Worth
- 3 Houston/Galveston
- 3 Beaumont/Port Arthur
- 3 El Paso

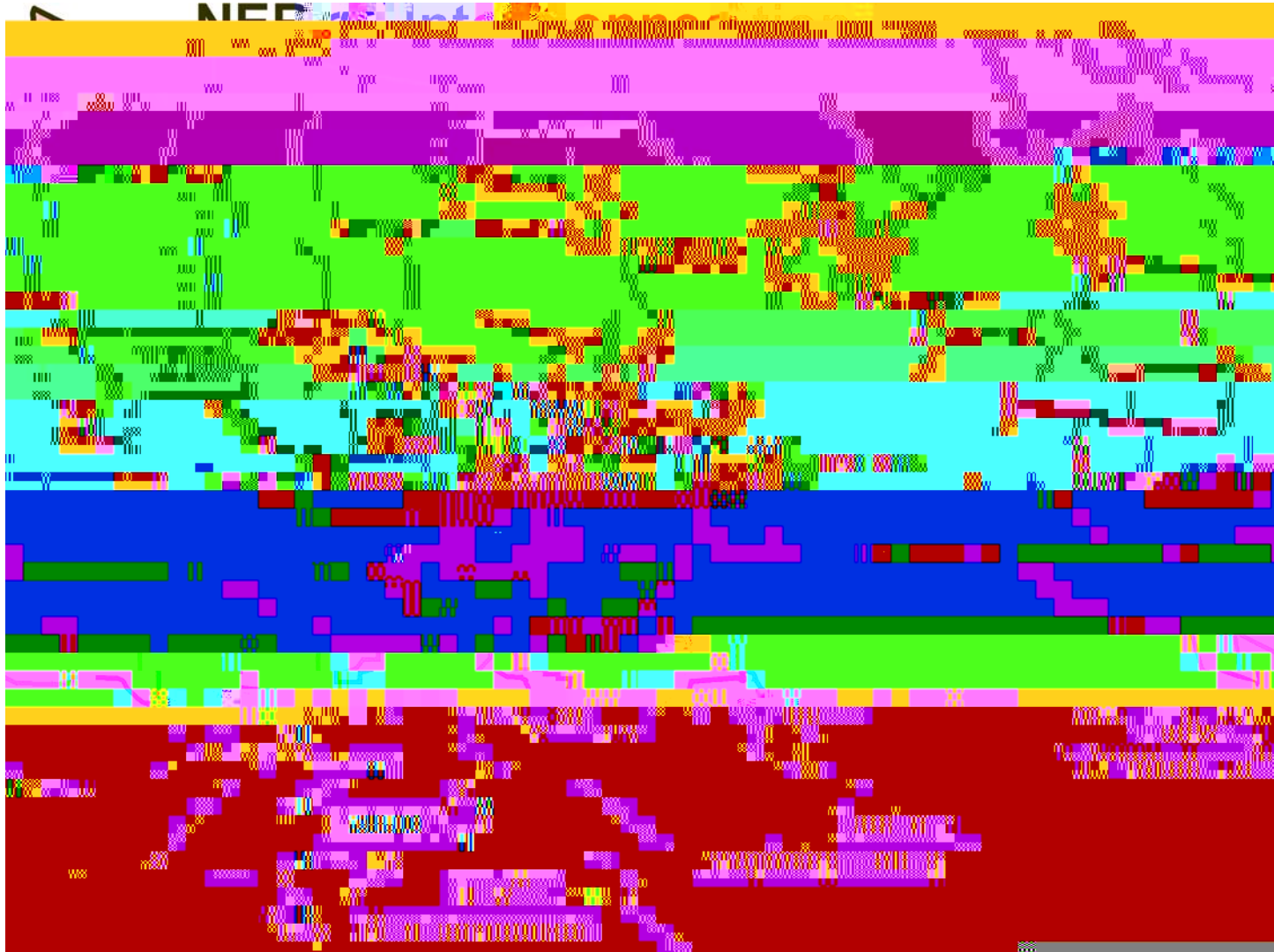
## Ozone Near Non-Attainment

- 3 Austin/San Antonio
- 3 Corpus Christi/Victoria
- 3 Tyler/Longview/Marshall





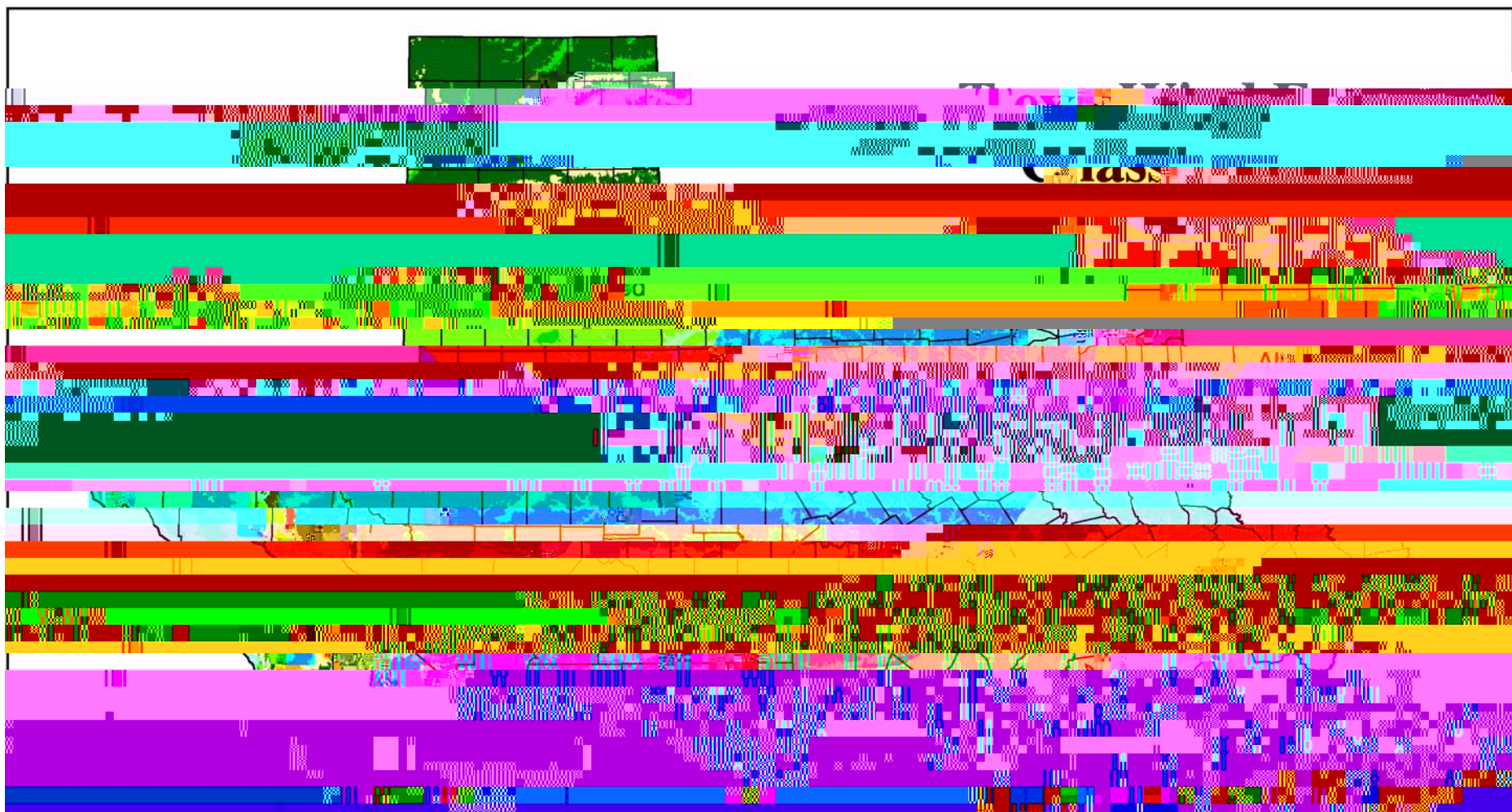
# The Electric Power Grids of North America





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# Texans Want Renewable Energy

IRP Deliberative Polls™ ('95-'98)

<u>Preference?</u>		<u>Will you pay more?</u>	
3 Renewables	49%	3 Renewables	+\$5
3 Efficiency	31%	3 Efficiency	+\$2
3 Fossil	14%	3 Fossil	+\$0
3 Buy and Transport	5%		

(8 largest IOUs, 67% of Texas customers)

# Texas Renewable Energy Portfolio Standard (RPS)

Enacted - 1999

- 3 2,000 new MW by 2009

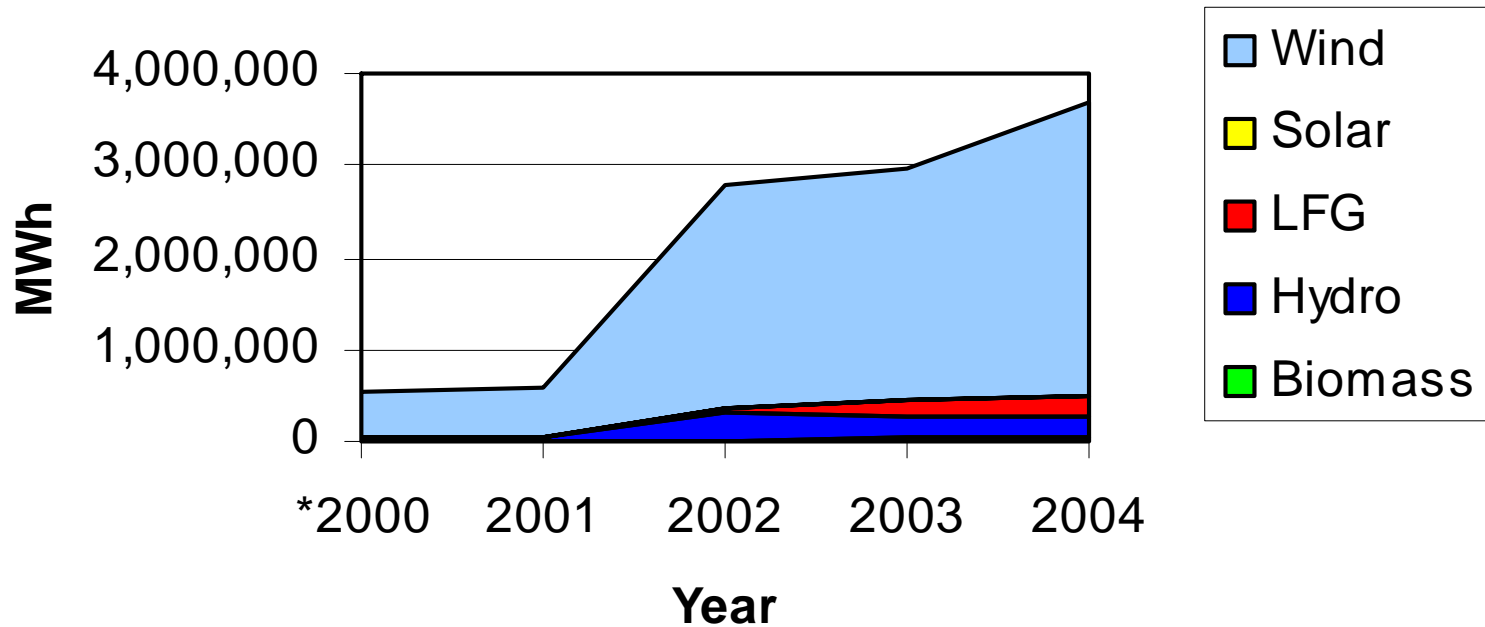
Status - 2005

- 3 1322 MW added (large wind)
- 3 486 MW under construction
- 3



# The Texas Energy Picture

## Texas Renewable Energy Generation (ERCOT REC Program)



# RPS Local Economic Impact

3 *"2<sup>nd</sup> industry in 80 years"*

Mayor Sherry Phillips - McCamey, TX



3 New school via property taxes  
Trent, TX

3 Tower paint shop – 300 jobs  
Coleman, TX

# Texas Renewable Energy Portfolio Standard (RPS)

Expansion by 2005 Legislature

- 3 5,000 new MW by 2015
- 3 500 MW non-wind carve out
- 3 Fixes “chicken-and-egg” problem:
  - 3 PUC designates best development zones
  - 3 Transmission will be built to zones
  - 3 Cost recovery for transmission owners is assured
- 3 \$3.5 billion net economic benefit



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**Utility-**

# Small Wind Demonstration

3 Alanreed, TX

3



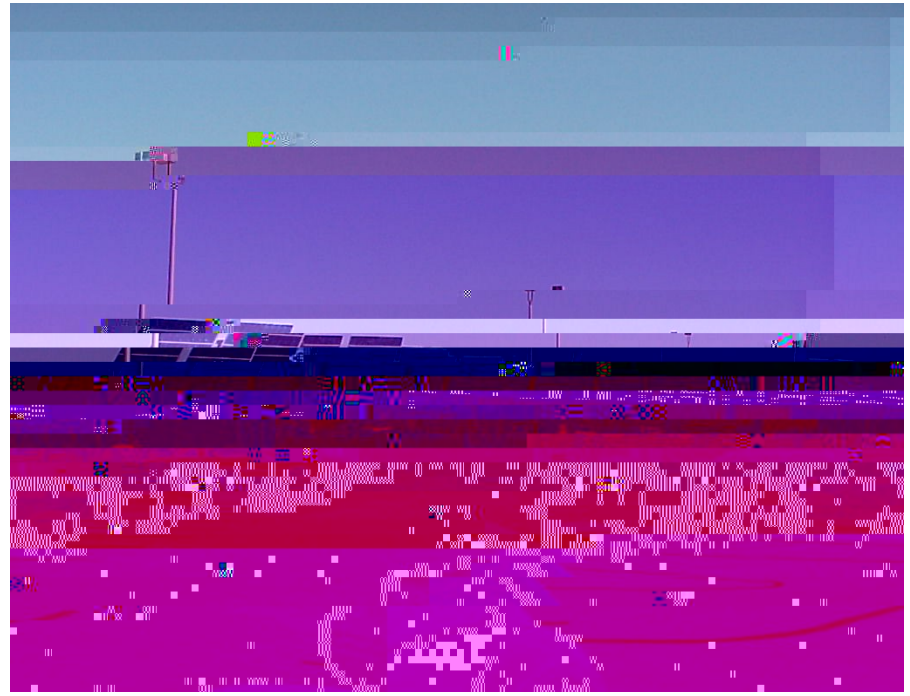
# Solar On State Facilities

UT Health Science Center  
Houston



56 kW PV

UT Medical Branch  
Galveston

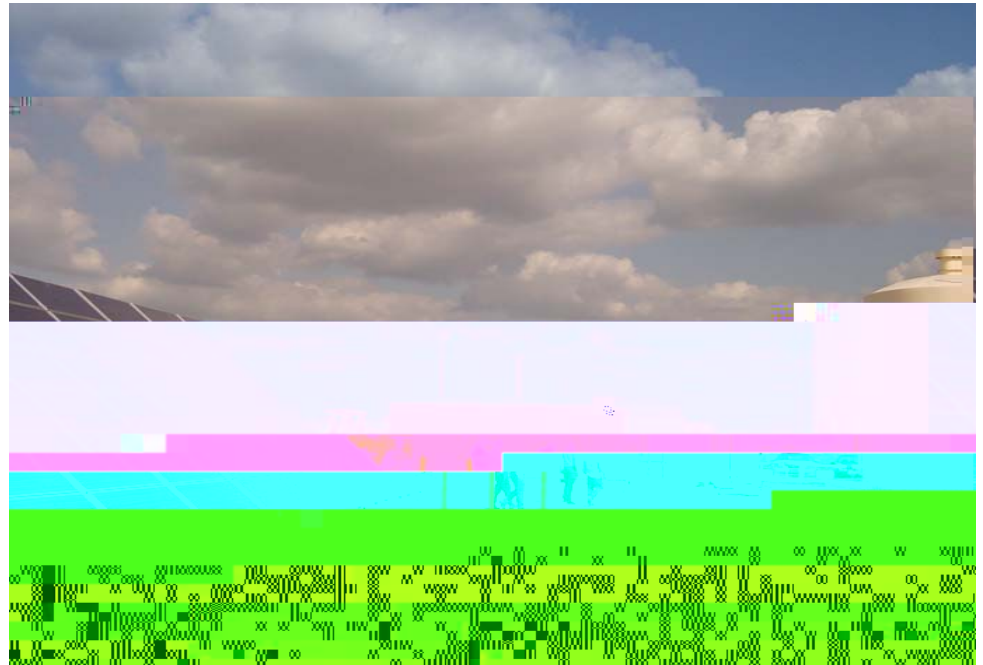


20 kW PV



# Colonias Water Purification Webb County

- 3 Solar Powered Reverse Osmosis System
- 3 8 Kw PV
- 3 24/7 Operation
  - 3 Grid Backup
- 3 Treats 14,000 Gallons/day



# Biomass Energy Projects

## Ethanol – Dumas, TX

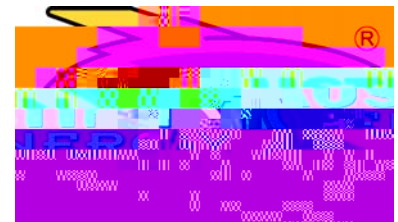
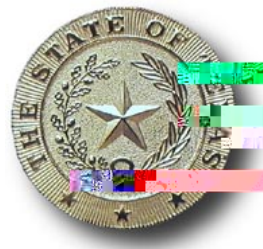
- 3 Input: 12 million corn bushels
- 3 Outputs: 30 million ethanol gallons & 90,000 distillers grains tons





# Purchasing Renewable Energy

- 3 100% via **GreenChoice®**
- 3 685,000 kWh annually
- 3 Early subscriber to **GreenChoice®**
- 3 Saved \$15,700 from 4/01 – 9/05



# Purchasing Renewable Energy

- 3 100% via **GreenChoice®**
- 3 13 million kWh annually
- 3 Early subscriber to **GreenChoice®**
- 3 Saved \$315,000 from 4/01 – 9/05



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# Geothermal Projects/Outreach

## **UTPB - Conversion of Deep Gas Wells and Fields into Geothermal Energy Wells**

A project to identify optimum geologic and geographic sites for converting depleted deep gas wells and fields into geothermal energy wells to generate renewable electrical power.

## **SMU - GeoPowering the West: Texas Geothermal Outreach and Networking**

Project will coordinate a new organization, the Texas Geothermal Collaborators, comprised of individuals and groups related to geothermal energy, and strategic player/organizations most capable of establishing geothermal in the public perception as an effective energy alternative. The goal of this project is to increase geothermal awareness among Texas citizens and development of additional geothermal projects in Texas.

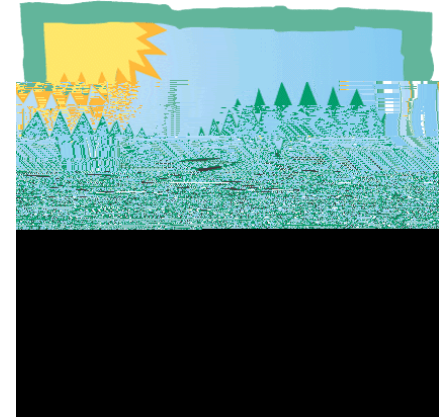


# Renewable Energy Education

- 3 InfinitePower Campaign
  - 3 Educational materials
    - 3 Lesson Plans
    - 3 Fact Sheets
  - 3 Interactive Calculators
  - 3 Answers to FAQ's
  - 3 Website:



# Renewable Energy Education



## *Alternative Energy*

- 3 Secondary-science curriculum supplement
  - 3 Interactive CD
  - 3 25 lessons correlated to current educational standards
  - 3 Over 1,500 workshop attendees
  - 3 Award-winning video
  - 3 [www.propane.tx.gov/education/index.html](http://www.propane.tx.gov/education/index.html)



# Clean Energy Technology Incubator

- 3 **Powertube, Inc.**
  - 3 Clean energy
  - 3 Closed-loop, down-hole system
  - 3 Geomagnetic
  - 3 Low/Medium temp  
110-200 C
  - 3 1-5, 10 MW



# Questions?

Dub Taylor, Director  
State Energy Conservation Office

[www.seco.cpa.state.tx.us](http://www.seco.cpa.state.tx.us)

