



Update on Ozone Issues and Environmental Performance of Electric Generating Plants in Texas

Testimony Before the House Committee on Environmental Regulation
February 25, 2010

AECT Principles



- AECT is an advocacy group composed of member companies committed to:
 - Ensuring a modern, reliable infrastructure for the supply & delivery of electricity.
 - Supporting efficient competitive markets that are fair to customers and market participants.
 - Supporting consistent and predictable oversight and regulation that will promote investment and ensure the stability of Texas' electric industry.
 - Promoting an economically strong and environmentally healthy future for Texas, including conservation and efficient use of available resources.
- AECT member companies remain dedicated to providing Texas customers with reliable service and are committed to the highest standards of integrity.

The Association of Electric Companies of Texas, Inc. (AECT) is a trade organization of investor-owned electric companies in Texas. Organized in 1978, AECT provides a forum for member company representatives to exchange information about public policy, and to communicate with government officials and the public. For more information, visit www.aect.net.

EPA Proposed 8-hr Ozone Standard



- On January 7, 2010, the Environmental Protection Agency (EPA) proposed to lower the federal primary eight-hour ozone standard to between 60 and 70 parts per billion (ppb) and proposed a cumulative, seasonal secondary standard with a range of 7 to 15 parts per million (ppm)-hour.
- The 60-day public comment period on the proposed rule closes on March 22, 2010.
- Final Standards are expected to be issued August 31, 2010.
- EPA has proposed an Accelerated Schedule for Designating Non-Attainment areas for the Proposed Ozone Standard:
 - By January 2011: States make recommendations for areas to be designated attainment, nonattainment or unclassifiable
 - By July 2011: EPA makes final area designations
 - August 2011: Designations become effective
 - December 2013: State Implementation Plans (SIP), outlining how states will reduce emissions to meet the standards, are due to EPA.
 - Compliance with the SIP is dependant on the degree of non-attainment of the area. (roughly ranges from 3-9 years)

EPA's Proposed 8-hr Ozone Standard May be Unreachable in Texas

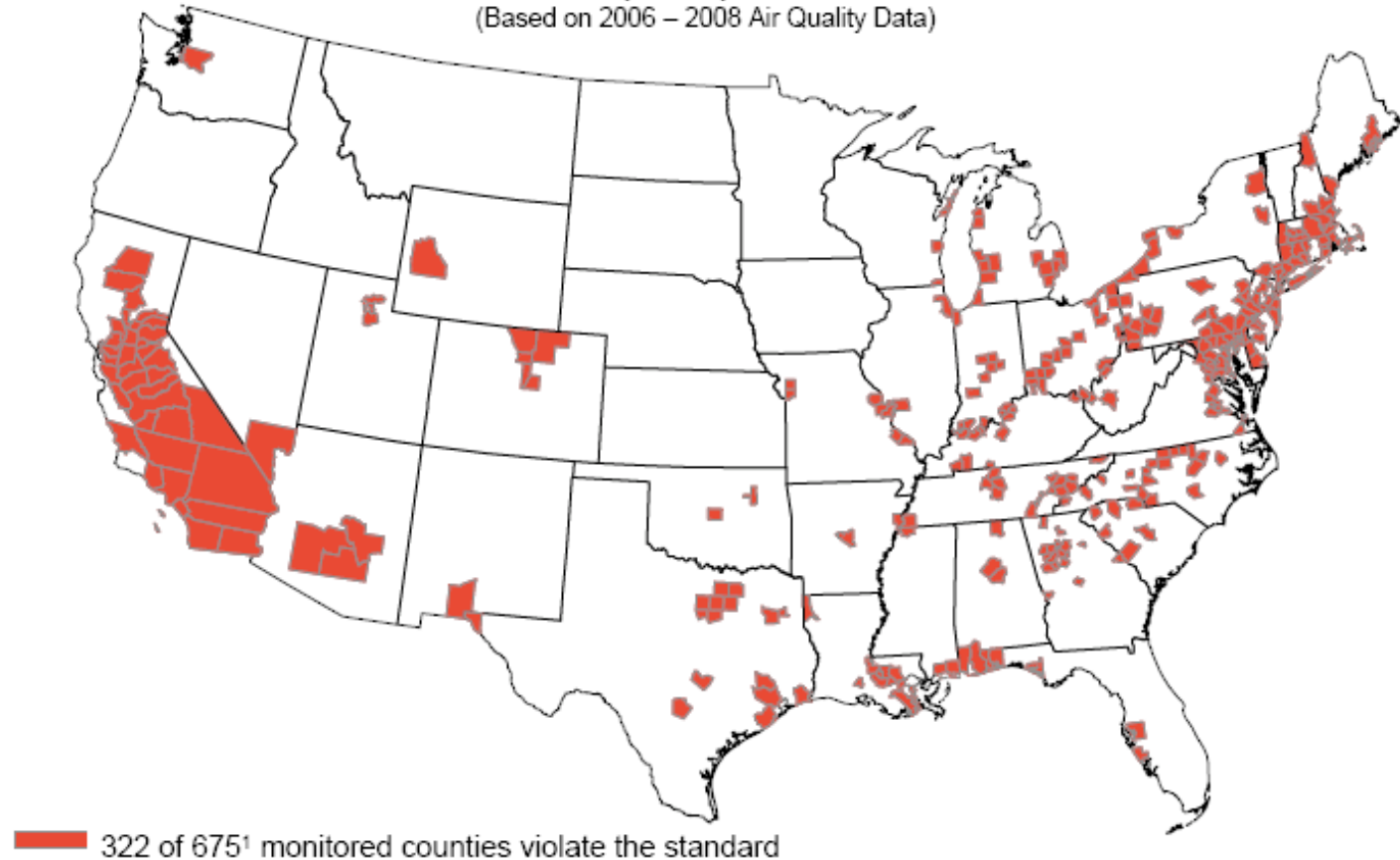


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- EPA last lowered the 8-hour ozone standard in March 2008 from 0.08 parts per million (ppm) to 0.075 ppm.
 - The State, cities and businesses are working to meet the existing standard.
 - The two previous EPA standards set by EPA have been attained throughout the state.
 - EPA's new proposed 8-hr ozone standard ranges from 0.060 ppm to 0.070 ppm
 - Natural background concentrations of ozone in most areas of East Texas are higher than 0.060 ppm.
 - Thus, no amount of technology or money will allow us to comply.

Counties with Monitors Violating the Existing Primary 8-hr Ozone Standard (0.075 ppm)



Counties With Monitors Violating the March 2008 Ground-Level Ozone Standards
0.075 parts per million
(Based on 2006 – 2008 Air Quality Data)



Notes:

1. Counties with at least one monitor with complete data for 2006 – 2008
2. To determine compliance with the March 2008 ozone standards, the 3-year average is truncated to three decimal places.

Source: EPA, 2010

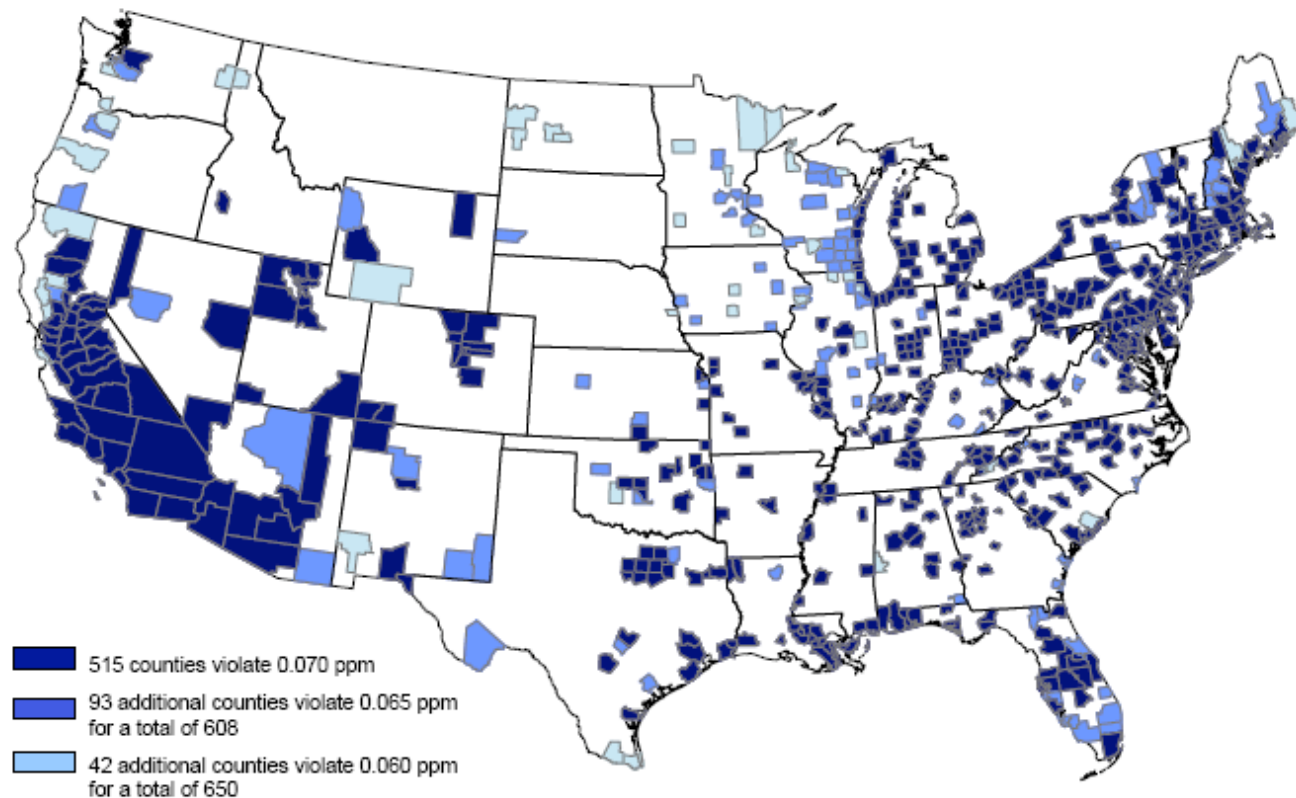
Counties with Monitors Violating Proposed Primary 8-hr Ozone Standard (0.060-0.070 ppm)



Counties With Monitors Violating Proposed Primary 8-hour Ground-level Ozone Standards 0.060 - 0.070 parts per million

(Based on 2006 – 2008 Air Quality Data)

EPA will not designate areas as nonattainment on these data, but likely on 2008 – 2010 data which are expected to show improved air quality.



Notes:

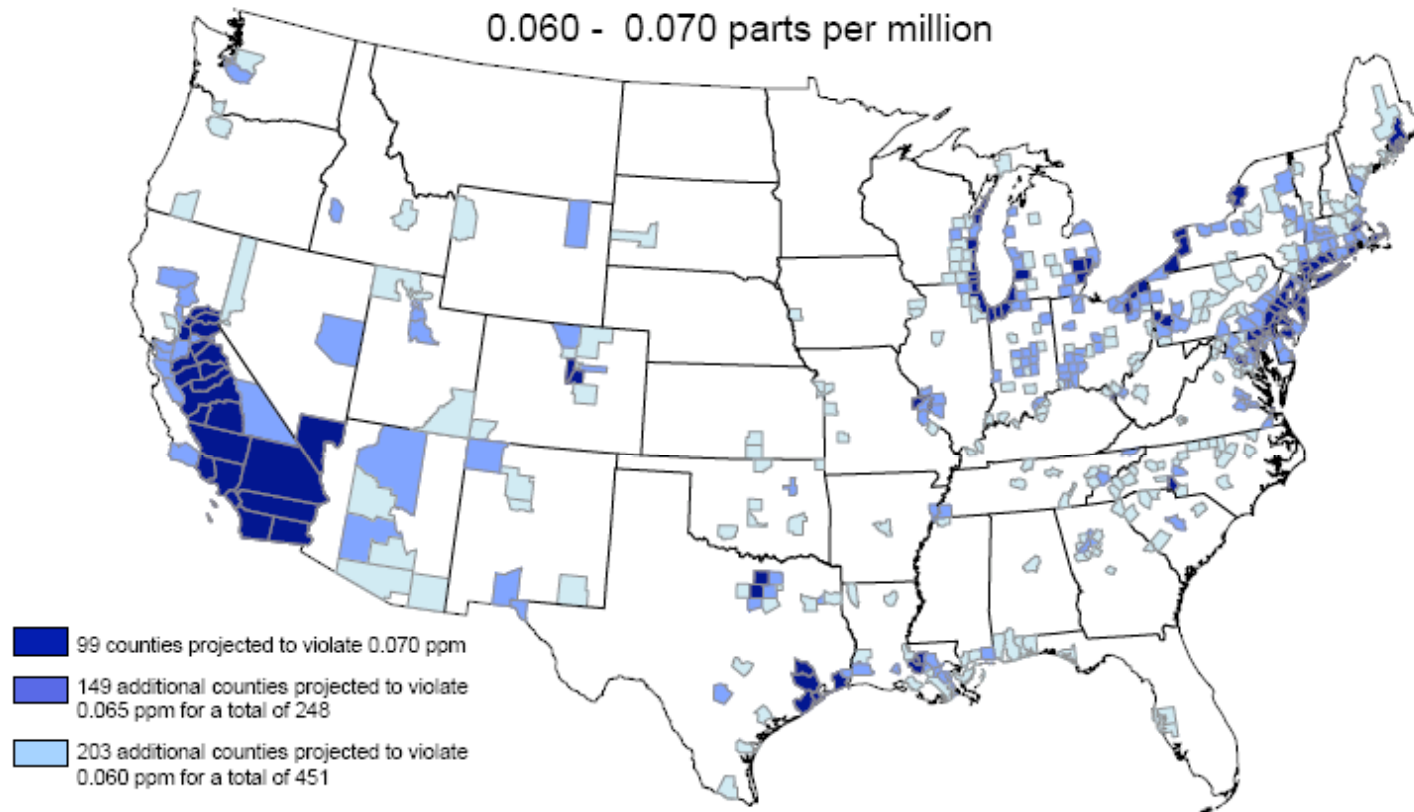
1. No monitored counties outside the continental U.S. violate.
2. EPA is proposing to determine compliance with a revised primary ozone standard by rounding the 3-year average to three decimal places.

Source: EPA, 2010

Counties with Monitors Projected To Violate Proposed Primary 8-hr Ozone Standard (0.060-0.070 ppm) in 2020



Counties With Monitors Projected to Violate Proposed Primary 8-hour Ground-Level Ozone Standards in 2020
0.060 - 0.070 parts per million



Notes:

1. The modeled emissions in 2020 reflect the expected emissions reductions from federal programs by 2020 including: the Clean Air Interstate Rule, the Clean Air Mercury Rule, the Clean Air Visibility Rule, the Clean Air Nonroad Diesel Rule, the Light-Duty Vehicle Tier 2 Rule, the Heavy Duty Diesel Rule, the proposed rules for Locomotive and Marine Vessels and for Small Spark-Ignition Engines, and an estimate of State-level mobile and stationary source controls that were projected to be needed to attain pre-existing PM 2.5 and ozone standards.
2. Controls applied are illustrative. States may choose to apply different control strategies for implementation.
3. EPA did not model future violations outside the continental U.S.
4. EPA is proposing to determine compliance with a revised primary ozone standard by rounding the 3-year average to three decimal places.

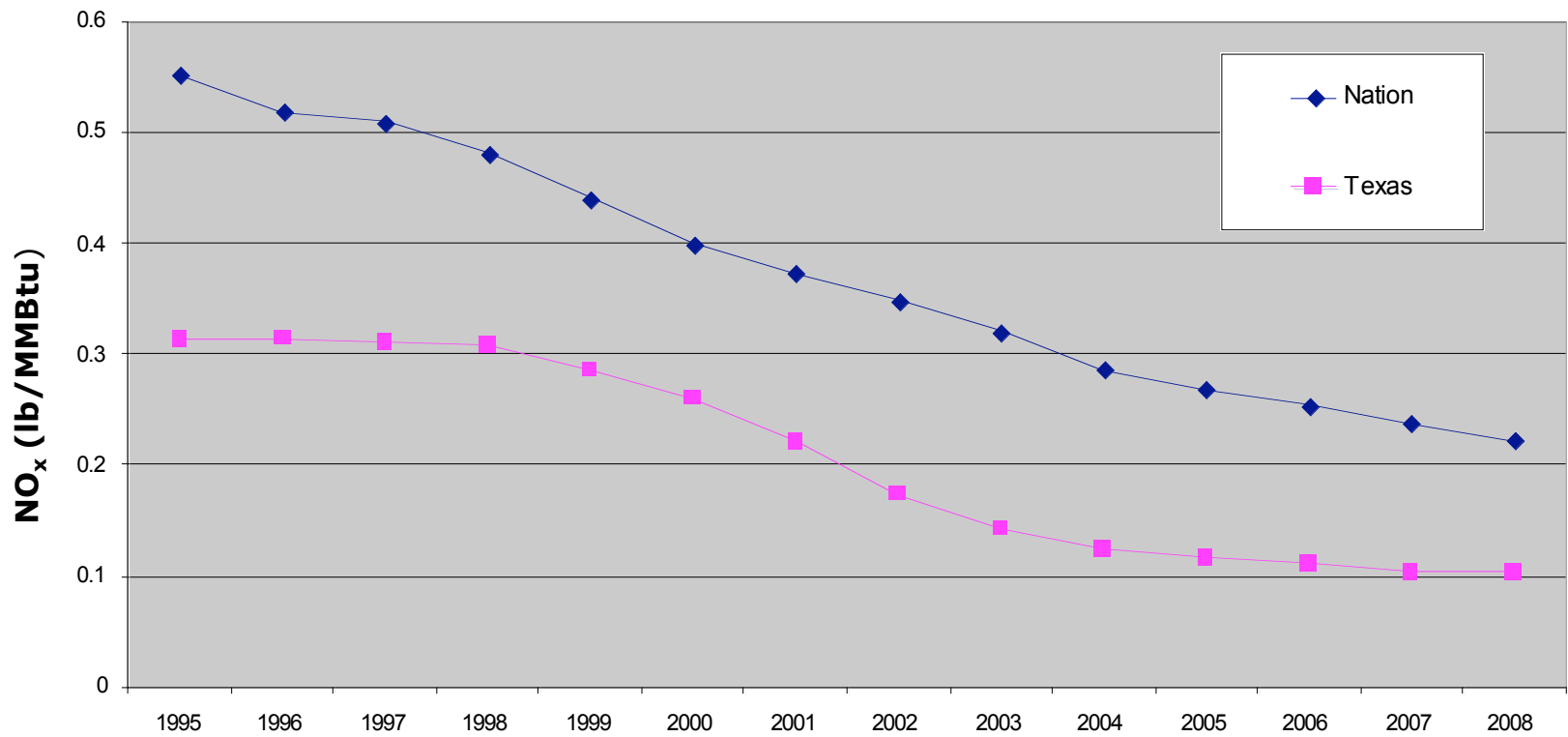
Electric Generator-
NO_x Reductions Achieved Under
TCEQ 1-hr Ozone SIP Rules



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- **HGA SIP-** 86% overall reduction from 1997
 - **DFW SIP-** 88% overall reduction from 1997
 - **Beaumont SIP-** 45% reduction from 1997
 - **East Texas SIP-** 51% reduction from 1997

Between 2000 and 2005, electric generating companies in Texas spent over \$1 billion on NO_x emission reductions alone.

Emission Rate Trends of NO_x from Existing Texas and U.S. Power Plants



Notes:

NO_x Emission Rates for New Coal-Fired Power Plants range from 0.05 to 0.08 pounds per million Btu

NO_x Emission Rates for New Gas-Fired Power Plants are approx. 0.015 pounds per million Btu

Reductions Will Be Needed From More Sources Than in the Past



- **Power plants are doing their fair share**
 - Power plants have reduced NO_x (a precursor to ozone) by 50% to ~90% across the state.
 - Texas has among the cleanest NO_x emission rates for power plants compared to other states.
- **Federally regulated sources must be addressed in large urban areas**
 - Mobile sources, planes, locomotives, ships and truck engines are components of the State emissions profile.
 - This handicap should be addressed in any new rules.
- **Proposed standard exceeds current background ozone concentrations**
 - In Texas, background ozone concentrations in many areas are higher than the proposed ozone standard.
 - The combination of strong sunlight and vast vegetation and pine forests in the eastern half of Texas make the natural biogenic contribution a significant portion of the background ozone in Texas.



Appendix

Texas' Economy and Electric Generation

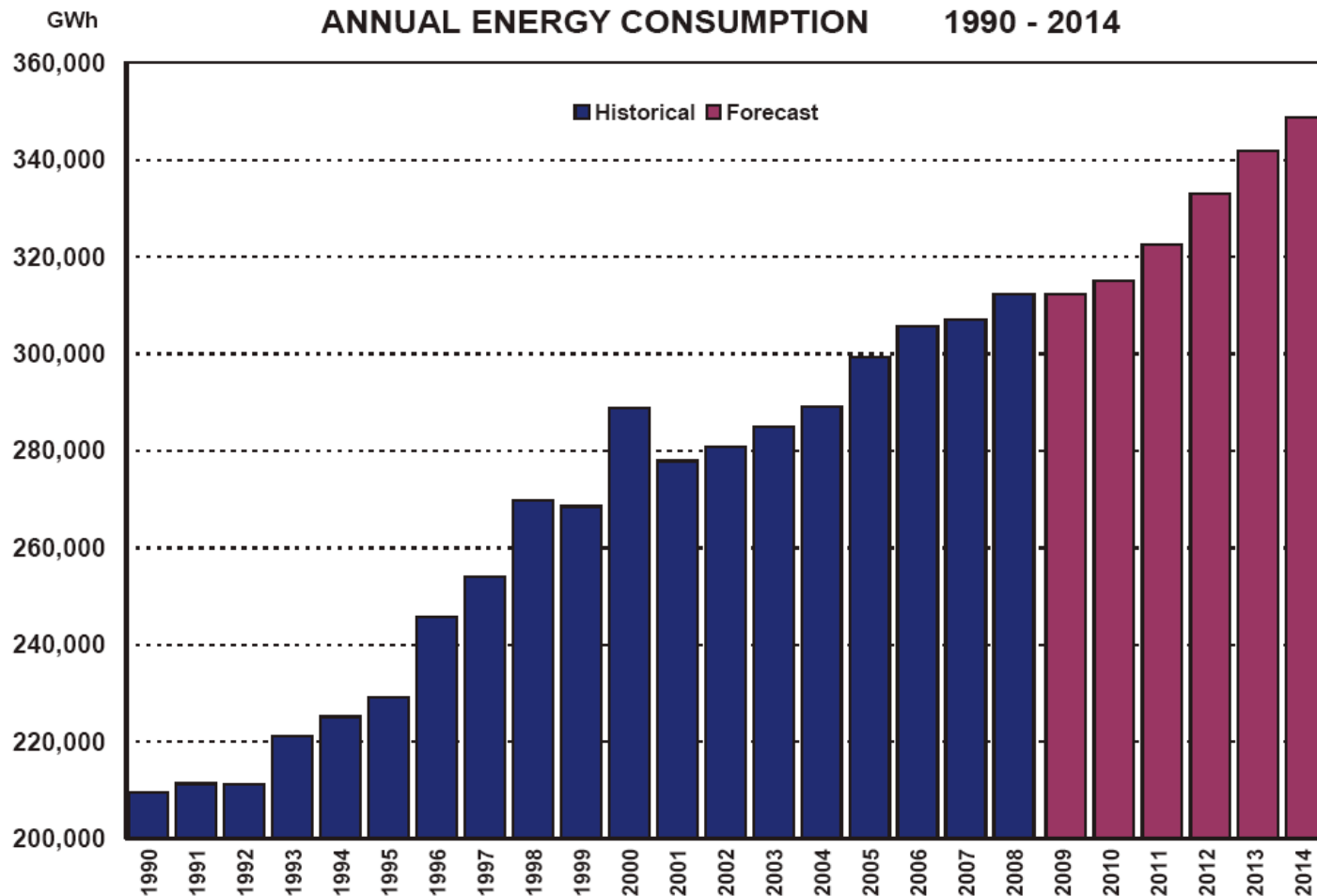


- Texas generates more electricity than any other state; in fact, Texas produces almost 80% more electricity than the next most generating state.¹
- Texas produces about:
 - 60% of petrochemicals produced in the U.S.
 - 30% of gasoline and diesel refined in the U.S.
 - 10% of electricity generated in the U.S.
- Between 2000 and 2007, Texas' population – currently 23.5 million — grew at more than double the national rate — 14.6 percent versus 7.2 percent.²
 - By 2040, the population will increase by more than 50 percent, growing to an estimated 35.8 million people.
 - Economic activity will see a corresponding increase.

¹Source: EIA, 2008 State Electricity Profiles

²Texas Association of Business, "Hammond on taxes and government growth," 2/11/10

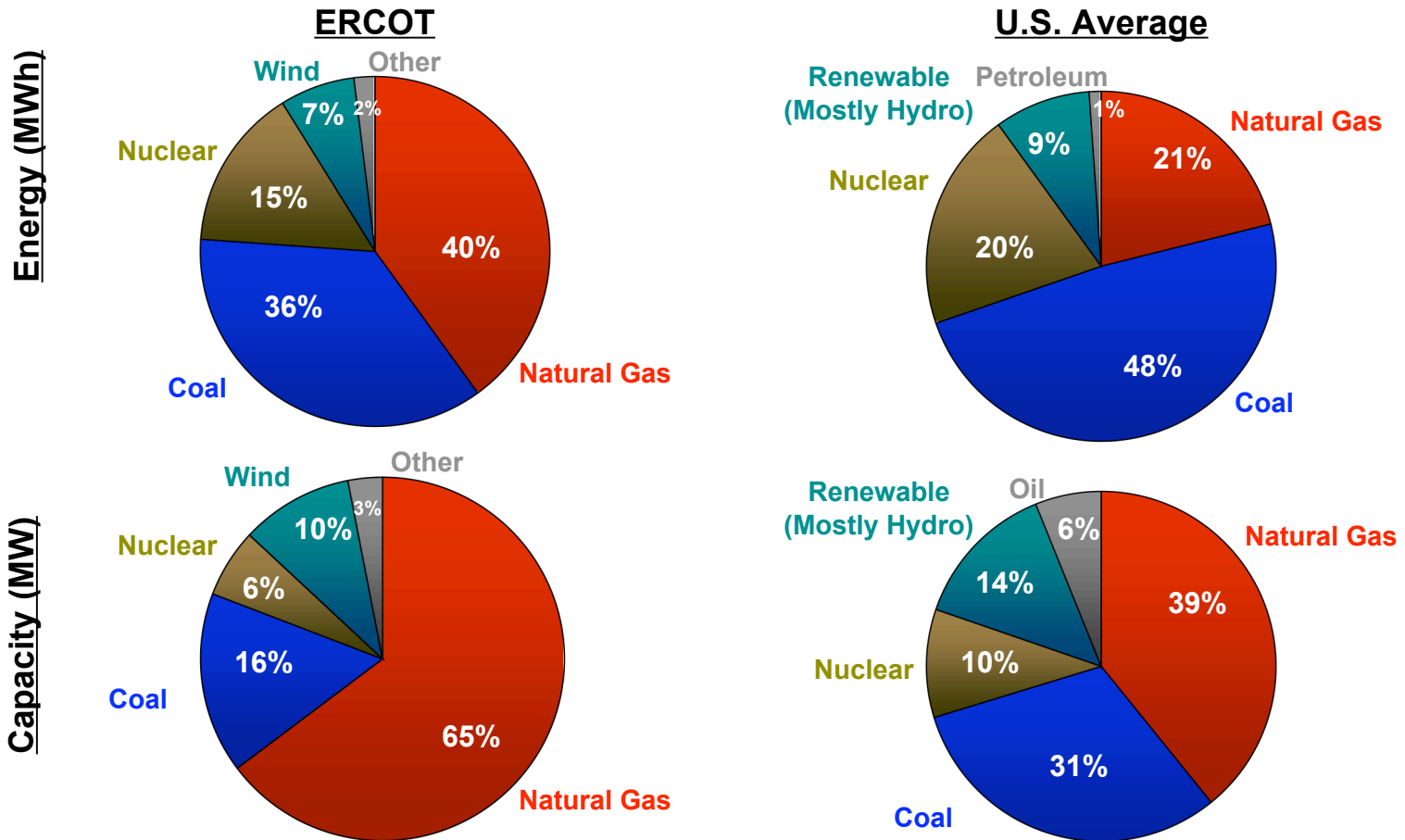
Electric Consumption Continues to Grow in ERCOT



Note: The peak in electric consumption in 2000 was due to an exceptionally hot summer.

Source: ERCOT, "Report on Existing and Potential Electric System Constraints and Needs," December 2009

ERCOT Generation Mix Compared to U.S. Average



Note: Oil-fired generation is negligible in ERCOT, accounting for less than 0.1% of ERCOT capacity and load; numbers may not add up to 100% due to rounding.

Sources: ERCOT (2009 summer data), EIA (2008 data, latest available)