



Co-Benefits of Clean Energy in Texas

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Presentation Outline

- ❖ **The Texas Energy Picture**
 - ❖ Energy Security and Air Quality Drivers
- ❖ **Policy and Co-Benefits**
 - ❖ Texas Emissions Reduction Plan
 - ❖ Renewable Portfolio Standard
 - ❖ Energy Efficiency “Portfolio Standard”

The Texas Energy Picture

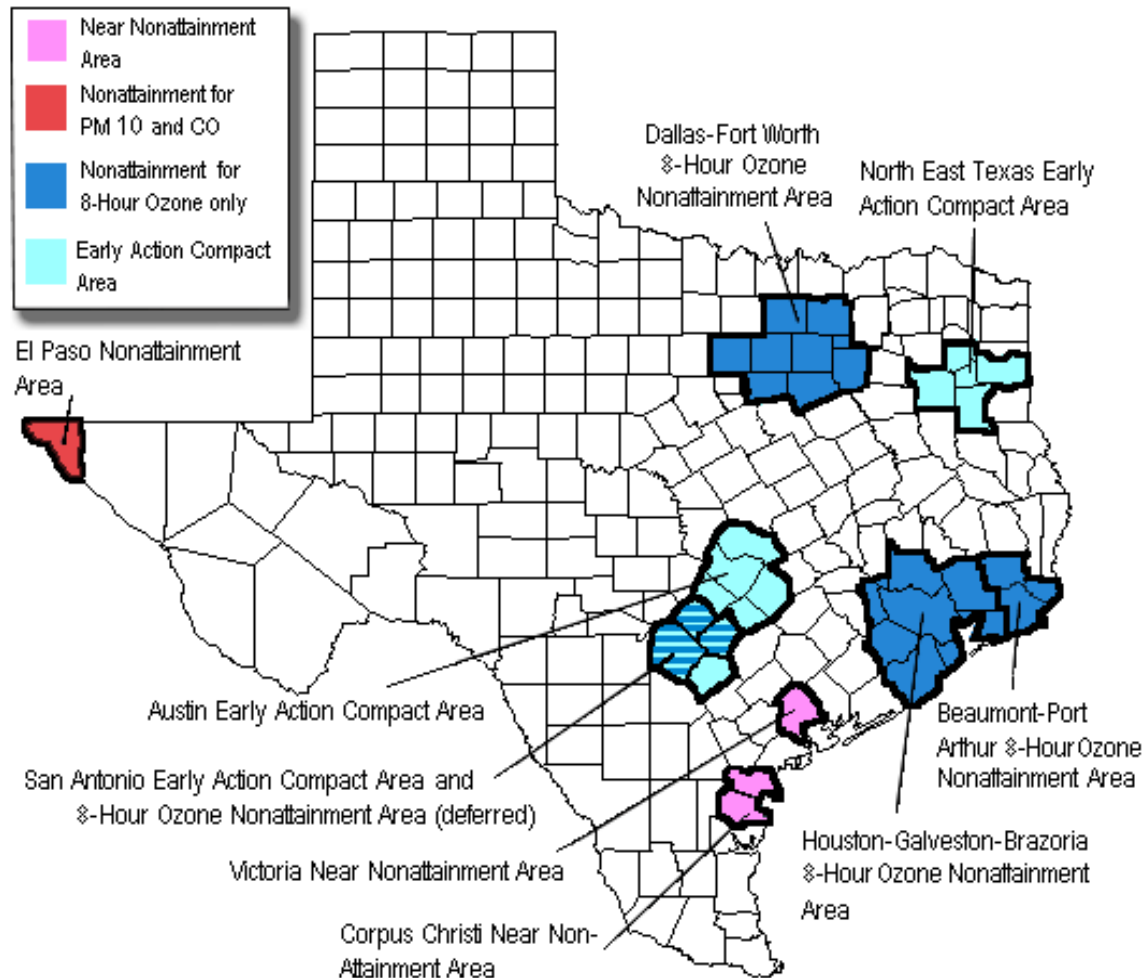
- ❖ Oil & Gas production peaked in 1972
- ❖ Texas became a net energy importer in 1993
- ❖ Texas accounts for 12% of U.S. energy consumption - why?
 - ❖ 60% of US petrochemical production
 - ❖ 25% of US refining capacity
 - ❖ 20 million automobiles
 - ❖ 23 million people
 - ❖ 7.5 million households

The Texas Energy Picture

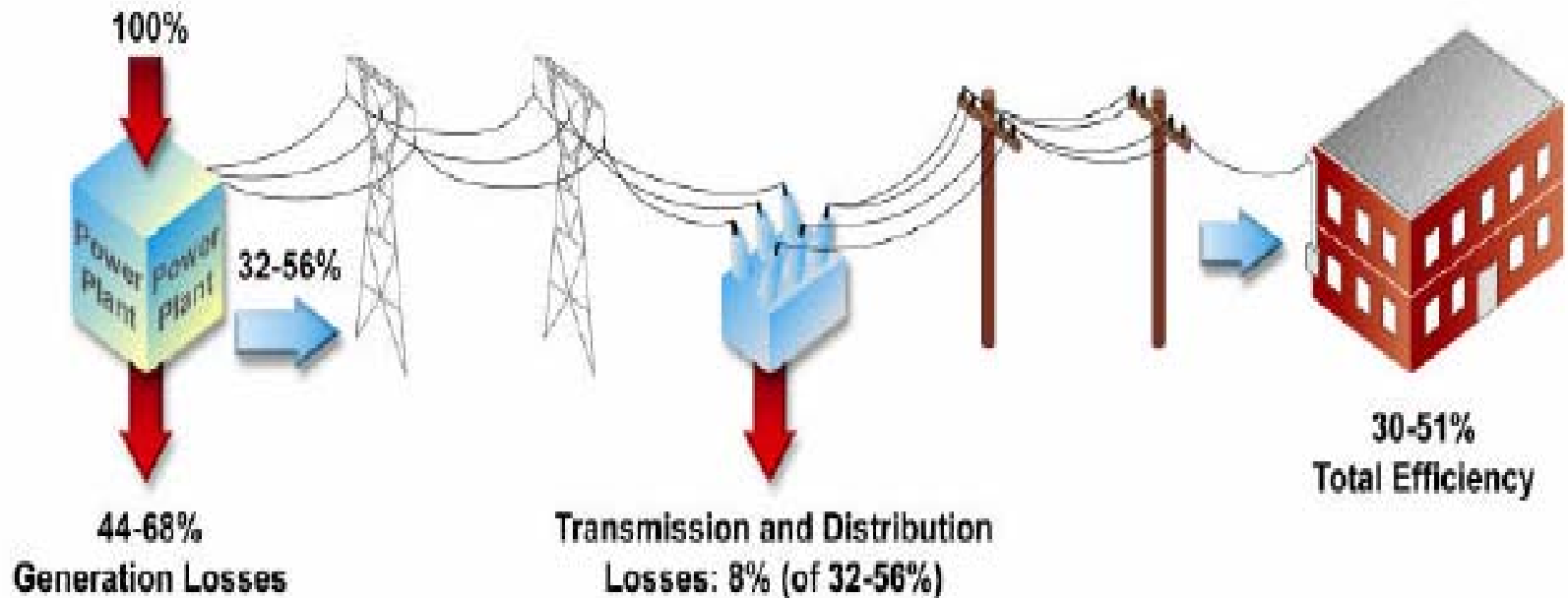
- ❖ Annual growth in electrical use averaged +2.5% over last 10 years
- ❖ 350K GWh annually
- ❖ 70K MW peak demand - summer
- ❖ Electricity generation
 - ❖ Natural gas 49%
 - ❖ Coal 39%
 - ❖ Nuclear 10%
 - ❖ Renewable* 2%

*Leads US in combined renewable energy potential

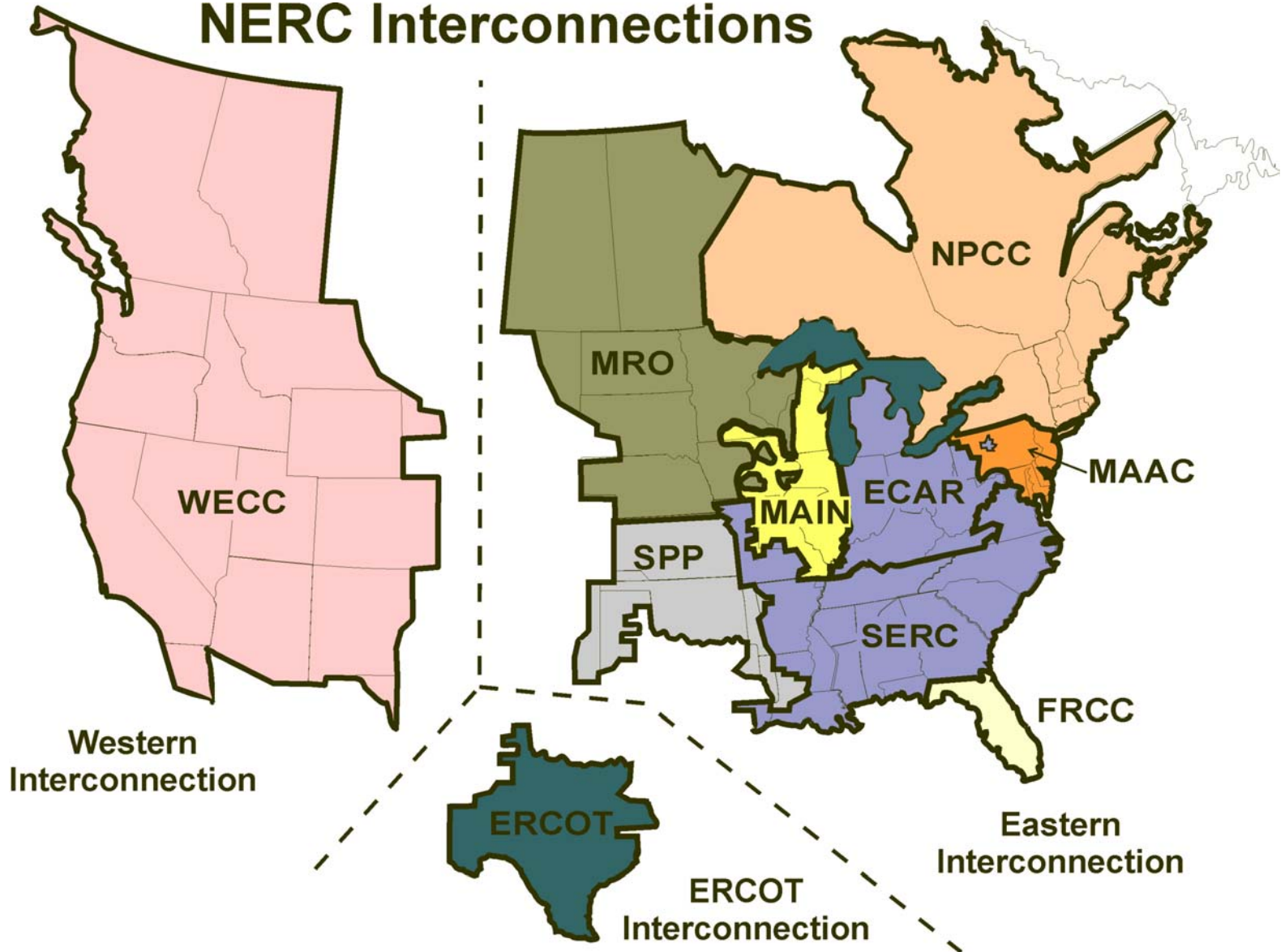
Texas Air Quality Challenges



How Electric Consumption Impacts Emissions (3-1 Rule)



NERC Interconnections



Texas Emissions Reduction Plan

SB5, 77th Texas Legislature(2001)

Legislative findings/policy purpose

- ❖ Reduce air pollutant emissions affecting health
- ❖ Moderate future peak electric power demand, assuring reliability
- ❖ Controlling energy costs for residents and business in the state

Texas Emissions Reduction Plan

SB5, 77th Texas Legislature(2001)

Mobile

- ❖ Emissions Reduction Incentive Grants
- ❖ New Technology Research and Development

Building Energy Efficiency

- ❖ Building Energy Performance Standards
- ❖ Local Government Energy Efficiency

SIP-Creditable EE/RE



- ❖ Building energy codes
- ❖ Local solar photo-voltaic (PV) installations
- ❖ Local solar thermal installations
- ❖ Zero emission distributed generation (Fuel cells)
- ❖ Wind power purchases
- ❖ Water/wastewater energy-related improvements
- ❖ Street lighting and traffic signal lighting improvements
- ❖ Energy conservation building retrofits
- ❖ Appliance upgrades and cool roofs
- ❖ LEED-certified or comparable new buildings
- ❖ Building commissioning projects

Texans Want Clean Energy

IRP Deliberative Polls™ ('95-'98)

Preference?

- ❖ Renewables 49%
- ❖ Efficiency 31%
- ❖ Fossil 14%
- ❖ Buy and Transport 5%

Will you pay more?

- ❖ Renewables + \$5
- ❖ Efficiency + \$2
- ❖ Fossil + \$0

(8 largest IOUs, 67% of Texas customers)

Texas Renewable Energy Portfolio Standard (RPS)

Enacted - 1999

- ❖ 2,000 new MW by 2009

Status - 2005

- ❖ 1322 MW added
- ❖ 486 MW under construction
- ❖ 720 MW authorized/permitted
- ❖ Over \$1.5 Billion invested
- ❖ Construction, O&M jobs

RPS Rural Economic Impact



- ❖ *"2nd industry in 80 years"* - Mayor Phillips
McCamey, TX (pop. 1,650)
- ❖ New school via property taxes
Trent, TX (pop. 300)
- ❖ Tower paint shop – 300 jobs
Coleman, TX (pop. 4,800)

2005 Perryman Group Study on Renewable Energy

Major Findings:

- ❖ Creates net benefits during construction
- ❖ Generates and ongoing stimulus from operations, royalty payments and reduced power costs on a continuing basis
- ❖ Exerts downward pressure on natural gas prices
- ❖ Provides greater predictability and improved environmental outcomes

RPS Expansion

SB 20 ('05 Legislature, 1st Special Session)

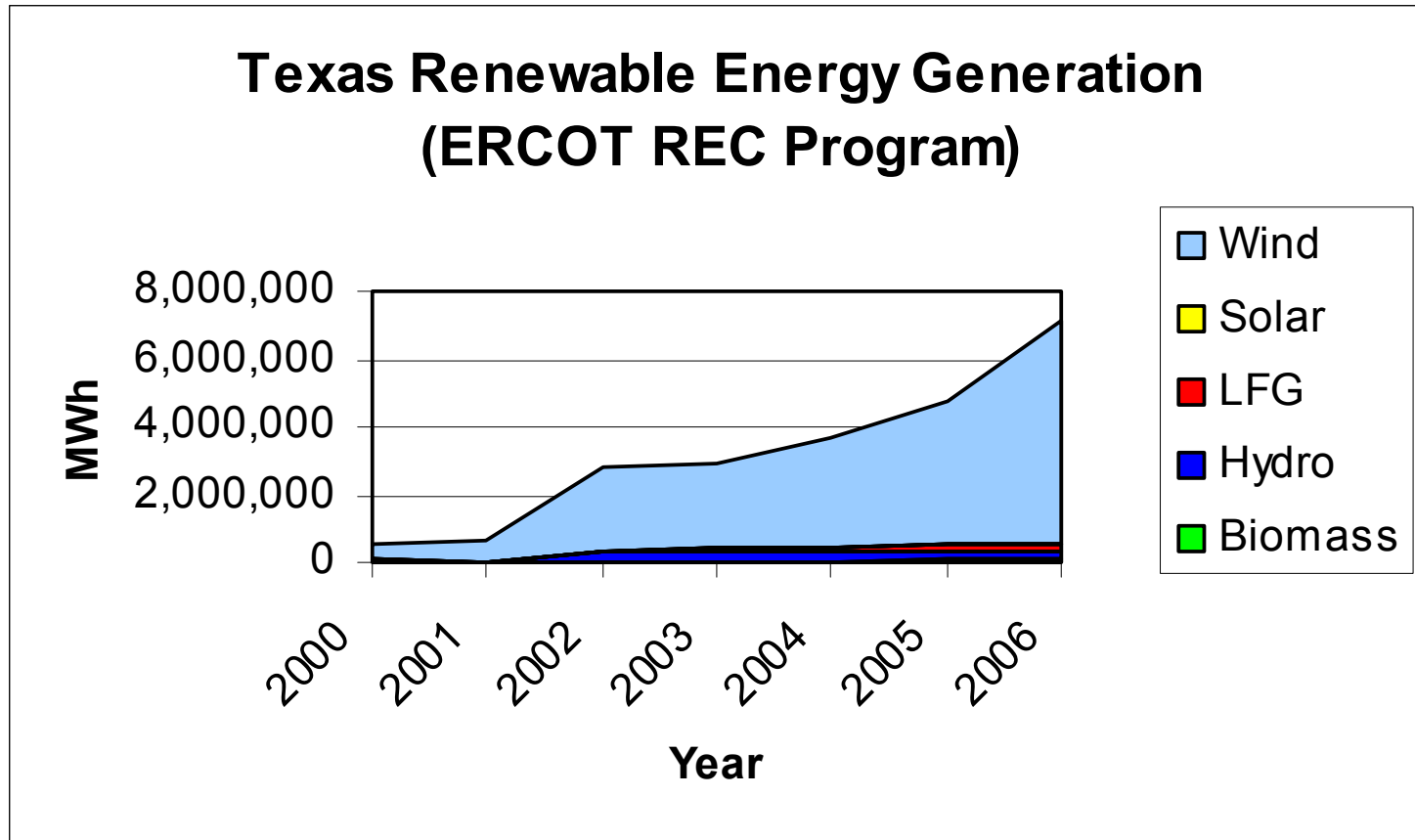
- ❖ 5,000 new MW by 2015
- ❖ 500 MW non-wind carve out
- ❖ Fixes “chicken-and-egg” problem:
 - ❖ PUC designates best development zones
 - ❖ Transmission will be built to zones
 - ❖ Cost recovery for transmission owners is assured
- ❖ \$3.8 billion net economic benefit

<p align="center">Net Economic Benefit of</p> <p align="center">Expanding Transmission Infrastructure to Connect Additional Renewable and Other Energy Generated in West Texas</p> <p align="center">and</p> <p align="center">Developing Renewable Generating Facilities to Achieve 10,000 MW (Net Increase of 7,633 MW) Capacity by 2015</p>			
	<i>Output Gain*</i>	<i>Employment Gain</i>	<i>State and Local Tax Revenue</i>
Construction of Transmission Lines (including offset for added costs recovery from users)**	\$587,746,718	10,085 Person-Years of Employment	\$89.9 million
Construction of Additional Renewable Capacity	\$4,623,126,266	57,984 Person-Years of Employment	\$277.7 million
Overall Gains From Ongoing Implementation (post Construction) of Renewable Facilities (net benefits cumulative through 2015)***	\$2,148,730,298	28,721 Person-Years of Employment	\$998.3 million****
<p>*Output as measured by Gross State Product (2005\$).</p> <p>**Values reflect only the portion of net (of costs) transmission facilities' construction benefits allocated to renewables (approximately 40%).</p> <p>***Includes cumulative net benefits derived from operations, landowner royalty payments, power cost savings, and reductions in natural gas prices.</p> <p>****Net property taxes are assigned to operations rather than construction.</p>			



RPS Status – May 2007

Wind: 3,150 MW installed, 942 MW under construction



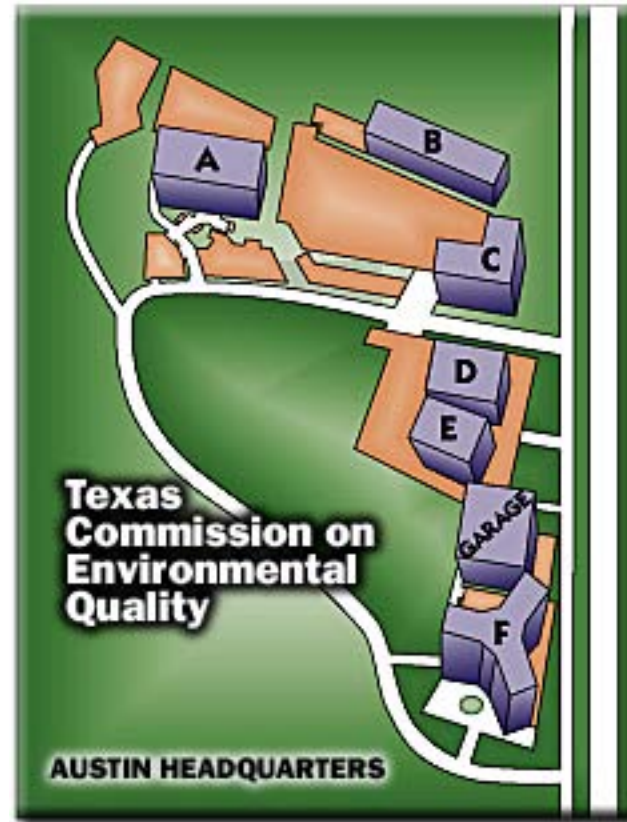
Renewable Energy for Hedging

- ❖ 100% via **GreenChoice®**
- ❖ 685,000 kWh annually
- ❖ Early subscriber to **GreenChoice®**
- ❖ Saved \$28,700 from 4/01 – 5/07



Renewable Energy for Hedging

- ❖ 100% via **GreenChoice®**
- ❖ 13 million kWh annually
- ❖ Early subscriber to **GreenChoice®**
- ❖ Saved \$576,200 from 4/01 – 5/07



EE Portfolio Standard

Utilities required to offset 10% of growth in demand (SB7, 1999)

- ❖ Standard offer and market transformation programs
- ❖ Funded via utility rates
- ❖ Available to all customer classes
- ❖ Incentive levels set as a percentage of avoided cost
- ❖ Incentive levels differ by customer class
- ❖ Program cost roughly \$80M per year

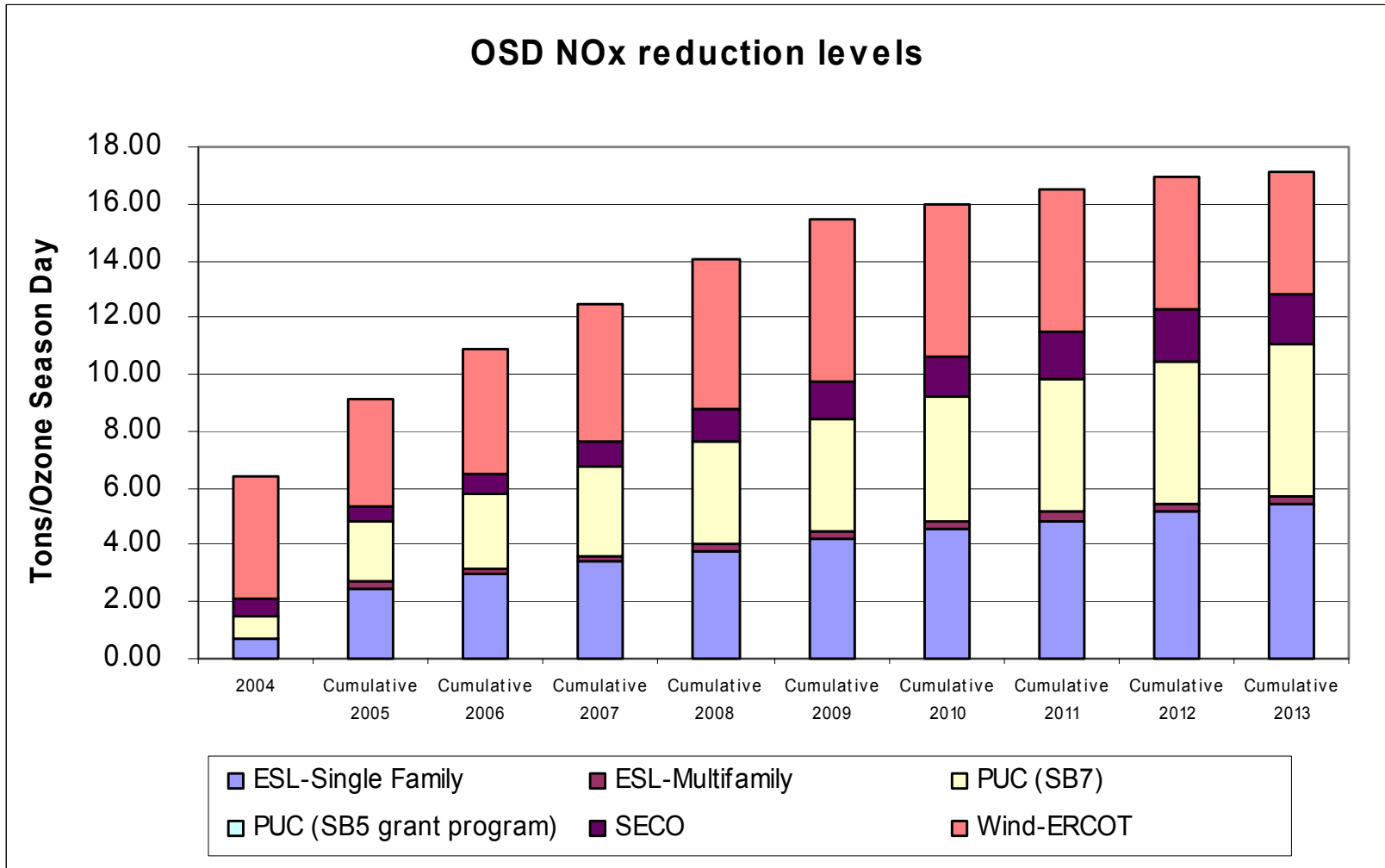
EEPS Program Results

Independent audit in 2006 verified 100% of the 2003 and 2004 reported savings

❖ Demand savings exceeded statewide goals:

2003	2004	2005
370,000 MWh	435,000 MWh	496,900 MWh
150 MW	192 MW	181 MW
goal + 10%	goal + 30%	goal + 27%

EE/RE Air Quality Co-Benefits



Questions?

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www.seco.cpa.state.tx.us

