



**Luminant**

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# **Discussion of The Cross-State Air Pollution Rule**

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**September 13, 2011**

# Today's Discussion

- **Luminant Overview**
- **Texas Power Sector Emissions Context**
- **Profile of the Cross-State Air Pollution Rule and Requirements for Texas**

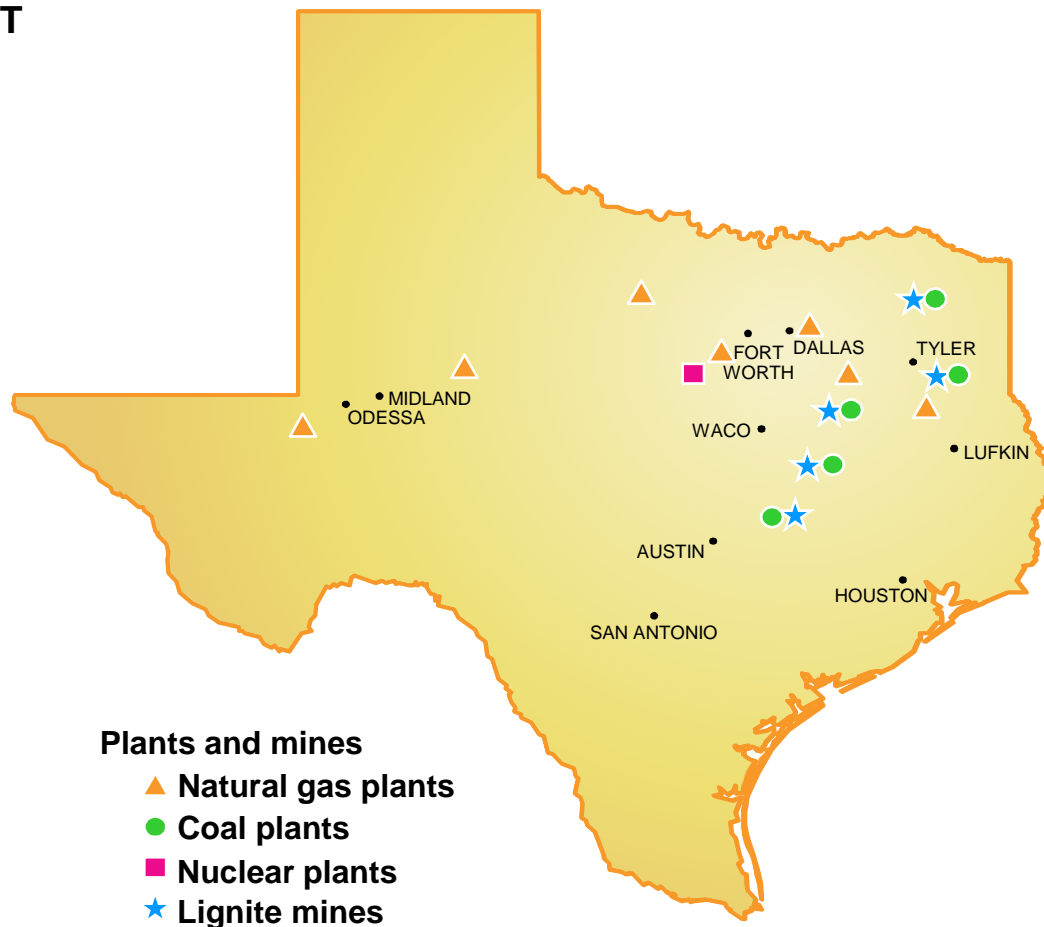
# Luminant Generation And Mining Facilities

## Generation capacity in ERCOT At 12/31/10; MW

Nuclear	2,300 MW
Natural gas <sup>1</sup>	5,110
Coal	<u>8,017</u>
<b>Total</b>	<b>15,427 MW</b>

## Lignite mine production 2010; million tons

Monticello	2.5 M tons
Big Brown	2.6
Three Oaks	5.4
Kosse	6.2
Martin Lake	<u>10.8</u>
<b>Total</b>	<b>27.5 M tons</b>



*Luminant is the largest generator in Texas and a wholly owned subsidiary of Energy Future Holdings*

<sup>1</sup> Includes four mothballed units (1,655 MW) not currently available for dispatch and eight units (1,268 MW) currently operated for unaffiliated parties.

# Luminant Coal/Lignite Plant And Mine Employees

Plant/Mine Site	FTEs <sup>1</sup>
Big Brown Plant	119
Big Brown Mine	213
Martin Lake Plant	254
Martin Lake Mine	683
Monticello Plant	192
Monticello Mine	281
Sadow Plant	135
Three Oaks Mine	255
Oak Grove Plant	141
Kosse Mine	306
<b>Total coal/lignite plant employees</b>	<b>841</b>
<b>Total mine employees</b>	<b>1,738</b>
<b>Luminant – total coal/lignite and mine employees</b>	<b>2,579</b>

<sup>1</sup> As of April 30, 2011

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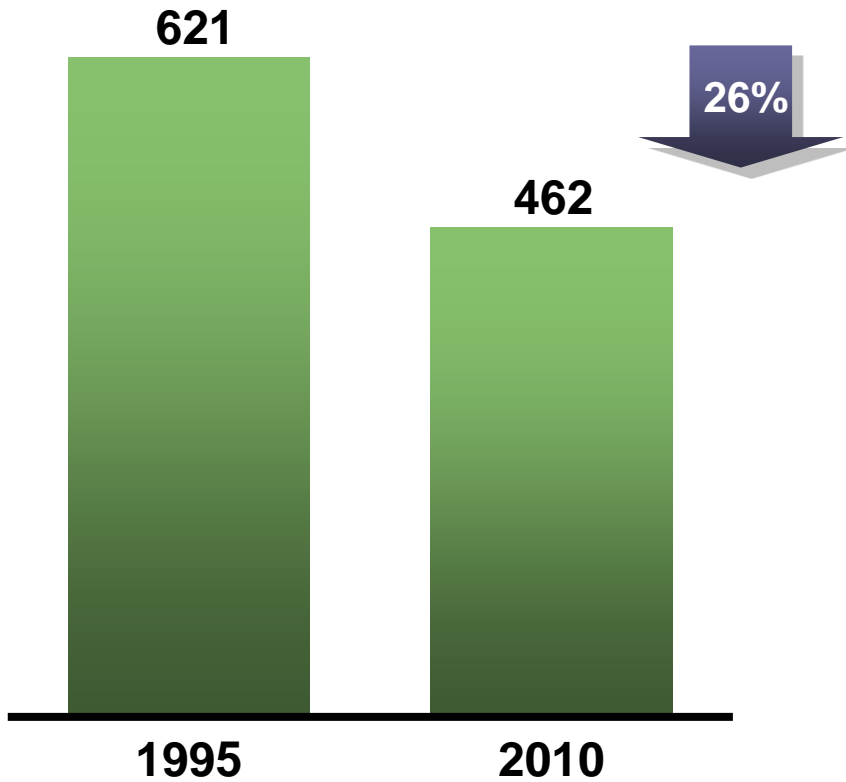
- **Luminant Overview**

- **Texas Power Sector Emissions Context**

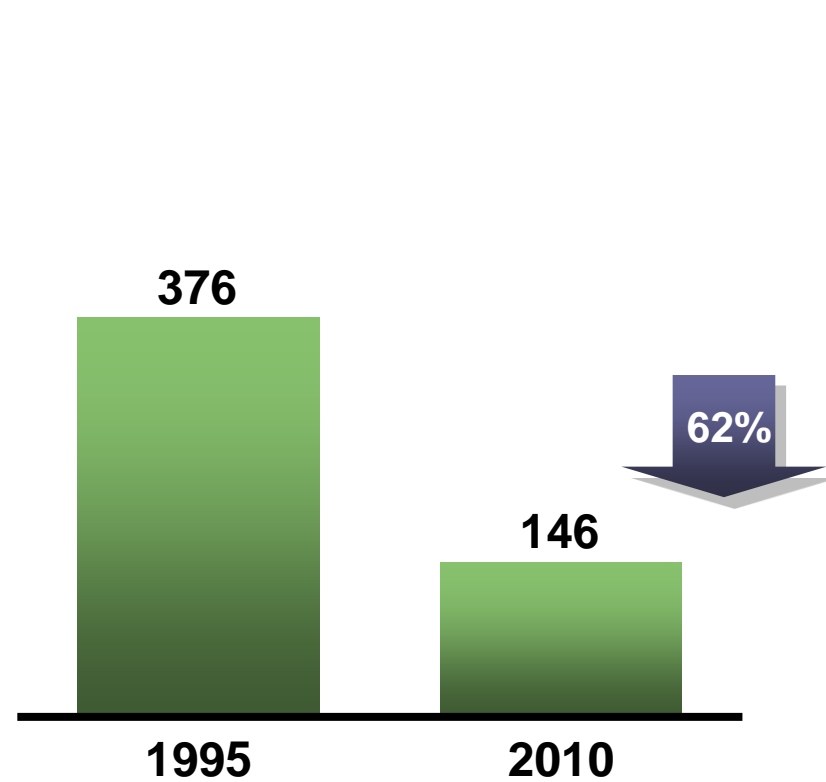
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# Texas Power Sector SO<sub>2</sub> And NO<sub>x</sub> Emissions Since 1995

Texas SO<sub>2</sub> emissions  
1995-2010; Thousand tons

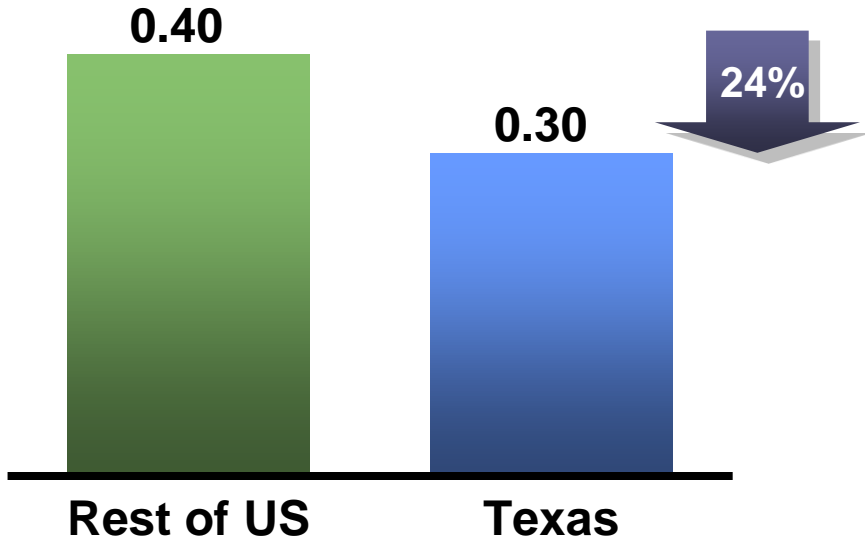


Texas NO<sub>x</sub> emissions  
1995-2010; Thousand tons

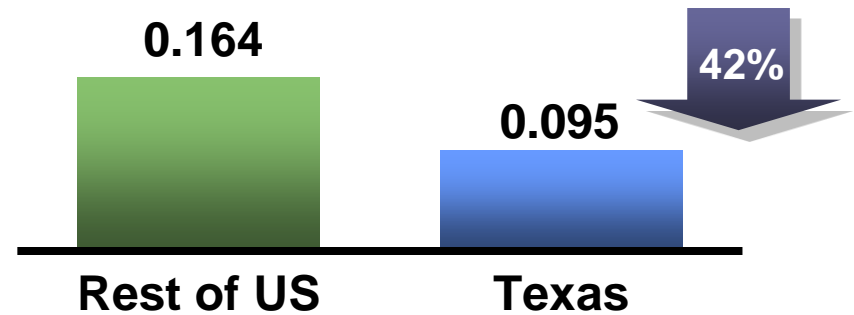


# Texas' Power Sector Emissions Rates Compared With US Averages

**SO<sub>2</sub> emissions  
2010; lbs/MMBtu**

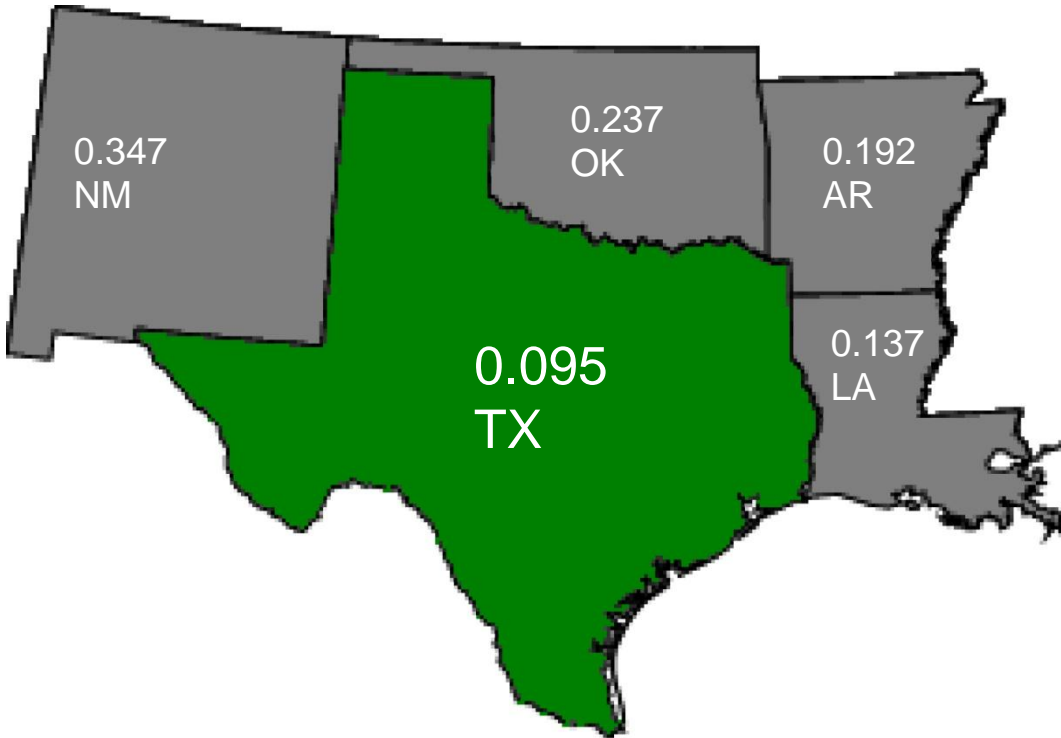


**NO<sub>x</sub> emissions  
2010; lbs/MMBtu**



# Regional NO<sub>x</sub> Emissions

## NO<sub>x</sub> Emission Rate 2010; lbs/MMBtu

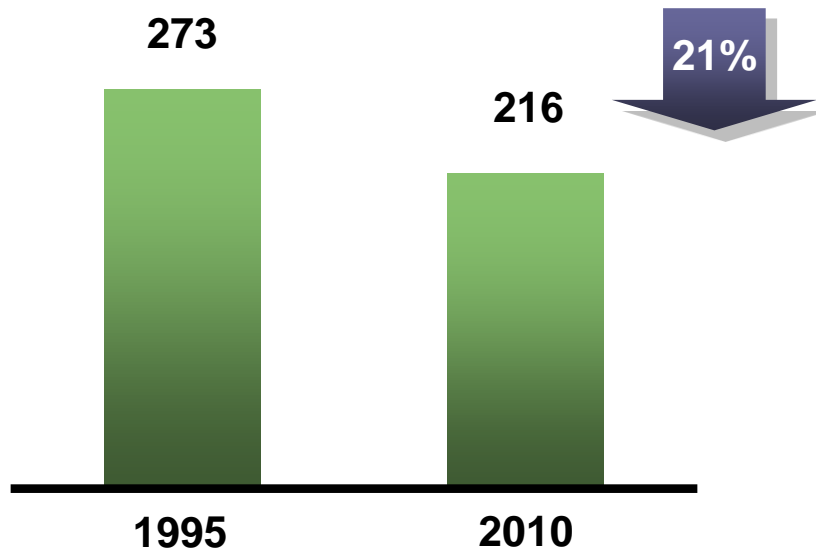


Area	2010 NO <sub>x</sub> Emission Rate Averages (lbs/MMBtu)
<b>National*</b>	<b>0.164</b>
Texas	0.095

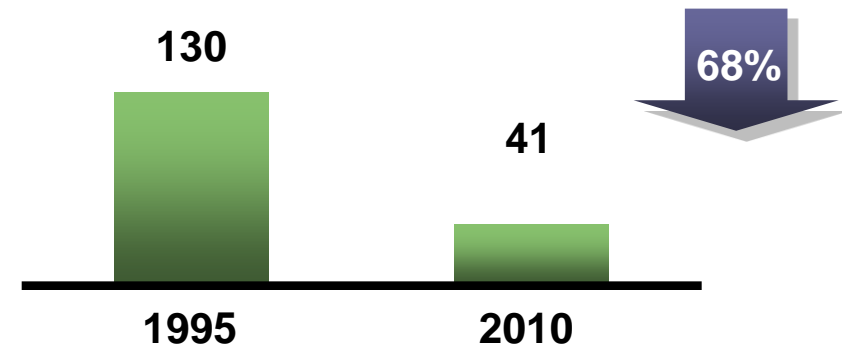


# Luminant SO<sub>2</sub> And NO<sub>x</sub> Emissions Since 1995

**Luminant SO<sub>2</sub> Emissions  
1995-2010; Thousand tons**



**Luminant NO<sub>x</sub> emissions  
1995-2010; Thousand tons**

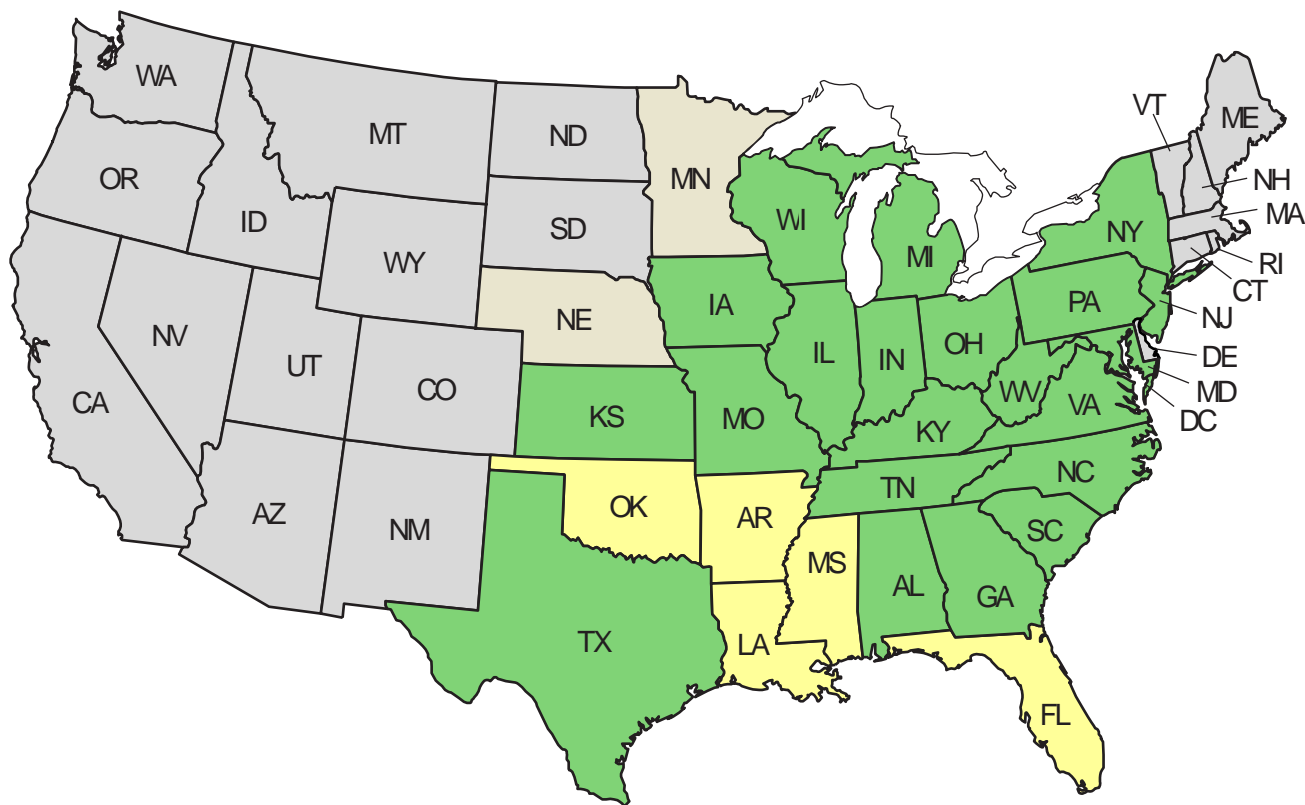


*Luminant has also reduced total SO<sub>2</sub> emissions by 21% and NO<sub>x</sub> emissions by 9% since 2005 while increasing generation by 16%*

# Today's Discussion





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# States Covered By CSAPR



Cross-State Air Pollution Rule includes separate requirements for:

- Annual SO<sub>2</sub> reductions
- Annual NO<sub>x</sub> reductions
- Ozone-season NO<sub>x</sub> reductions

-  States controlled for both fine particles (annual SO<sub>2</sub> and NO<sub>x</sub>) and ozone (ozone season NO<sub>x</sub>) (21 states)
-  States controlled for both fine particles only (annual SO<sub>2</sub> and NO<sub>x</sub>) (2 states)
-  States controlled for ozone only (ozone season NO<sub>x</sub>) (5 states)
-  States not controlled by the Cross-State Air Pollution Rule

\*This map includes states covered in the supplemental notice of proposed rulemaking.

# Requirements Faced By Texas

## Proposed CATR, 7/2010

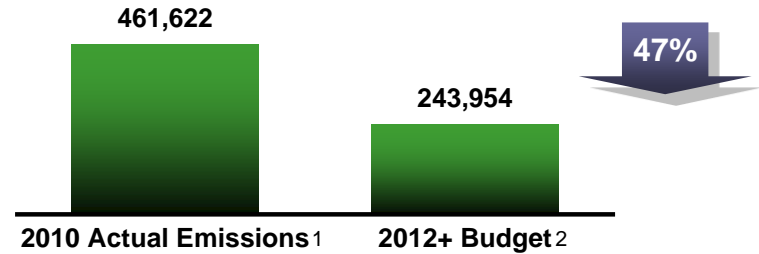
### Annual SO<sub>2</sub>

- No requirements or budget
- Texas at 327,000 tons – no significant downwind impact



## CSAPR 2012 Remedy Case, 7/2011

### Annual SO<sub>2</sub> Program

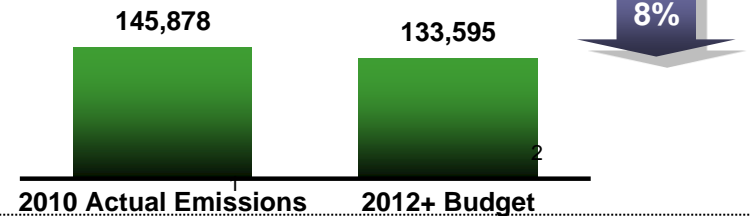


### Annual NO<sub>x</sub>

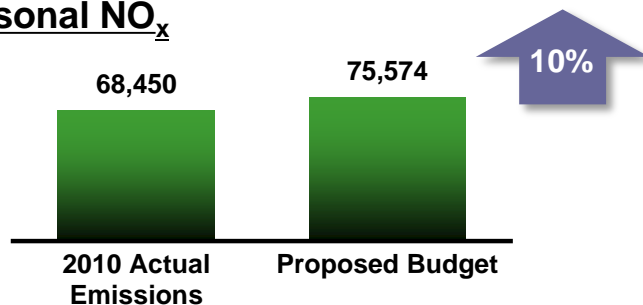
- No requirements or budget
- Texas at 160,000 tons – no significant downwind impact



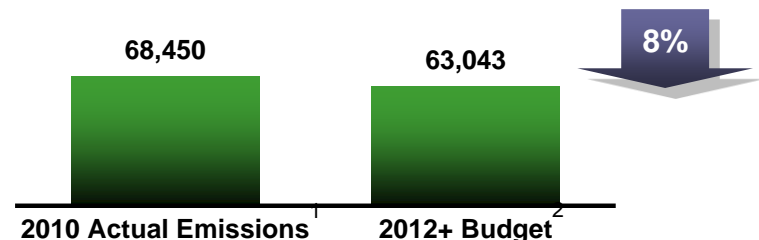
### Annual NO<sub>x</sub>



### Seasonal NO<sub>x</sub>



### Seasonal NO<sub>x</sub>



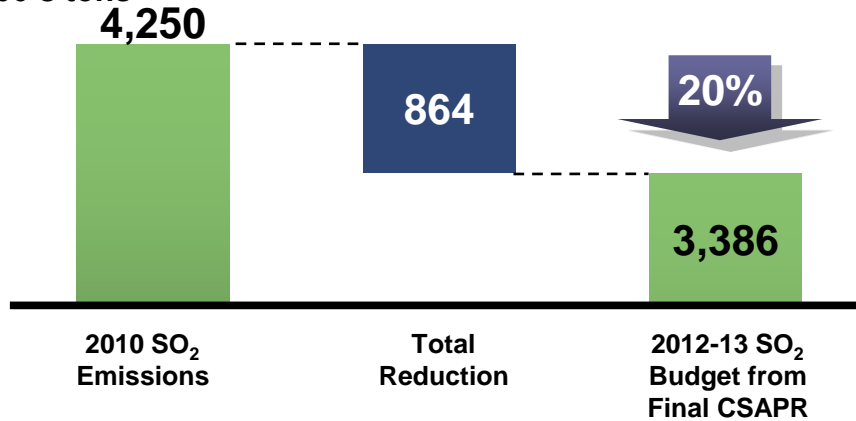
<sup>1</sup> CEMS – Actual EMIT

<sup>2</sup> CSAPR – Limits (State Budgets); does not include possible set-asides

# Share Of Total US SO<sub>2</sub> Emissions Reductions In 2012-13

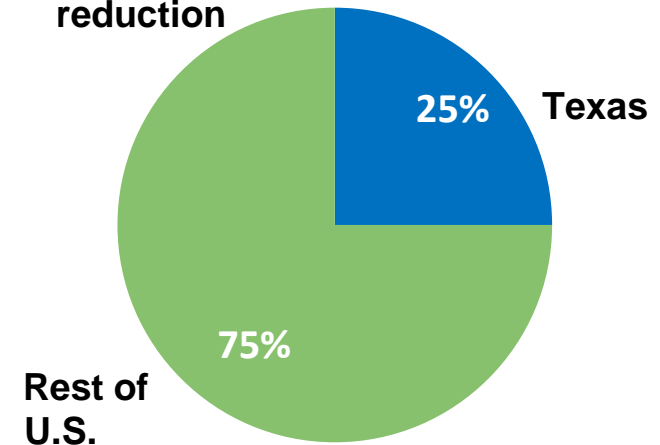
## SO<sub>2</sub> Reductions – all Group 1 and Group 2 states

000's tons<sup>1,2,3</sup>



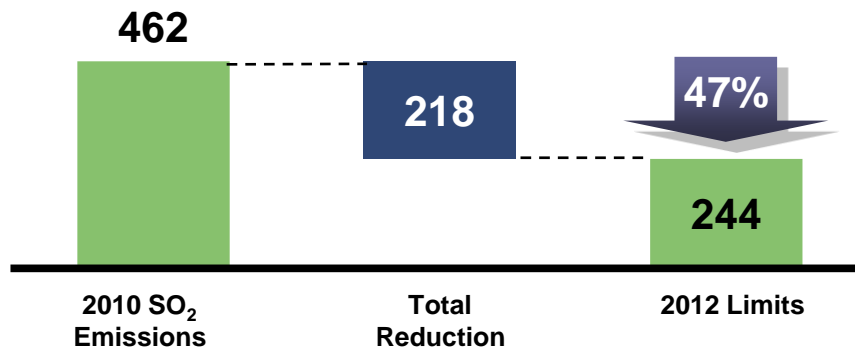
## Share of 2012-13 Reductions Compared With 2010 Emissions

100% = ~864,000 ton reduction



## SO<sub>2</sub> Reductions – Texas<sup>1,2,3</sup>

000's tons



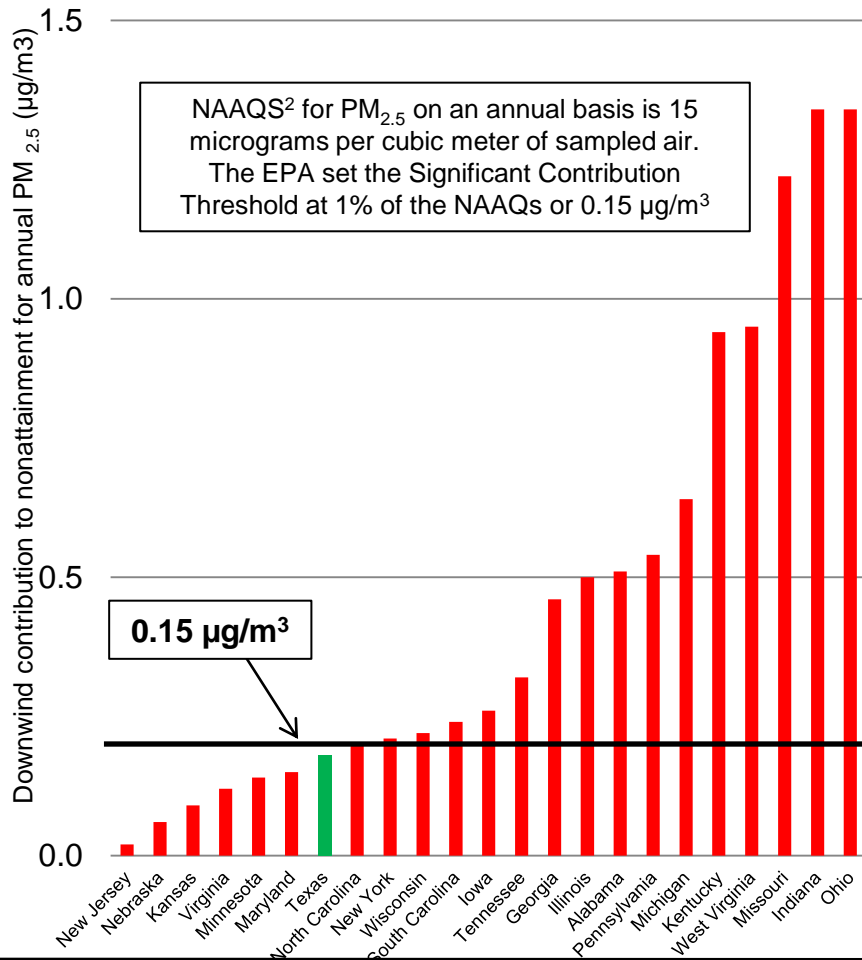
<sup>1</sup> State SO<sub>2</sub> Budgets for 2012-2013 from Prepublication CSAPR version July 6, 2011, pp 1095 & 1233

<sup>2</sup> State SO<sub>2</sub> 2010 Emissions – EPA Clean Air Markets Division, Data and Maps, Acid Rain Program Data

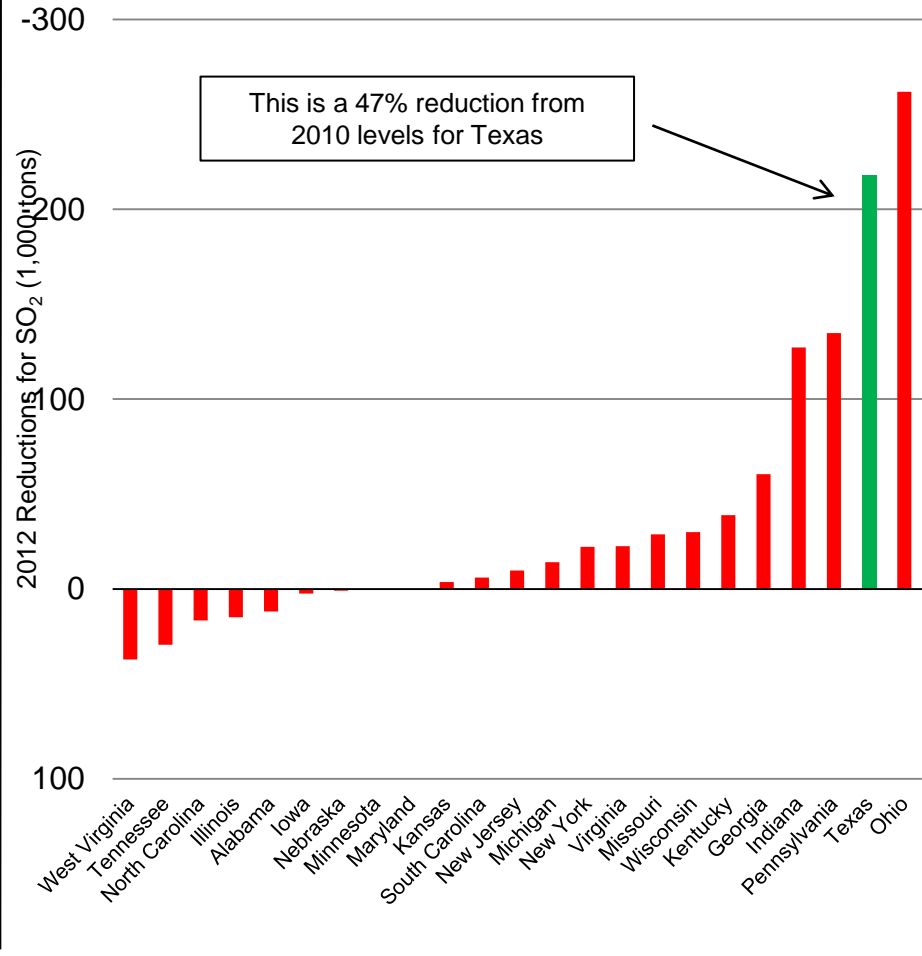
<sup>3</sup> Page 1233 Prepublication CSAPR version July 6, 2011

# State-By-State Contributions And Mandated Reductions

## SO<sub>2</sub> Group 1 & 2 State Contributions To Downwind Nonattainment For Annual PM<sub>2.5</sub> (µg/m<sup>3</sup>)<sup>1</sup>



## Required 2012 SO<sub>2</sub> Reductions for Group 1 & 2 States<sup>3</sup>



<sup>1</sup> Source: Table V.D-1, page 148 of 1,323, Final CSAPR

<sup>2</sup> NAAQS refers to the National Ambient Air Quality Standard

<sup>3</sup> Source: Reductions are the differences between 2012 state budgets from CSAPR prepublication version preamble, pages 234 and 235, and the actual 2010 emissions from EPA's Clean Air Markets Division, Data & Maps, Quick Reports

# Concerns Expressed By Texas Leaders

## 33 of 34 Texas Congressional Delegation members have expressed concerns

“If fact, EPA has never included a state in a final rule for one of its major interstate transport programs without first providing a budget for that state in the proposed rule. As a consequence, EPA provided Texas and Texas market participants with absolutely no notice that EPA was developing a budget for Texas, much less notice of its terms ... affected parties in Texas had no basis or ability to comment on the Texas budgets...” *Texas Members of U.S. House of Representatives, Letter to OMB, 8/1/11*

“The primary options for meeting the EPA’s unreasonable mandates by 2012 will be ceasing operations at several affected power plant units for several months each year or reducing operations throughout the year ... That will mean less power provided to the Texas electricity grid and the risk of power shortages. It also means the potential shutdown of Texas lignite mines, serious threats to up to a thousand or more Texas jobs, and increased power prices in the state.” *Sens. Kay Bailey Hutchison and John Cornyn, Letter to OMB 8/3/11*

“The implementation timeline provides ERCOT an extremely truncated period in which to assess the reliability impacts of the rule, and no realistic opportunity to take steps that could even partially mitigate the substantial losses of available operating capacity described in the scenarios examined in this report. In short, the CSAPR implementation date does not provide ERCOT and its resource owners a meaningful window for taking steps to avoid the loss of thousands of megawatts of capacity, and the attendant risks of outages for Texas power users.” *ERCOT, Impacts of CSAPR on the ERCOT System, 9/1/11*

“This is expected to have far-reaching consequences on energy consumers, particularly elderly and low-income populations whose health and welfare are dependent on reliable energy ... Additionally, these regulations have indirect effects of higher costs associated with the cost of manufacturing goods and the potential for lost jobs as the American economy struggles to recover and compete in the global market.” *TCEQ and PUC, Joint Statement, 7/7/11*

# Leaders and Organizations that Have Expressed Concern about CSAPR's Requirements for Texas (*partial listing*)

## National Leaders and Organizations

- U.S. Sen. Kay Bailey Hutchison (R)
- U.S. Sen. John Cornyn (R)
- Cong. Joe Barton (R)
- Cong. Eddie Bernice Johnson (D)
- Cong. Kevin Brady (R)
- Cong. Michael Burgess (R)
- Cong. Francisco Canseco (R)
- Cong. John Carter (R)
- Cong. Michael Conaway (R)
- Cong. Henry Cuellar (D)
- Cong. John Culberson (R)
- Cong. Blake Farenthold (R)
- Cong. Bill Flores (R)
- Cong. Louie Gohmert (R)
- Cong. Charlie Gonzalez (D)
- Cong. Kay Granger (R)
- Cong. Al Green (D)
- Cong. Gene Green (D)
- Cong. Ralph Hall (R)
- Cong. Jeb Hensarling (R)
- Cong. Rubén Hinojosa (D)
- Cong. Sheila Jackson Lee (D)
- Cong. Sam Johnson (R)
- Cong. Kenny Marchant (R)
- Cong. Michael McCaul (R)
- Cong. Randy Neugebauer (R)
- Cong. Pete Olson (R)
- Cong. Ron Paul (R)
- Cong. Ted Poe (R)
- Cong. Silvestre Reyes (D)
- Cong. Pete Sessions (R)
- Cong. Lamar Smith (R)
- Cong. Mac Thornberry (R)
- Edison Electric Institute (EEI)
- National Association of Manufacturers
- United States Black Chamber

## State-level Leaders and Organizations

- Gov. Rick Perry
- State Sen. Troy Fraser (R)
- State Sen. Eddie Lucio, Jr. (D)
- State Sen. Robert Nichols (R)
- State Rep. Byron Cook (R)
- State Rep. Jessica Farrar (D)
- State Rep. Phil King (R)
- State Rep. Trey Martinez Fischer (D)
- State Rep. Wayne Smith (R)
- Public Utility Commission of Texas (PUCT)
- Electric Reliability Council of Texas (ERCOT)
- Railroad Commission of Texas (RCT)
- Texas Commission on Environmental Quality (TCEQ)
- IBEW – 7th District
- Texas AFL-CIO
- Texas Association of Business
- Texas Association of Manufacturers
- Texas Chemical Council
- Texas members of Associated Equipment Distributors
- Texas Association of African-American Chambers of Commerce
- Association of Electric Companies of Texas (AECT)
- Texas Association of Mexican American Chambers of Commerce (TAMACC)
- Balanced Energy for Texas
- United Ways of Texas President Karen Johnson
- Texas Public Policy Foundation and Former TCEQ Chair Kathleen Hartnett White
- Texas Municipal Power Association (TMPA)
- Texas Institute President Mark Armentrout
- Economist Ray Perryman

## Local Leaders and Organizations

- Cedar Hill Mayor Rob Franke
- DeSoto Mayor Carl Sherman
- Duncanville Mayor David Green
- Fairfield Mayor Roy Hill
- Irving Mayor Beth Van Duyne
- Lancaster Mayor Marcus Knight
- Midlothian Mayor Boyce Whatley
- Fairfield Hospital District Board President George Robinson
- Fairfield Industrial Development Foundation President David Zuber
- Mount Pleasant Industrial Foundation Executive Director Charles Smith
- Mount Pleasant ISD Superintendent Lynn Dehart
- Northeast Texas Community College (Titus County) President Dr. Brad Johnson
- North Texas Commission
- Dallas Regional Chamber of Commerce
- Dallas Black Chamber of Commerce
- Cedar Hill Chamber of Commerce
- Corpus Christi Hispanic Chamber of Commerce
- Fort Worth Chamber of Commerce
- Fort Worth Hispanic Chamber of Commerce
- Greater Dallas Hispanic Chamber of Commerce
- Greater Irving-Las Colinas Chamber of Commerce
- Greater Houston Partnership
- Houston Hispanic Chamber of Commerce
- Irving Hispanic Chamber of Commerce
- Rio Grande Valley Hispanic Chamber of Commerce
- Rio Grande Valley Partnership Chamber of Commerce
- Shelby County Center Chamber of Commerce
- Texas Business Alliance – Houston
- Texans For Texas Energy (Fairfield)
- Christian Community Action - Lewisville
- Lancaster Outreach Center



# Requirements Of CSAPR For Luminant

- **Beginning January 1, 2012 Luminant will be required to achieve the following reductions relative to 2010 levels:**
  - **64% reduction in SO<sub>2</sub>**
  - **22% reduction in annual No<sub>x</sub>**
  - **19% reduction in seasonal No<sub>x</sub>**
- **Achieving these CSAPR reductions will require:**
  - **Idling Monticello Units 1 & 2 (approx 1,200 MW)**
  - **Switching the fuel at Monticello Unit 3 and Big Brown Units 1 & 2 from a blend of Texas lignite and Powder River Basin coal to 100% Powder River Basin coal**
  - **Ceasing lignite mining at Big Brown/Turlington, Winfield and Thermo mines**
  - **Eliminating approximately 500 jobs in connection with these actions**
  - **Investing approximately \$280mm by the end of 2012 to upgrade existing environmental equipment at Monticello Unit 3, Martin Lake Units 1, 2 and 3 and Sandow Unit 4**
- **Luminant estimates expenditures of more than \$1.5 billion before the end of the decade for environmental control equipment that will be required to comply with environmental regulations including CSAPR**

# Summary Of Concerns About CSAPR

- **Fundamental process flaws**
  - **Texas was not included in the proposed CATR (for annual SO<sub>2</sub> and annual NO<sub>x</sub>) – thus, no meaningful opportunity for notice and comment on annual reduction requirements**
  - **Never before has a state been included in a major EPA rule when no budget (emission reduction mandate) for the state was included for comment in the draft rule**
- **Severe, disproportionate, and unwarranted impacts on Texas**
- **Six month compliance timeline, combined with steep reduction requirements, puts Texas jobs, electricity prices, and electric grid reliability at risk**