



State and Local Capacity Building

Opportunities for Energy Efficiency and Renewable Energy in State Air Quality Planning

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Emissions Reduction & Energy Leadership Summit

San Antonio TX

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Outline

- **Heightened Interest by States to Implement Energy Efficiency (EE) and Renewable Energy (RE) & Include in Air Quality Planning**

- **EPA Issued SIP Guidance**
 - ◆ for EE/RE Measures (Aug 2004)
 - ◆ Voluntary and Emerging Measures (Sep 2004)

- **Upcoming Air-Energy Integration Activities**



Heightened interest in EE/RE

- **New Air Quality Standards**
 - ◆ more areas affected
 - ◆ more reductions required
 - ◆ many “low hanging fruit” measures have been picked

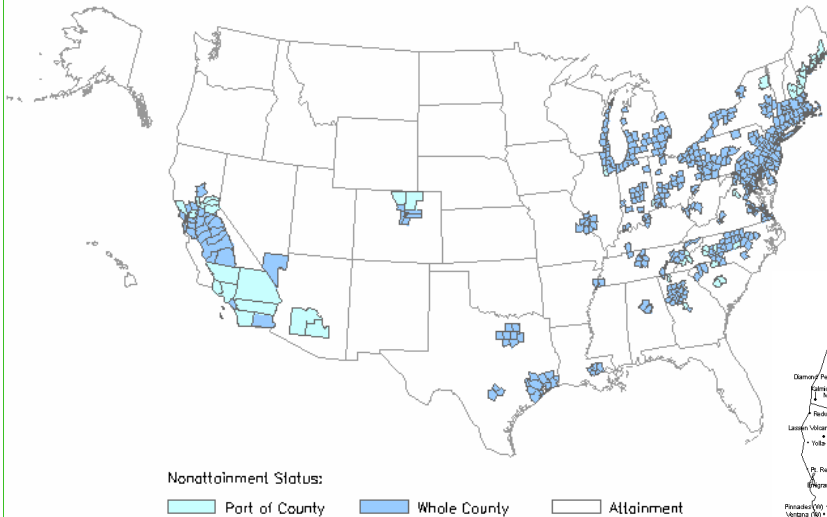
- **EE/RE multiple benefits**
 - ◆ multipollutant/multimedia emission reductions
 - ◆ economic value



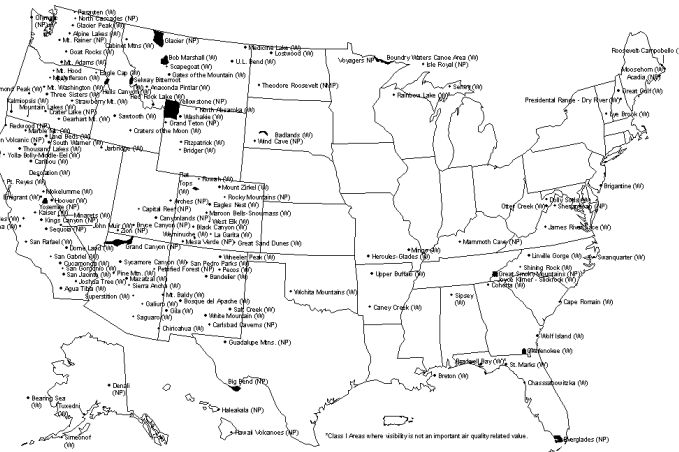
New Air Quality Challenges



Areas Nonattainment of 8 hour Ozone Std.



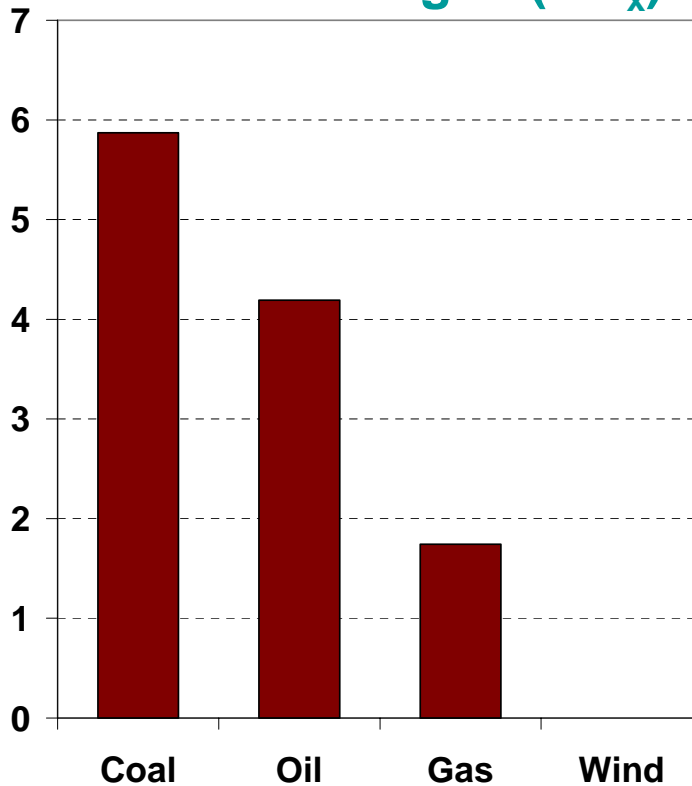
Areas Protected by EPA's Regional Haze Rule



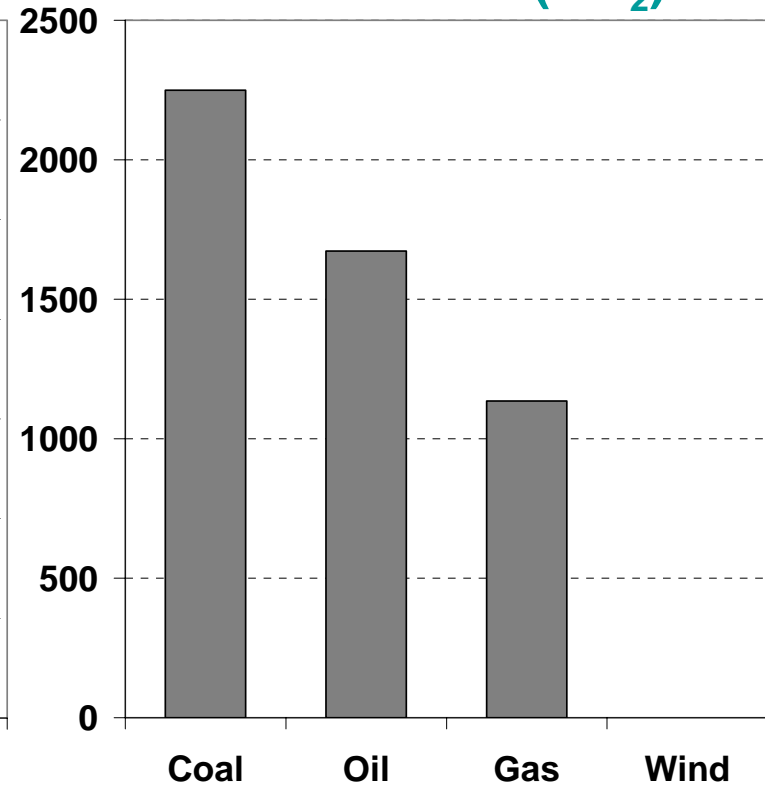
Emission Rates: Fossil vs. Wind (lb/MWh) (Year 2000)



Oxides of Nitrogen (NO_x)



Carbon Dioxide (CO₂)



Data Source: E-GRID2002 v2.0

Prepared 04/16/2004 by Art Diem USEPA 202-343-9340

EPA helping to motivate EE/RE and AQ planning

Some EPA Efforts

- **Guidance: Set asides for EE/RE under cap and trade programs**
 - ◆ States can distribute allowances to EE/RE as incentives
- **Heat Island Reduction Initiative**
- **Green Power Partnership**
- **Combined Heat and Power Partnership**
- **Partnerships with DOE & NREL**
 - ◆ Technical assistance to states
- **EPA Technical forums**

New item

- **SIP Guidance for EE/RE Measures (Aug 2004)**



EPA's new SIP Credit Guidance for EE/RE

- **“Guidance on State Implementation Plan (SIP) Credits for Emission Reductions from Electric-sector Energy Efficiency and Renewable Energy Measures” August 2004**
 - ◆ www.epa.gov/ttn
 - ☞ OAP&G -Title I - Guidance & Policy Documents

- **Intended to support those places that wish to better include EE/RE projects, policies and programs into their SIPs**
 - ◆ **General Information and background**
 - ◆ **Step-by-step procedure**
 - ◆ **List of tools and resources**
 - ◆ **Examples of proposed SIP submissions**



Ways to incorporate EE/RE reductions in SIP Process

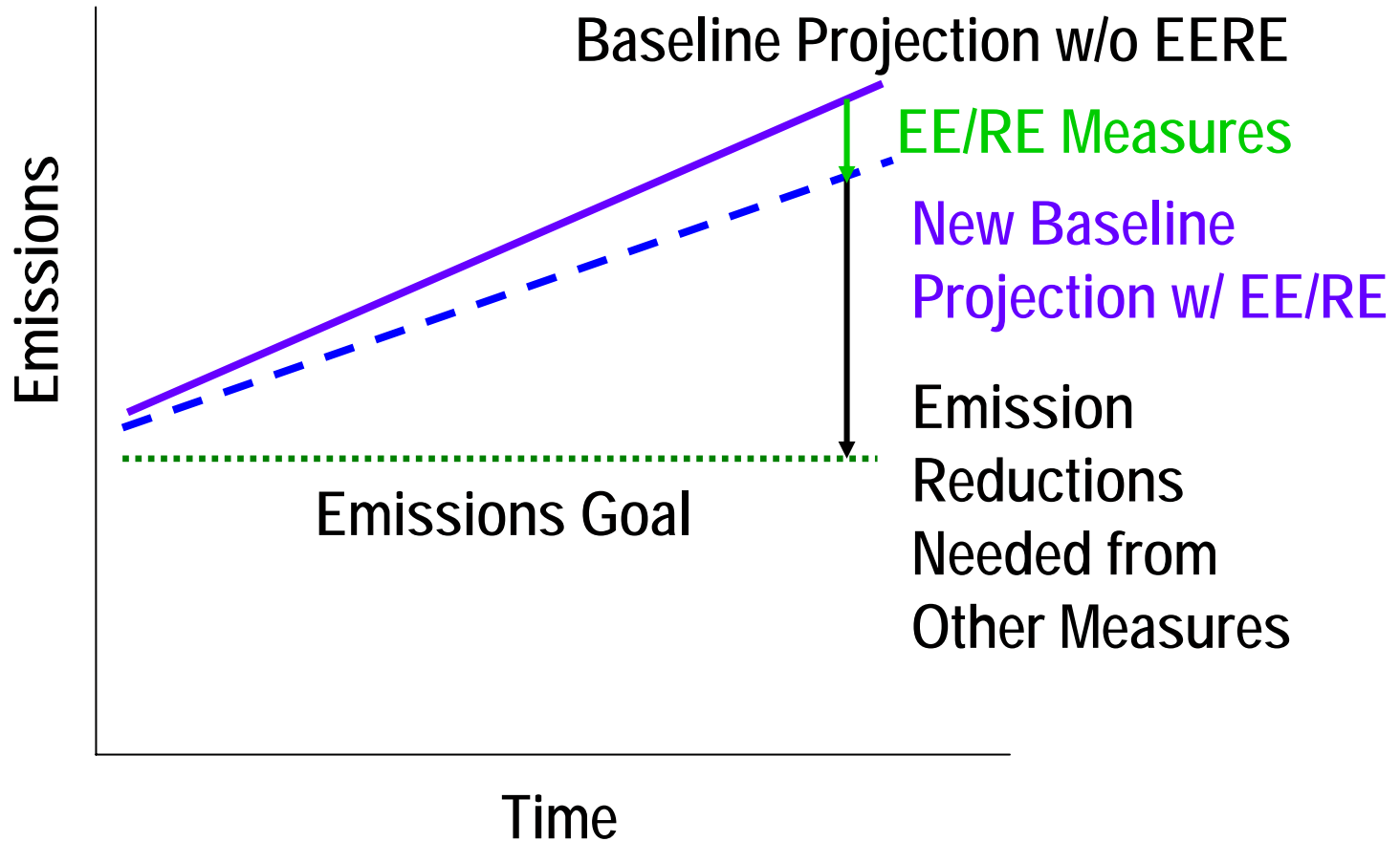
- 1) As part of emission baseline/projections (Emission projections guidance)

- 2) As an emission reduction measure (Guidance on SIP Credit for EE/RE Measures)

- Not as SIP credits -- (Set-aside Guidance)
 - ◆ Incentives can be given to EE/RE projects by allocating emission allowances as part of a cap and trade program



Ways to incorporate EE/RE reductions in SIP Process



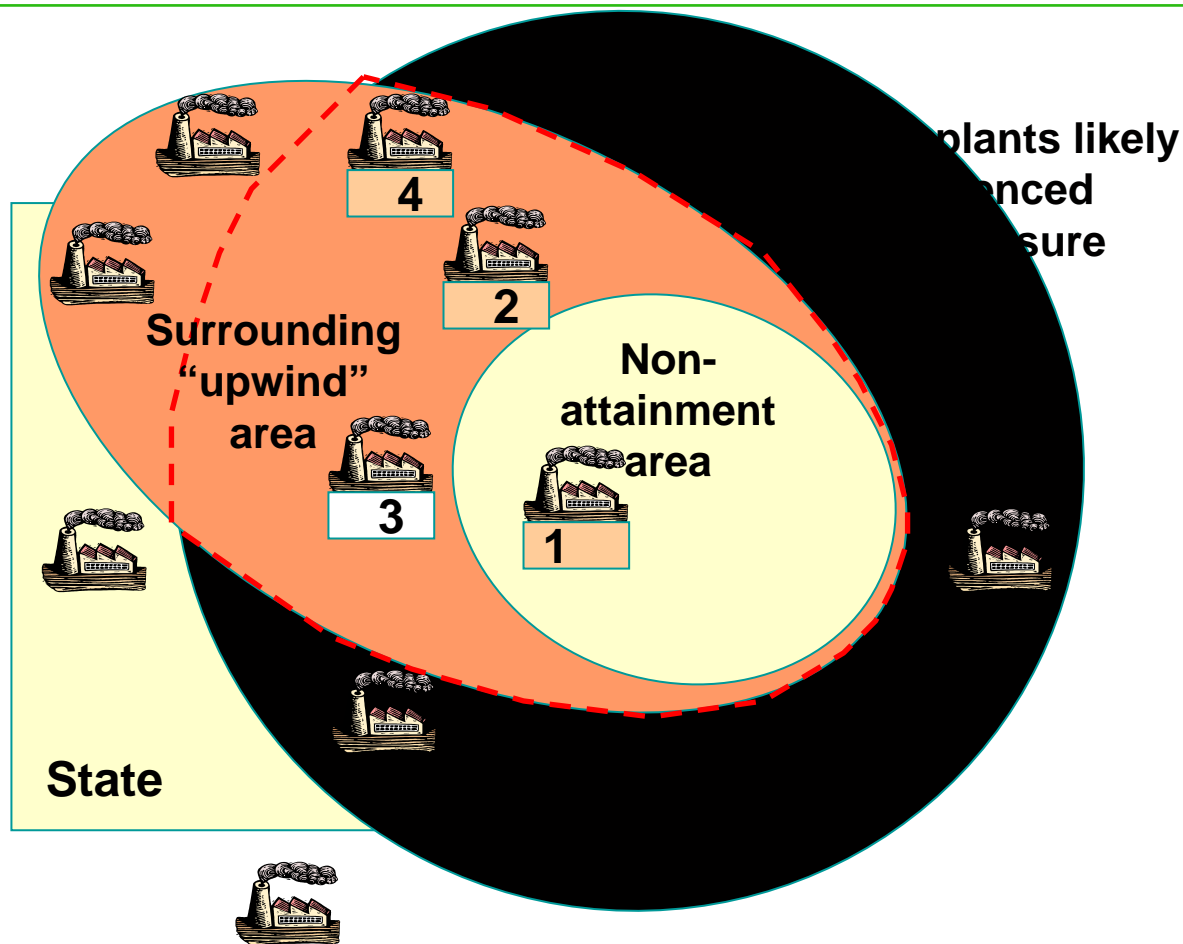


SIPs: What must state officials consider?

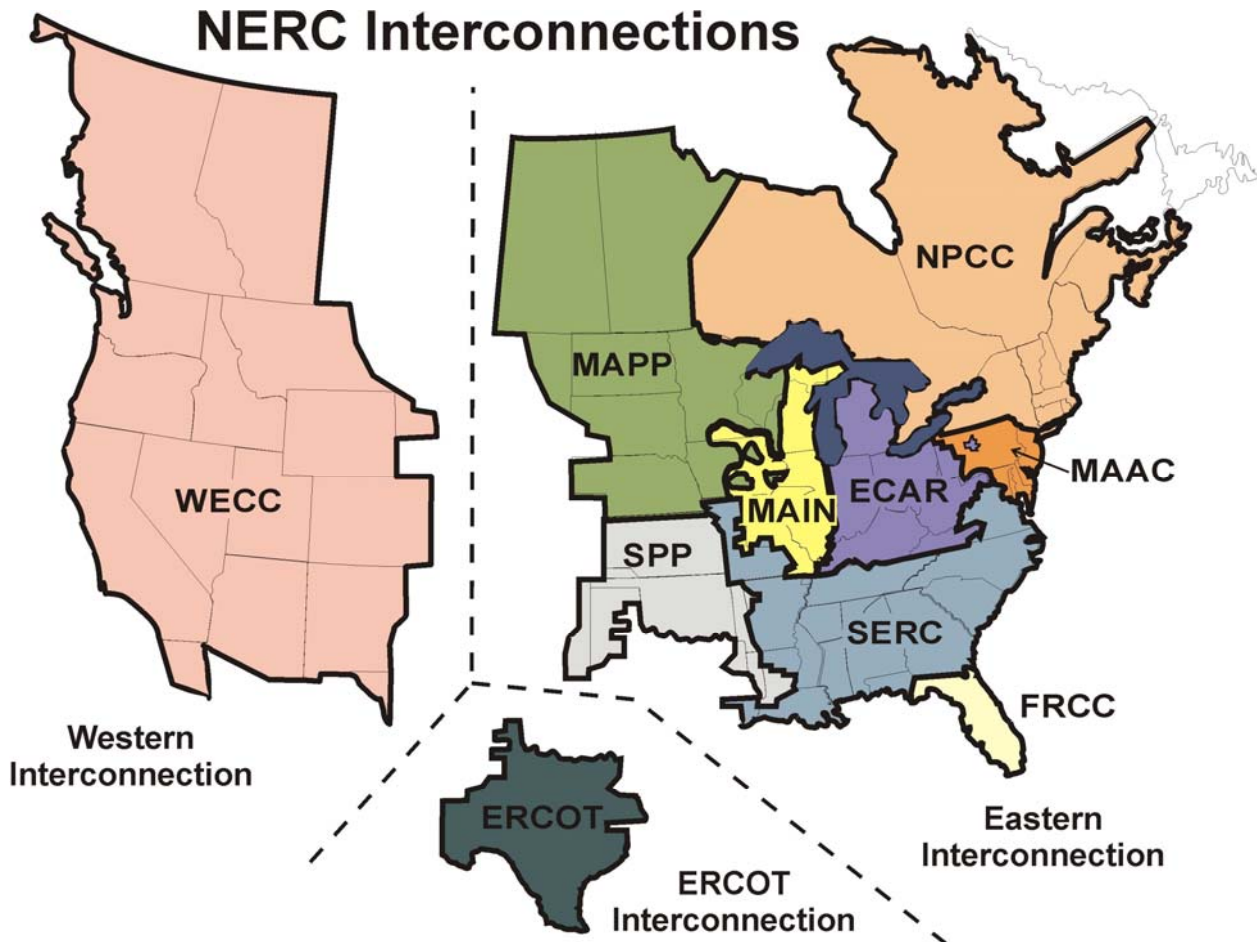
- **Emissions reductions that are:**
 - ◆ **Quantifiable**
 - ◆ **Surplus – not included in baseline or in other measures**
 - ◆ **Enforceable – requirement or voluntary measure**
 - ◆ **Permanent – for the time period of the SIP**

- **Also ...**
 - ◆ **Geographically relevant to the air quality planning area**

Geographic Relevance

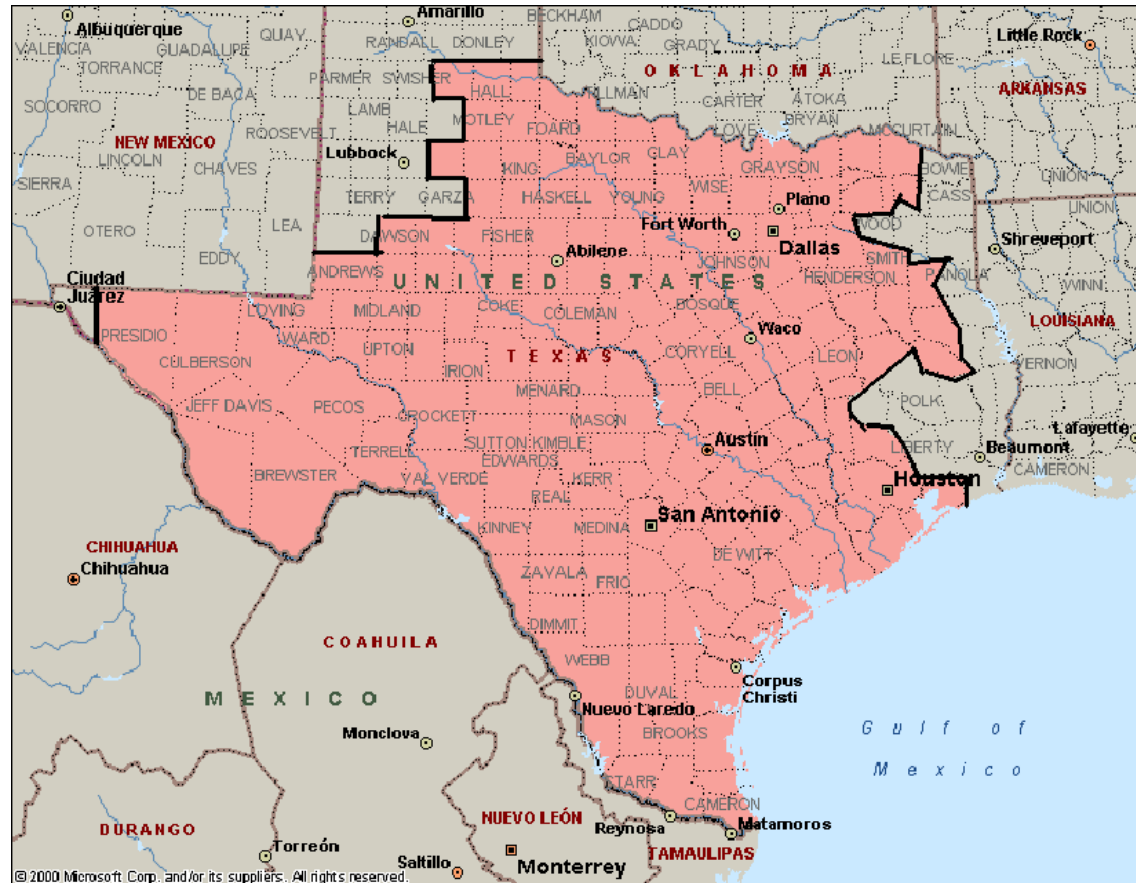


NERC Interconnections



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ERCOT

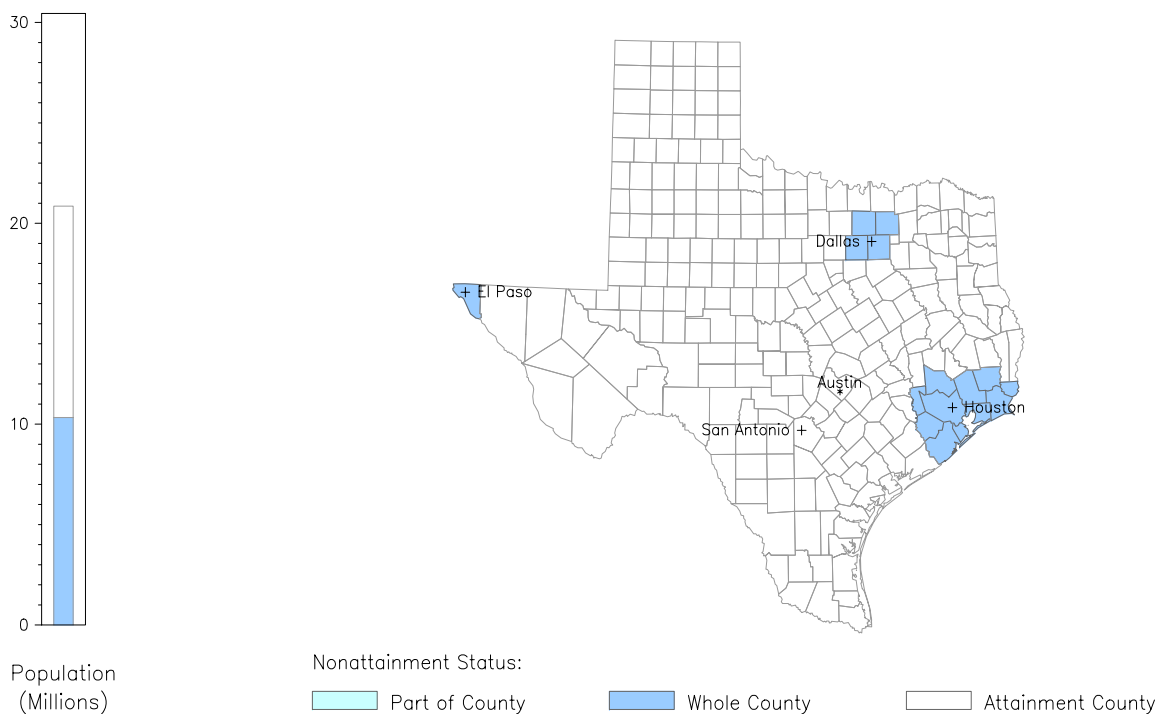


TX 1 hour ozone non-attainment areas



Nonattainment Areas Map – Ozone (1-hour)
Texas

AirData



Source: US EPA Office of Air and Radiation, AIRS Database

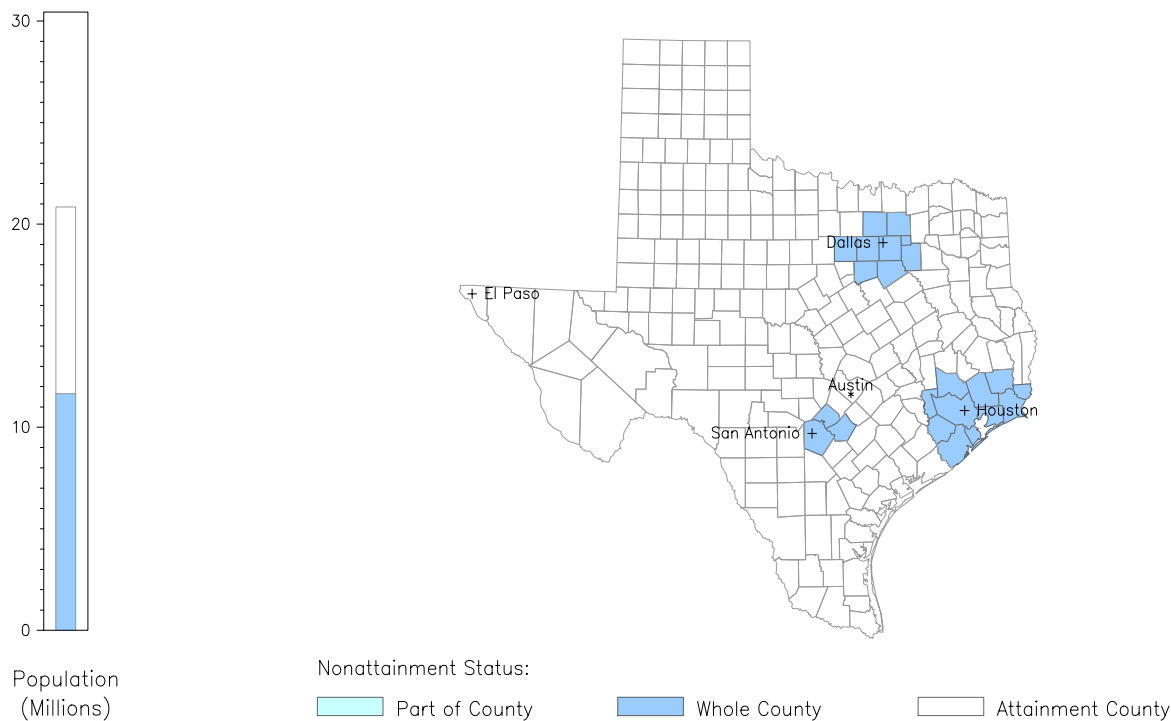
Friday, December 10, 2004

TX 8 hour ozone non-attainment areas



Nonattainment Areas Map – Ozone (8-hour)
Texas

AirData

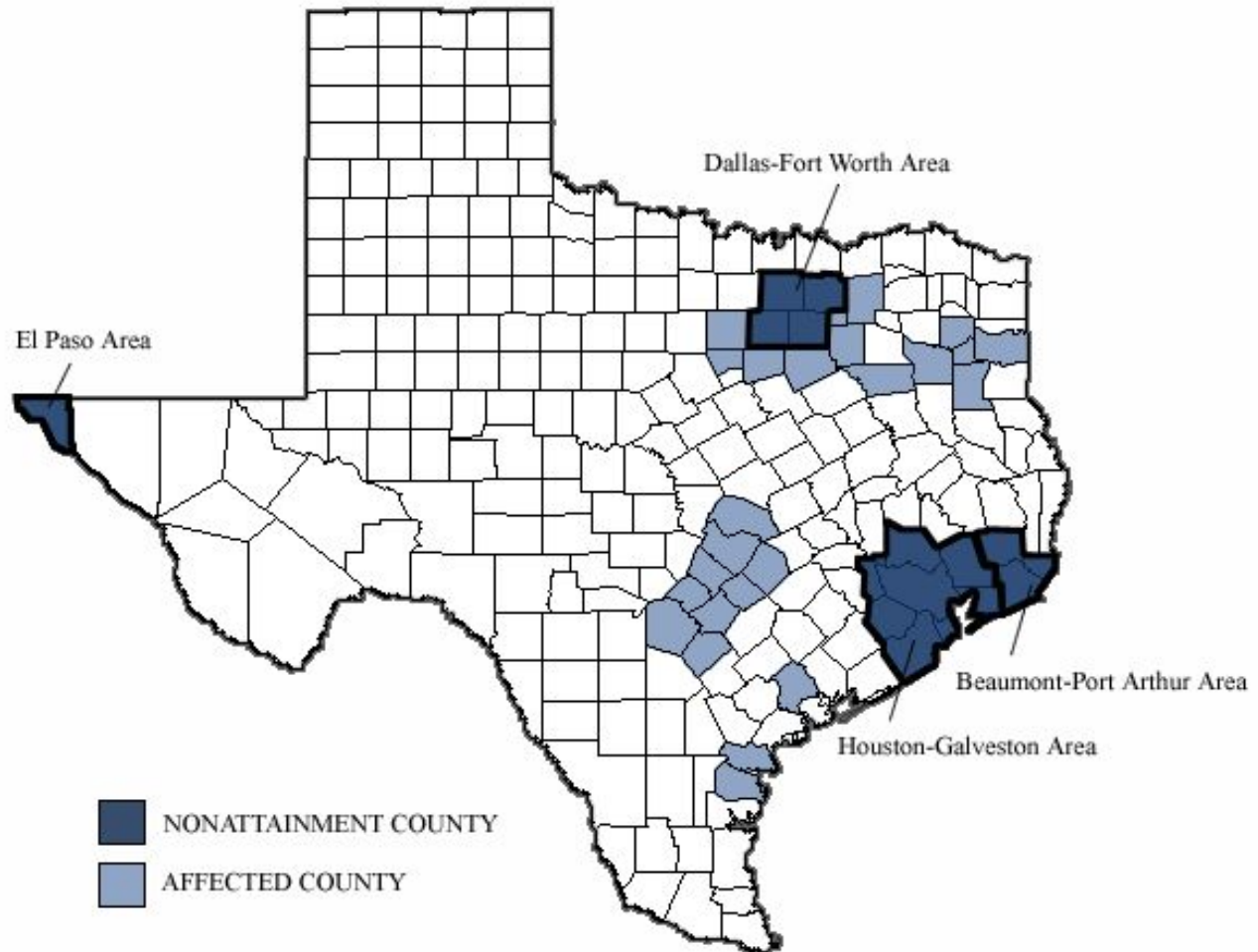


Source: US EPA Office of Air and Radiation, AIRS Database

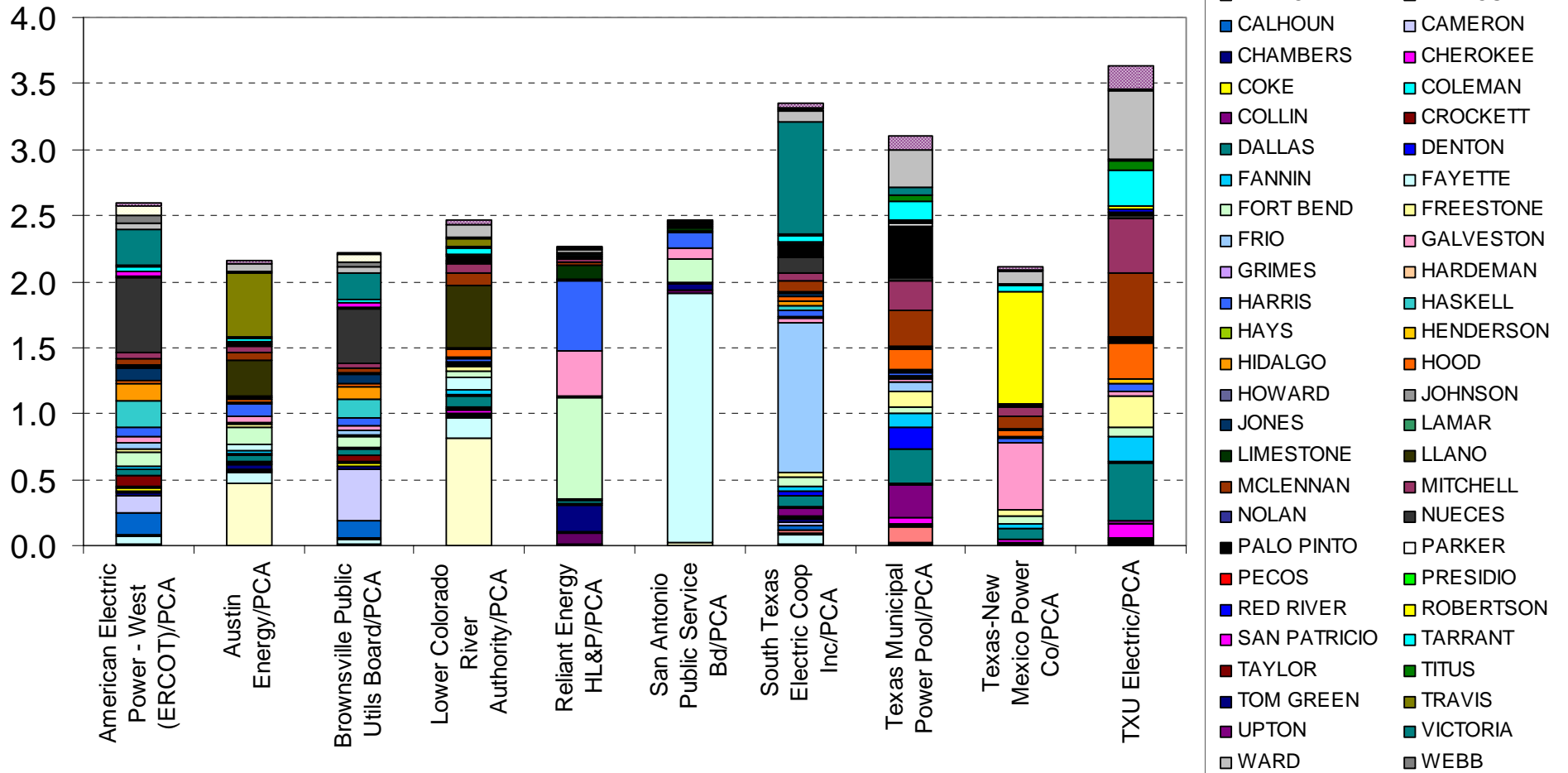
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*State and Local
Capacity Building*

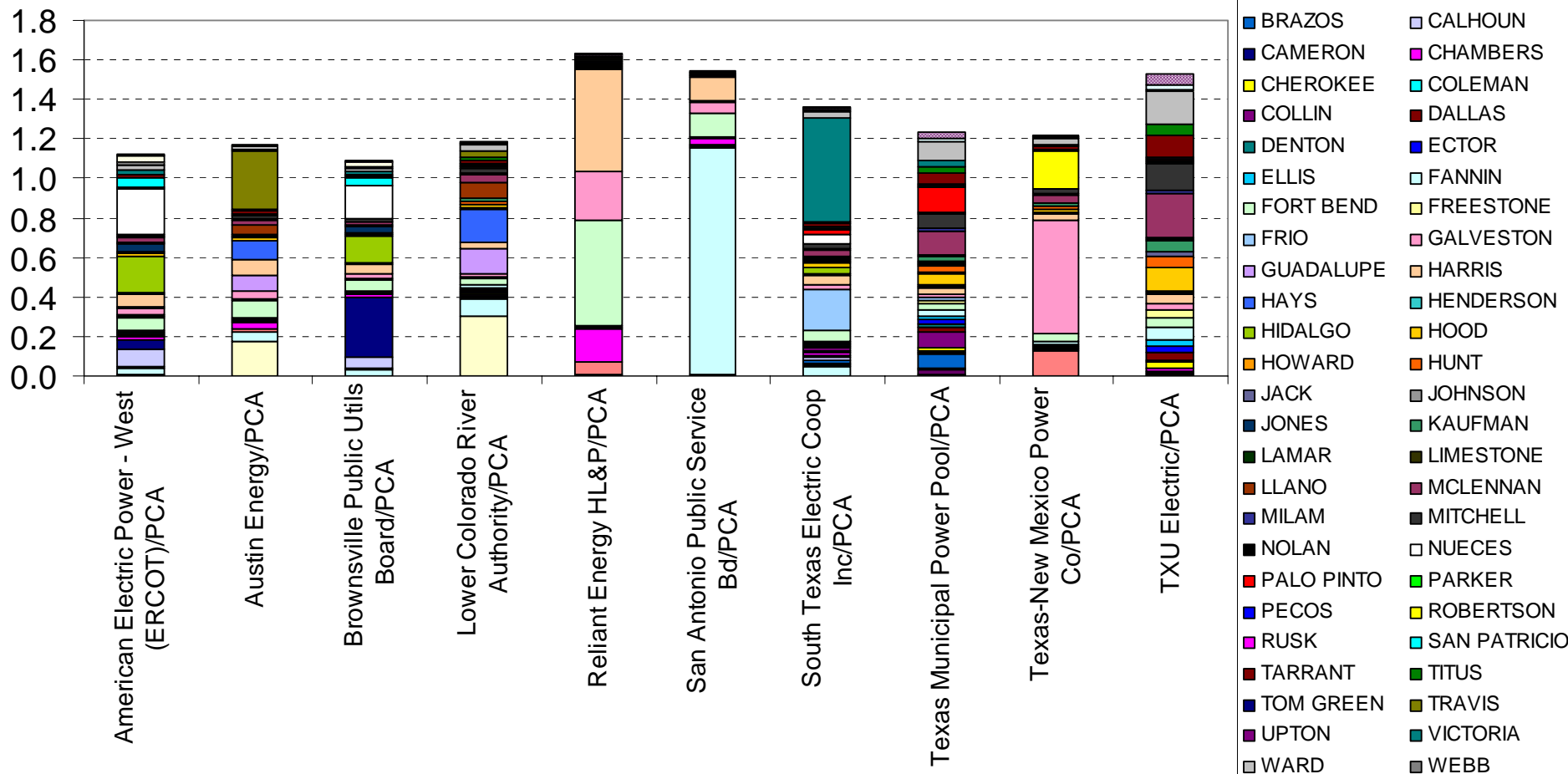
SB 5 Areas



ERCOT Estimated 1999 NOX Emission Reductions (#/MWh)



ERCOT Estimated 2007 NOx Emission Reductions (#/MWh)



4 Steps in Guidance

- **STEP 1 - Estimate the energy savings of EE or generation of RE**
- **STEP 2 – Estimate how the electric grid will respond to the EE/RE measure & estimate emission reductions**
- **STEP 3 – Determine AQ Impact of emission changes**
- **STEP 4 – Validate EE/RE activity & emission reductions**



Potential EE/RE measures

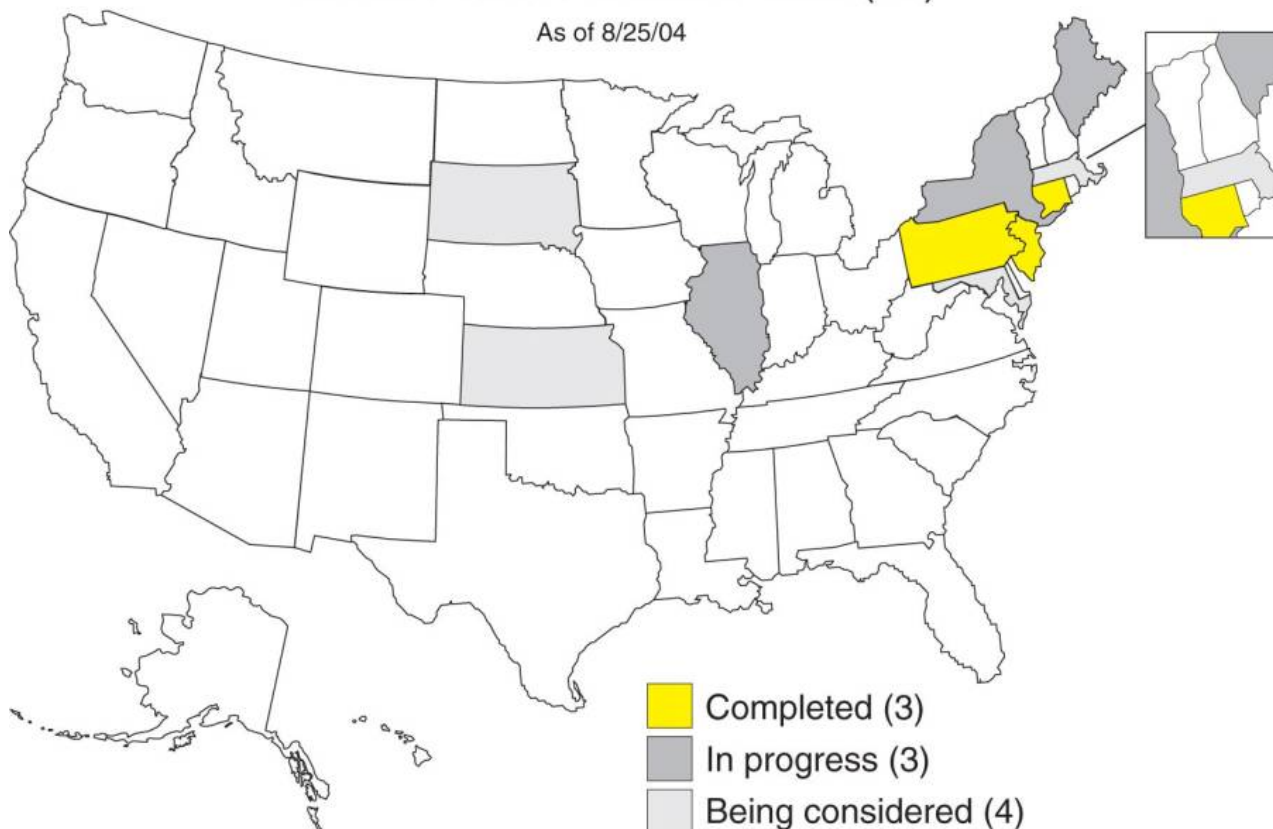
- **System Benefit Charge Programs**
- **Renewable Portfolio Standards**
- **Energy Codes**
- **Appliance Standards**
- **Gov. purchase**
 - ◆ **Green Power**
 - ◆ **EE equipment standards**
- **Utility run Demand Side Management Programs**
- **More ...**



Electricity Policies that Reduce Air Emissions

State Electricity Initiatives for Reducing GHG Emissions Green Power Purchase Goal (10)

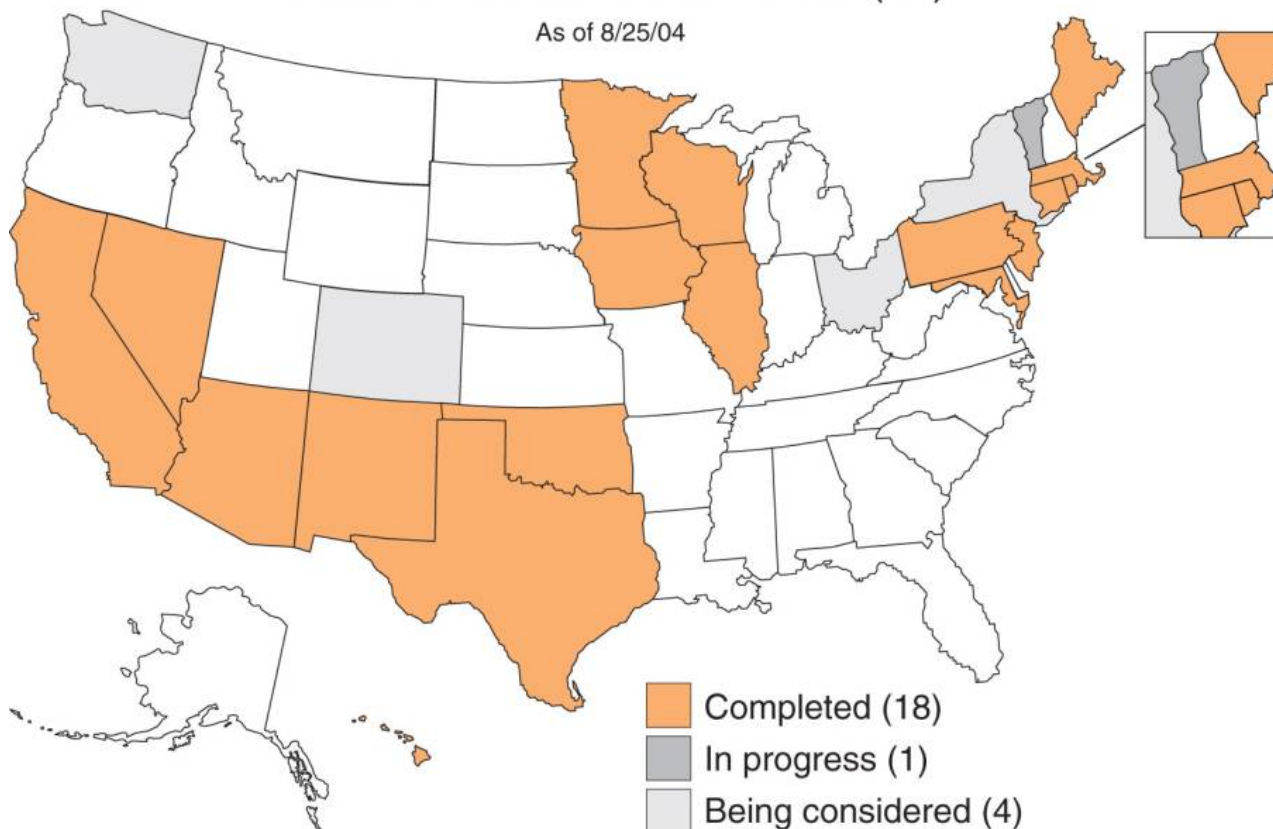
As of 8/25/04



Electricity Policies that Reduce Air Emissions

State Electricity Initiatives for Reducing GHG Emissions Renewable Portfolio Standard (23)

As of 8/25/04

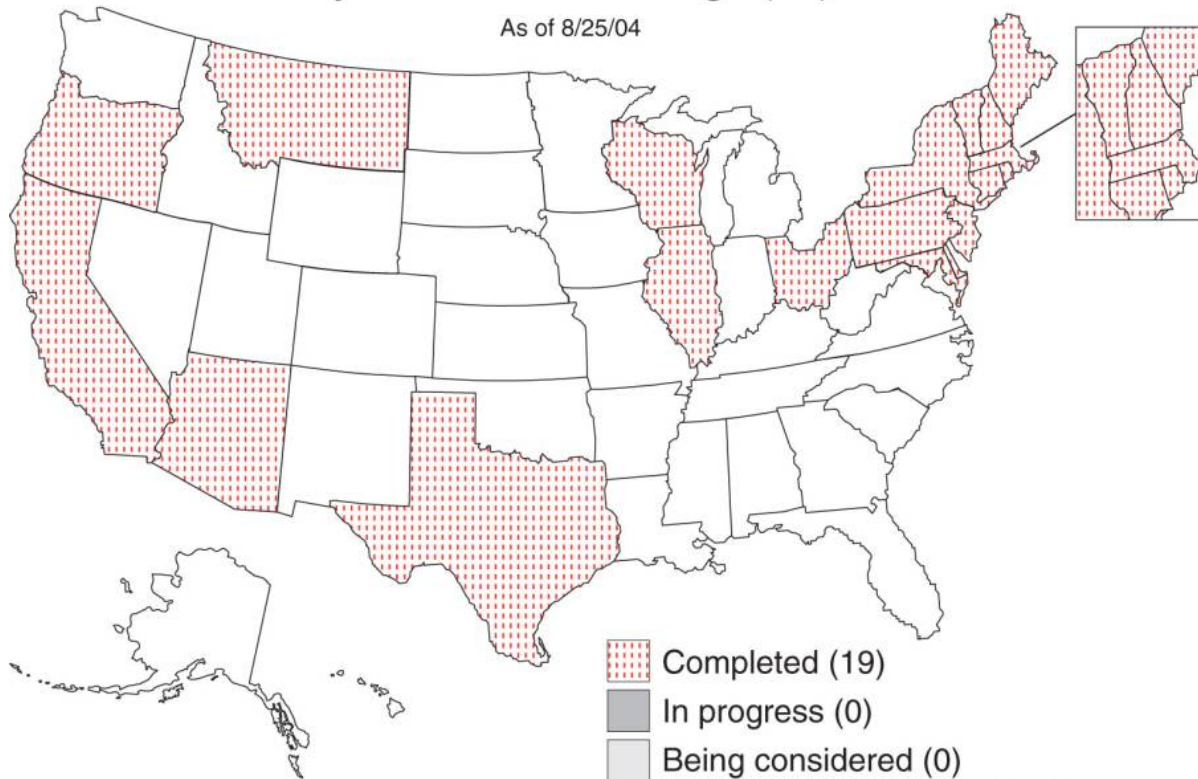


Electricity Policies that Reduce Air Emissions



State Electricity Initiatives for Reducing GHG Emissions
System Benefits Charge (19)*

As of 8/25/04

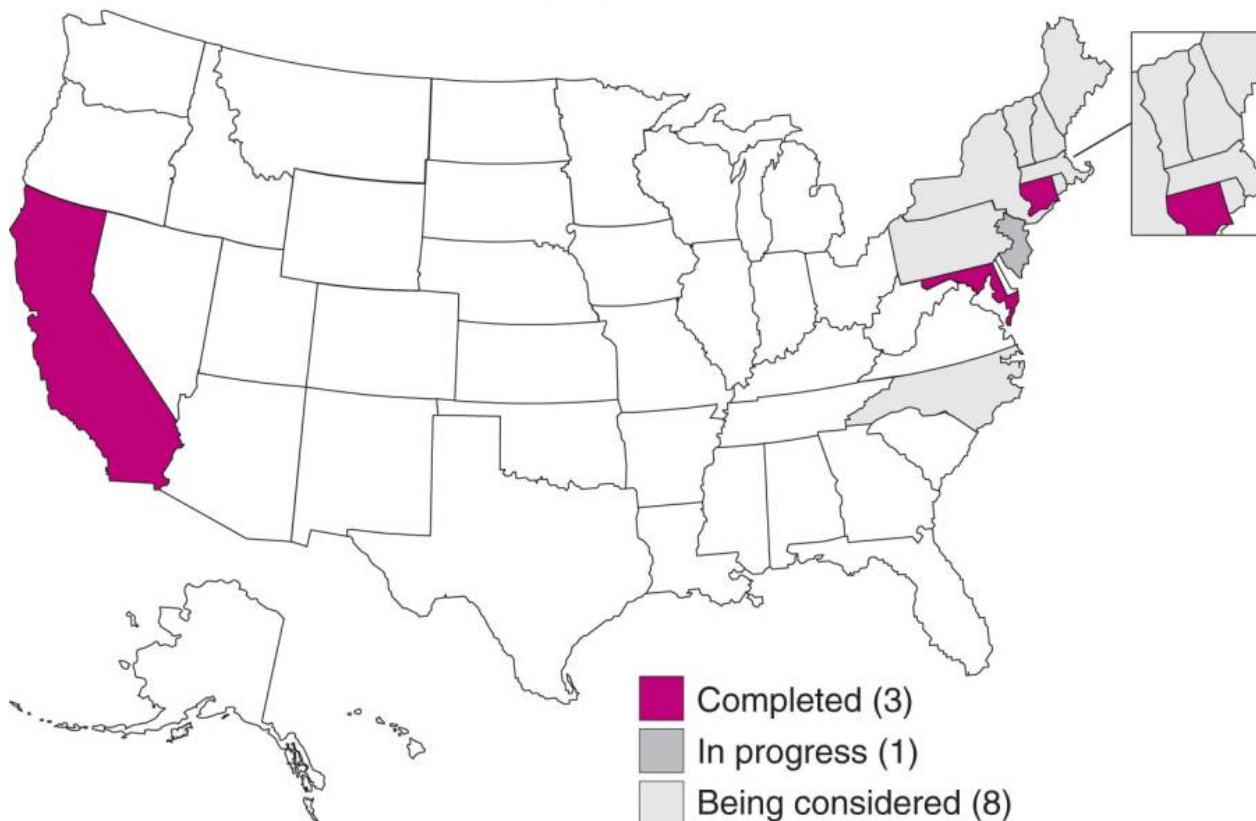


*This category includes states that place an SBC, a nonbypassable charge, on all customers regardless of which utility company they use. States that have public benefits funds whose money is provided differently (company payments not provided by consumers) are not included here.

Electricity Policies that Reduce Air Emissions

Appliance Efficiency Standards (12)

As of 8/25/04



Example: EE in Dallas-Fort Worth TX SIP

- **Measure: Senate Bills 5 and 7 EE Grant Programs and Utility EE Programs**
 - ◆ 912,000 MWh in 2007
- **Analysis: ERCOT wide analysis on non-baseload fossil-fuel fired units (mostly natural gas)**
- **How much credit: 0.7 tons NO_x per day in 12 county non-attainment area**



Example: RE in Washington, D.C. SIP



- **Measure:** Montgomery County MD Wind Power Purchase
 - ◆ 5% of electricity use = 28,000 MWh/year
- **Analysis:** Dispatch analysis of a new wind plant to meet power demand in PJM West (mostly coal-fired)
- **How much credit:** 0.05 tons NO_x per day
 - ◆ 50% of estimated emission reductions (of 5.72 #NO_x per MWh) sought for SIP credit
- **Other:** Cap and Trade Area, commitment to retire allowances

Upcoming Activities

- **Shreveport LA – Energy Efficiency Contract for municipal buildings**
- **DOE Pilot Projects**
 - ◆ **4 DOE regions providing tech. assist (not \$) to quantify emission benefits of EE/RE**
 - ☞ Southeast , Midwest , Central , Midatlantic
 - ◆ **DOE considering Grants to quantify emission impacts of “special projects” FY05**
- **EPA developing quantification clearinghouse and best practices report**
- **Other venues discussing quantification**
 - ◆ **e.g. State Technical Forums (hosted by EPA) – discussing Air – Energy topics**





Side-note for SEP toolkit

- **Supplemental Environmental Projects implemented through environmental enforcement settlement agreements**
- **Opportunity to fund energy efficiency and renewable energy projects through SEPs**
- **EPA issuing a Toolkit for States**



Conclusion

- **EPA Supports Policies that Integrate Environmental and Energy Objectives**
 - ◆ **Many Opportunities**
 - ◆ **Informational Resources**
 - ◆ **Policy Options**
 - ◆ **Technical Assistance**



Contacts

SIP Guidance

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