

REVISIONS TO THE STATE IMPLEMENTATION PLAN (SIP)
FOR ELECTRIC GENERATING UNITS STATEWIDE TO REDUCE
FINE PARTICULATE MATTER OF 2.5 MICRONS AND LESS (PM_{2.5})
TRANSPORT EMISSIONS

CLEAN AIR INTERSTATE RULE
(CAIR)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. BOX 13087
AUSTIN, TEXAS 78711-3087

DOCKET No. 2008-0335-SIP

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Chapter 101 - 2007-053-101-EN (CAIR)

Proposal

September 9, 2009

SECTION VI. CONTROL STRATEGY

- A. Introduction (No change.)
- B. Ozone (No change.)
- C. Particulate Matter (No change.)
- D. Carbon Monoxide (No change.)
- E. Lead (No change.)
- F. Oxides of Nitrogen (No change.)
- G. Sulfur Dioxide (No change.)
- H. Conformity with the National Ambient Air Quality Standards (No change.)
- I. Site Specific (No change.)
- J. Mobile Source Strategies (No change.)
- K. Clean Air Interstate Rule (Revised.)
- L. Transport (No change.)
- M. Regional Haze (No change.)

EXECUTIVE SUMMARY

This Clean Air Interstate Rule (CAIR) State Implementation Plan (SIP) revision is proposed to incorporate five federal rule revisions that the United State Environmental Protection Agency (EPA) has promulgated since the Texas Commission on Environmental Quality (TCEQ) adopted the initial CAIR SIP revision on July 12, 2006. This proposed CAIR SIP revision also addresses proposed revisions to 30 Texas Administrative Code (TAC) Chapter 101 resulting from legislation during the 80th Texas Legislature as prescribed by Senate Bill (SB) 1672¹. Additional information regarding each of these changes can be found in Chapter 1: General. Non-substantive administrative changes are also addressed in this proposal.

In 2007, the 80th Texas Legislature passed SB 1672, directing the TCEQ to incorporate revisions to the federal CAIR that the EPA finalized since the initial adoption of the CAIR SIP revision by the commission on July 12, 2006, as well as revisions to the nitrogen oxides (NO_x) allocation methodology. SB 1672 contains provisions relating to correcting the number of minimum periods specified for NO_x allocation adjustments that were directed by House Bill 2481². HB 2481 revised the baseline of existing units by reviewing heat-input data every five years by looking back at the three highest years of the previous seven years. However, the seven-year period did not provide adequate time to accommodate the EPA's requirement of providing allocations to them approximately four years in advance of each control period. Therefore, SB 1672 changed the number of control periods from seven to nine and shifted the allocation update from 2016 to 2018.

Because of this legislative change in SB 1672, new³ electric generating units (EGU) in the years 2016 and 2017 with five or more consecutive years of operation will obtain allowances from the existing⁴ EGU allocation pool. This revision is consistent with how new units are handled for the 2015 control period under the federal CAIR program. However, beginning in 2018 each existing unit's baseline heat input will be revised based on the average of the highest three years from control periods one through five of the preceding nine control periods. In accordance with SB 1672, this baseline readjustment is required every five years. During this five-year baseline readjustment, new units with five or more years of operation will be reclassified from new units to existing units. Therefore, the number of NO_x allowances will not fluctuate and will remain constant for five years.

SB 1672 also omits the reference date of the federal CAIR program that was specified in HB 2481 from the 79th Texas legislative session. This change will enable the commission to make subsequent changes as dictated by federal rule change for CAIR.

This proposed CAIR SIP revision contains:

- Federal changes to the CAIR program, as specified below (specifics regarding these changes can be found in Chapter 1 – General);
- Methodology for allocation of CAIR NO_x allowances as specified under SB 1672, 80th Texas

¹ Act of May 10, 2007, 80th Leg. R.S., SB 1672, § 2 (codified at Tex. Health & Safety Code §382.0173, concerning Adoption of Rules Regarding Certain SIP Requirements and Standards of Performance for Certain Sources). See Appendix A.

² Act of June 18, 2005, 79th Leg., R.S., HB. 2481, § 2 (codified at Tex. Health & Safety Code §382.0173, concerning Adoption of Rules Regarding Certain SIP Requirements and Standards of Performance for Certain Sources). See Appendix B.

³ New EGU - Units commencing operation on or after January 1, 2001.

⁴ Existing EGU - Units commencing operation before January 1, 2001.

- Legislature, 2007, Regular Session; and
• Non-substantive administrative changes.

Background

On May 12, 2005, CAIR was published in the *Federal Register*. The rule required 28 eastern states and the District of Columbia to reduce sulfur dioxide (SO₂) and/or NO_x emissions, which are precursors of PM_{2.5} and ozone. Twenty-five states⁵ and the District of Columbia must reduce annual SO₂ and NO_x emissions to attain the particulate matter of 2.5 microns and less (PM_{2.5}) National Ambient Air Quality Standards (NAAQS). Under CAIR, 25 states⁶ and the District of Columbia, not including Texas, must reduce NO_x emissions for the purposes of attainment of the eight-hour ozone NAAQS. States were given the choice to use one of two compliance options from the EPA: meet the state's emission budget by requiring EGUs to participate in an EPA-administered interstate cap and trade program; or meet an individual state emissions budget through measures of the state's choosing. The 79th Texas Legislature in 2005 passed House Bill (HB) 2481 in its Regular Session requiring the TCEQ to adopt the EPA-administered interstate cap and trade program by reference and stipulating specifications for NO_x allowance allocations and set-asides for NO_x emissions, as well as only requiring reductions associated with CAIR from new and existing EGUs.

The EPA modeled 37 states, including Texas, for PM_{2.5} contribution using the Community Multiscale Air Quality Model (CMAQ). State-by-state zero-out modeling was then used to quantify the state's contribution for SO₂ and NO_x. A criterion of 0.2 micrograms per cubic meter (µg/m³) was used for determining whether SO₂ and NO_x emissions in a state made a significant contribution to PM_{2.5} nonattainment in another state. The EPA's modeling demonstrated that Texas provided a contribution of 0.29 µg/m³ with two downwind "linkages." The two downwind counties identified are Madison and Saint Clair in Illinois. For ozone contribution only, 31 states in the eastern United States were modeled. Since Texas was not included in the modeling exercise, the EPA did not determine that Texas contributed to ozone nonattainment in another state.

The control measures identified in the CAIR program to regulate EGUs through an interstate cap and trade program were approved by the EPA as an option under the program. Table ES-1: *CAIR NO_x Control Measures Reductions Within Texas* and Table ES-2: *CAIR SO₂ Control Measures Reductions Within Texas* provides an overview of projected emission reductions provided by the EPA⁷ for SO₂ and NO_x, respectively.

⁵ Alabama, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, New York, New Jersey, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia, and Wisconsin.

⁶ Alabama, Arkansas, Connecticut, Delaware, Florida, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia, and Wisconsin.

⁷ Web site information on projected NO_x and SO₂ emission reductions can be found at <http://www.epa.gov/CAIR/tx.html>

Table ES-1: CAIR NO_x Control Measures Reductions Within Texas

NO_x Emissions (thousand tons per year)	2003	2009	2015
Texas NO_x Emissions without CAIR	211	186	179
Texas NO_x Emissions with CAIR	N/A	167	159

(The EPA projects that by 2015, CAIR will help Texas sources reduce NO_x by 52,000 tons per year or 25 percent.)

Table ES-2: CAIR SO₂ Control Measures Reductions Within Texas

SO₂ Emissions (thousand tons per year)	2003	2010	2015
Texas SO₂ Emissions without CAIR	578	417	418
Texas SO₂ Emissions with CAIR	N/A	398	352

(The EPA projects that by 2015 CAIR will help Texas sources reduce SO₂ by 226,000 tons per year or 39 percent.)

CAIR consists of two phases for NO_x and SO₂ reductions with declining allocations. For Phase I, from 2009 through 2014, the Texas NO_x budget is 181,014 tons per year (tpy). For Phase II, from 2015 and thereafter, the Texas NO_x budget is 150,845 tpy. Allocations for NO_x and SO₂ are reflective of the budgets given in the EPA's May 12, 2005, CAIR rule (40 CFR Part 51.123(e)(2) - Annual NO_x Budgets; and 41 CFR Part 51.124 (e)(2) – Annual SO₂ Budgets). EGUs will have the option to hold, transfer, or sell allowances, but at the end of each year's reconciliation period, each EGU must have enough allowances in its compliance account to cover emissions during the control period.

SO₂ budgets are based on the existing Title IV program under the Federal Clean Air Act (FCAA). Title IV is also known as the Acid Rain program. Allowance allocations with annual state budgets for Phase I (2010 through 2014) are based on a 50 percent reduction of SO₂ emissions from all EGUs in the affected state. The initial Texas budget for Phase I is 320,946 tpy. In Phase II (2015 and beyond), emissions are based on a 65 percent reduction of Title IV allowances allocated to EGUs in the affected state for SO₂. The Texas budget for Phase II is 224,662 tpy. EGUs that are regulated by CAIR and were not regulated by the Acid Rain program will be required to obtain the needed SO₂ allowances to comply with CAIR obligations through the trading system.

The EPA's model emission trading rule, 40 CFR Part 96, is a market-based system designed to reduce the costs of complying with the new NO_x and SO₂ emission limits. The trading system places a collective cap on both NO_x and SO₂ emissions from EGUs and provides for the trading of allowances similar to Title IV of the FCAA's SO₂ Allowance Trading program. Texas EGUs will be allowed to trade NO_x

allowances only with other CAIR states⁸ that are participating in the annual NO_x trading program. SO₂

⁸ Alabama, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia, and

allowances can still be traded within the realm of the Title IV/Acid Rain program as defined under 40 CFR Part 96 AAA. EGUs subject to the Acid Rain program will be required to meet allowance requirements of that program in addition to CAIR's allowance requirements.

CAIR applies to any EGU that is a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine serving at any time, since the later of November 15, 1990⁹ or the start-up of the unit's combustion chamber, a generator with nameplate capacity of more than 25 megawatt electrical (MWe) producing electricity for sale. For a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continues to qualify as a cogeneration unit, a cogeneration unit is a CAIR unit that serves at any time a generator with nameplate capacity of more than 25 MWe and supplies in any calendar year more than one-third of the unit's potential electric output capacity or 219,000 megawatt hour (MWh), whichever is greater, to any utility power distribution system for sale. If a unit qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity but subsequently no longer qualifies as a cogeneration unit, the unit shall be subject to CAIR starting on the day the unit first no longer qualifies as a cogeneration unit.

By October 31, 2006, and in accordance with the requirements given in 40 Code of Federal Regulations (CFR) § 96.141 and incorporated in 30 TAC Chapter 101, Subchapter H, Division 7, the TCEQ provided the EPA with the initial NO_x allocations for 2009 through 2014 (Phase I of CAIR) to be distributed to the state's existing EGUs. The NO_x allocations were finalized by the EPA's Clean Air Markets Division in October 2007. For the 2015 control period of Phase II, Texas will submit to the EPA beginning October 31, 2011, the CAIR NO_x allocations for the control period in the sixth year after the year of the applicable deadline for submission under 40 CFR § 51.123(o)(2)(ii)(B).

The CAIR NO_x trading budget for each CAIR NO_x unit is based on the specific direction provided under SB 1672 of the 80th Texas Legislature 2007, Regular Session. A total amount of CAIR NO_x allowances equal to 9.5 percent of the CAIR NO_x trading budget for Texas will be set-aside as a special reserve for distribution to new units commencing operation on or after January 1, 2001. The remaining 90.5 percent of the CAIR NO_x trading budget for Texas will be distributed to units having commenced operation before January 1, 2001, based on a three-year average of the unit's historical heat input adjusted for the type of fuel burned. In performing the fuel adjustment, a unit's historical heat input will be multiplied by the following: 90 percent for coal-fired, 50 percent for natural gas-fired, and 30 percent for all other fossil fuels. Requests for allocations from new units are due to the TCEQ's executive director by May 1 annually.

In addition to the CAIR NO_x trading budget for Texas, the CAIR model trading rule provided an additional pool of allowances available for allocation in the 2009 control period to those CAIR NO_x units achieving early NO_x reductions in 2007 and 2008, or whose compliance with the CAIR NO_x reduction requirements for the 2009 control period would create undue risk to the reliability of electricity supply during the year 2009. This pool of NO_x allowances defined as the compliance supplement pool (CSP) equated to an additional 772 tons for Texas (40 CFR § 96.143). Section 101.508 outlines the requirements for the request by CAIR NO_x sources of allowances from the CSP.

The CAIR rule included a provision that other units may opt-in to the CAIR cap and trade program under

Wisconsin.

⁹ The definition of EGU was revised to include November 15, 1990, on April 28, 2006, (71 FR 82).

40 CFR Part 96 Subpart II for NO_x or 40 CFR Part 96 Subpart III for SO₂.

Enforcement responsibilities and expectations include requirements for the TCEQ to conduct pretest meetings with EGUs and observe stack testing and quality assurance testing/certification of monitoring systems. The federal regulations, 40 CFR Part 96 Subpart HH for NO_x and 40 CFR Part 96 Subpart HHH for SO₂, require that the TCEQ review each monitoring system certification application and issue written notice of approval or disapproval of an application within 120 days after receipt of a complete application (initial or recertification). A default approval is enacted if the certification is not issued within 120 days; however, the rule provides for later decertification, if necessary. The TCEQ will also be responsible for handling any monitoring system decertification actions, conducting site inspections and audits, and being the lead on any enforcement actions.

Title V permits were revised to reflect EGU participation in CAIR. Submission of CAIR permit applications is dictated by 40 CFR § 96.121 for NO_x and 40 CFR § 96.221 for SO₂. The TCEQ incorporated requirements for revising Title V permits in 30 TAC Chapter 122.

The TCEQ is participating in the EPA-administered interstate cap and trade program. Therefore, recordkeeping and reporting requirements for EGUs participating in CAIR will be directed and administered by the EPA's Clean Air Markets Division.

Texas' NO_x allocation methodology for Phase I was approved by the EPA on July 30, 2007, (72 FR 145). NO_x allocations from Phase I have been posted on the EPA's Web site.

On July 11, 2008, the United States Court of Appeals District of Columbia Circuit (Court) (No. 05-1244) vacated CAIR and the CAIR Federal Implementation Plan (FIP) and remanded it back to the EPA in its entirety.

On December 23, 2008, the Court issued a revised opinion to remand, without vacating, CAIR to the EPA. Therefore, CAIR will remain in effect while the EPA analyzes data and conducts rulemaking to modify the program to comply with the Court's July 2008 opinion. The Court declined to impose a schedule by which the EPA must complete the rulemaking, but reminded the EPA that the Court does ". . . not intend to grant an indefinite stay of the effectiveness of this Court's decision."

SECTION V: LEGAL AUTHORITY -

A. General

The Texas Commission on Environmental Quality (TCEQ) has the legal authority to implement, maintain, and enforce the National Ambient Air Quality Standards (NAAQS).

The first air pollution control act, known as the Clean Air Act of Texas, was passed by the Texas legislature in 1965. In 1967, the Clean Air Act of Texas was superseded by a more comprehensive statute, the Texas Clean Air Act (TCAA), found in Article 4477-5, Vernon's Texas Civil Statutes. The Legislature amended the TCAA in 1969, 1971, 1973, 1979, 1985, 1987, 1989, 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007, and 2009. In 1989, the TCAA was codified as Chapter 382 of the Texas Health & Safety Code.

Originally, the TCAA stated that the Texas Air Control Board (TACB) is the state air pollution control agency and is the principal authority in the state on matters relating to the quality of air resources. In 1991, the legislature abolished the TACB effective September 1, 1993, and its powers, duties, responsibilities, and functions were transferred to the Texas Natural Resource Conservation Commission (TNRCC). With the creation of the TNRCC, the authority over air quality is found in both the Texas Water Code and the TCAA. Specifically, the authority of the TNRCC is found in Chapters 5 and 7. Chapter 5, Subchapters A - F, H - J, and L, include the general provisions, organization, and general powers and duties of the TNRCC, and the responsibilities and authority of the executive director. This chapter also authorizes the TNRCC to implement action when emergency conditions arise and to conduct hearings. Chapter 7 gives the TNRCC enforcement authority. In 2001, the 77th Texas Legislature continued the existence of the TNRCC until September 1, 2013, and changed the name of the TNRCC to the Texas Commission on Environmental Quality (TCEQ).

The TCAA specifically authorizes the TCEQ to establish the level of quality to be maintained in the state's air and to control the quality of the state's air by preparing and developing a general, comprehensive plan. The TCAA, Subchapters A - D, also authorize the TCEQ to collect information to enable the commission to develop an inventory of emissions; conduct research and investigations; enter property and examine records; prescribe monitoring requirements; institute enforcement proceedings; enter into contracts and execute instruments; formulate rules; issue orders taking into consideration factors bearing upon health, welfare, social and economic factors, and practicability and reasonableness; conduct hearings; establish air quality control regions; encourage cooperation with citizens' groups and other agencies and political subdivisions of the state as well as with industries and the federal government; and establish and operate a system of permits for construction or modification of facilities.

Local government authority is found in Subchapter E of the TCAA. Local governments have the same power as the TCEQ to enter property and make inspections. They also may make recommendations to the commission concerning any action of the TCEQ that affects their territorial jurisdiction, may bring enforcement actions, and may execute cooperative agreements with the TCEQ or other local governments. In addition, a city or town may enact and enforce ordinances for the control and abatement of air pollution not inconsistent with the provisions of the TCAA or the rules or orders of the commission.

Subchapters G and H of the TCAA authorize the TCEQ to establish vehicle inspection and maintenance programs in certain areas of the state, consistent with the requirements of the federal Clean Air Act; coordinate with federal, state and local transportation planning agencies to develop and implement transportation programs and measures necessary to attain and maintain the NAAQS; establish gasoline

volatility and low emission diesel standards; and fund and authorize participating counties to implement vehicle repair assistance, retrofit and accelerated vehicle retirement programs.

B. Applicable Law

The following statutes and rules provide necessary authority to adopt and implement the SIP. The rules listed below have previously been submitted as part of the SIP.

Statutes

TEXAS HEALTH & SAFETY CODE, Chapter 382

September 1, 2009

TEXAS WATER CODE

September 1, 2009

All sections of each subchapter are included, unless otherwise noted.

Chapter 5: Texas Natural Resource Conservation Commission

Subchapter A: General Provisions

Subchapter B: Organization of the Texas Natural Resource Conservation Commission

Subchapter C: Texas Natural Resource Conservation Commission

Subchapter D: General Powers and Duties of the Commission

Subchapter E: Administrative Provisions for Commission

Subchapter F: Executive Director (except §§ 5.225, 5.226, 5.227, 5.2275, 5.231, 5.232, and 5.236)

Subchapter H: Delegation of Hearings

Subchapter I: Judicial Review

Subchapter J: Consolidated Permit Processing

Subchapter L: Emergency and Temporary Orders (§§ 5.514, 5.5145 and 5.515 only)

Subchapter M: Environmental Permitting Procedures (§ 5.558 only)

Chapter 7: Enforcement

Subchapter A: General Provisions (§§ 7.001, 7.002, 7.00251, 7.0025, 7.004, 7.005 only)

Subchapter B: Corrective Action and Injunctive Relief (§ 7.032 only)

Subchapter C: Administrative Penalties

Subchapter D: Civil Penalties (except § 7.109)

Subchapter E: Criminal Offenses and Penalties: §§ 7.177, 7.179-7.183

Rules

All of the following rules are found in Title 30 Texas Administrative Code, as of the following effective dates:

Chapter 7, Memoranda of Understanding, §§ 7.110 and 7.119

May 2, 2002

Chapter 19, Electronic Reporting

March 1, 2007

Chapter 35, Subchapters A-C, K: Emergency and Temporary Orders and Permits; Temporary Suspension or Amendment of Permit Conditions

July 20, 2006

Chapter 39, Public Notice, §§ 39.201; 39.401; 39.403(a) and (b)(8)-(10); 39.405(f)(1) and (g); 39.409; 39.411 (a), (b)(1)-(6) and (8)-(10) and (c)(1)-(6) and (d); 39.413(9), (11), (12) and (14); 39.418(a) and (b)(3) and (4); 39.419(a), (b), (d) and (e); 39.420(a), (b) and (c)(3) and (4); 39.423 (a) and (b); 39.601; 39.602; 39.603; 39.604; and 39.605

March 29, 2006

Chapter 55: Requests for Reconsideration and Contested Case Hearings; Public Comment, §§ 55.1; 55.21(a) - (d), (e)(2), (3), and (12), (f) and (g); 55.101(a), (b), and (c)(6) - (8); 55.103; 55.150; 55.152(a)(1), (2), and (6) and (b); 55.154; 55.156; 55.200; 55.201(a) - (h); 55.203; 55.205; 55.209, and 55.211	March 29, 2006
Chapter 101: General Air Quality Rules	January 1, 2009
Chapter 106: Permits by Rule, Subchapter A	June 30, 2004
Chapter 111: Control of Air Pollution from Visible Emissions and Particulate Matter	July 19, 2006
Chapter 112: Control of Air Pollution from Sulfur Compounds	July 16, 1997
Chapter 113: Standards of Performance for Hazardous Air Pollutants and for Designated Facilities and Pollutants	May 14, 2009
Chapter 114: Control of Air Pollution from Motor Vehicles	June 26, 2008
Chapter 115: Control of Air Pollution from Volatile Organic Compounds	July 19, 2007
Chapter 116: Permits for New Construction or Modification	May 29, 2008
Chapter 117: Control of Air Pollution from Nitrogen Compounds	March 4, 2009
Chapter 118: Control of Air Pollution Episodes	March 5, 2000
Chapter 122, § 122.122: Potential to Emit	December 11, 2002
Chapter 122, § 122.215: Minor Permit Revisions	June 3, 2001
Chapter 122, § 122.216: Applications for Minor Permit Revisions	June 3, 2001
Chapter 122, § 122.217: Procedures for Minor Permit Revisions	December 11, 2002
Chapter 122, § 122.218: Minor Permit Revision Procedures for Permit Revisions Involving the Use of Economic Incentives, Marketable Permits, and Emissions Trading	June 3, 2001

LIST OF ACRONYMS

Btu/KWh - British Thermal Unit per Kilowatt
CAIR - Clean Air Interstate Rule
CAMR - Clean Air Mercury Rule
CAMx - Comprehensive Air Model with Extensions
CFR - Code of Federal Regulations
CEMS - Continuous Emissions Monitoring System
CERR - Consolidated Emissions Reporting Rule
CMAQ - Community Multiscale Air Quality Modeling
CSP - Compliance Supplement Pool
EDMS - Emissions and Dispersion Modeling System
EGF - Electric Generating Facilities
EGU - Electric Generating Units
EI - Emissions Inventory
EIQ - Emissions Inventory Questionnaire
EPA - United State Environmental Protection Agency
EPN - Emission Point Number
FCAA - Federal Clean Air Act
FR - Federal Register
FTP - File Transfer Protocol
HB - House Bill
MMBtu - Million British Thermal Unit
MWe - Megawatt Electrical
MWh - Megawatt Hour
MPO - Metropolitan Planning Organization
NAAQS - National Ambient Air Quality Standards
NEI - National Emissions Inventory
NSR - New Source Review
NO_x - Nitrogen Oxides or Oxides of Nitrogen
PM - Particulate Matter
PM₁₀ - Particulate Matter 10 microns and less
PM_{2.5} - Particulate Matter 2.5 microns and less
SB - Senate Bill
SIP - State Implementation Plan
SO₂ - Sulfur Dioxide
STARS - State of Texas Air Reporting System
TAC - Texas Administrative Code
TACB - Texas Air Control Board
TCAA - Texas Clean Air Act
TCEQ - Texas Commission on Environmental Quality (commission)
TCM - Transportation Control Measure
TNRCC - Texas Natural Resource Conservation Commission
TPY - Tons Per Year
TTI - Texas Transportation Institute
TxDOT - Texas Department of Transportation
VOC - Volatile Organic Compound

**CLEAN AIR INTERSTATE RULE (CAIR)
STATE IMPLEMENTATION PLAN (SIP) REVISION**

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CHAPTER 1: GENERAL

1.1 BACKGROUND

“The History of the Texas State Implementation Plan (SIP),” a comprehensive overview of the SIP revisions submitted to the United States Environmental Protection Agency (EPA) by the State of Texas, is available at the following Web site: <http://www.tceq.state.tx.us/implementation/air/sip/siplans.html>.

1.2 INTRODUCTION

Due to the complexity of the Clean Air Interstate Rule (CAIR) program, history as well as information regarding the current proposed CAIR SIP revision is provided.

1.2.1 History

On May 12, 2005, the EPA promulgated CAIR thru revisions to 40 CFR Parts 51, 72, 73, 74, 77, 78, and 96. The EPA provided two options for CAIR-affected states to be in compliance: meet the state's emission budget by requiring electric generating units (EGU) to participate in an EPA-administered interstate cap and trade system that caps emissions in two stages; or meet an individual state emission budget through measures of the state's choosing.

The 79th Texas Legislature, 2005, Regular Session passed House Bill (HB) 2481 requiring the commission to adopt portions of the CAIR rule by reference and stipulating specifications for allowances and set-asides for nitrogen oxides (NO_x) emissions. Therefore, the Texas Commission on Environmental Quality (TCEQ) must participate in the EPA-administered interstate cap and trade program. The previous CAIR SIP revision contained information to participate in the EPA-administered cap and trade program. This fulfills the requirements of the 79th Texas Legislature, 2005, Regular Session. The legislature provided the TCEQ the allocation methodology for the allocation of NO_x allowances and direction to adopt CAIR by reference.

Federal rulemaking for CAIR set annual NO_x and sulfur dioxide (SO₂) emissions budgets for Texas EGUs in two phases. Texas has a NO_x budget of 181,014 tons per year (tpy) for Phase I, 2009 through 2014, and 150,845 tpy for Phase II, 2015 and thereafter. The SO₂ budgets are based on Title IV allocations. Title IV is also known as the Acid Rain program. Annual SO₂ state budgets for the years 2010 through 2014, Phase I, are based on a 50 percent reduction from Title IV for all units in the affected state. The Texas SO₂ budget for Phase I is 320,946 tpy. Phase II budgets, in 2015 and beyond, are based on a 65 percent reduction of Title IV allowances allocated to units in the affected state for SO₂ controls. The Texas SO₂ budget for Phase II is 224,662 tpy. Texas is required to meet these budgets through the CAIR interstate trading program established under 40 Code of Federal Regulations (CFR) Part 51.123(e)(2) for NO_x emissions. The state budget for annual SO₂ emissions is established under 40 CFR Part 51.124(e)(2), as incorporated in 30 TAC Chapter 101, Subchapter H, Division 7. The Texas annual budgets for NO_x and SO₂ are noted in Table 1-1: *Texas CAIR Emissions Budgets in Tons Per Year*.

Table 1-1: Texas CAIR Emissions Budgets in Tons Per Year

Pollutant	Phase I¹⁰ Budget	Phase II¹¹ Budget
NO _x	181,014	150,845
SO ₂	320,946	224,662

The objective of CAIR is to reduce the effects of transport of ozone and fine particulate matter of 2.5 microns and less (PM_{2.5}) and its precursors. NO_x is a precursor to both ozone and PM_{2.5} formation and SO₂ is a precursor to PM_{2.5} formation. Ozone is the major component of smog and is formed in the atmosphere by the photochemical reaction of NO_x and reactive hydrocarbons (volatile organic compounds or VOC) in the presence of high temperatures and ultraviolet light. NO_x and SO₂ are the two main anthropogenic factors that contribute to the formation of PM_{2.5}.

Recognizing the potential health and welfare impacts of ozone and PM_{2.5}, the EPA established CAIR in the eastern portion of the United States, including Texas. Twenty-eight states and the District of Columbia are required to implement the two-phase CAIR rule. The EPA determined 25 states, including Texas, contribute to NO_x and SO₂ emissions that affect PM_{2.5} levels in downwind states, and 25 states and the District of Columbia contribute to unhealthy levels of eight-hour ozone in downwind states. Texas is only considered to significantly contribute to PM_{2.5} pollution in two Illinois counties: Madison and Saint Clair.

CAIR applies to any EGU that is a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine serving at any time, since the later of November 15, 1990, or the start-up of the unit's combustion chamber, a generator with nameplate capacity of more than 25 megawatt electrical (MWe) producing electricity for sale. For a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continues to qualify as a cogeneration unit, a cogeneration unit is a CAIR unit that serves at any time a generator with nameplate capacity of more than 25 MWe and supplies in any calendar year more than one-third of the unit's potential electric output capacity or 219,000 megawatt hours (MWh), whichever is greater, to any utility power distribution system for sale. If a unit qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity but subsequently no longer qualifies as a cogeneration unit, the unit shall be subject to CAIR starting on the day that the unit first no longer qualifies as a cogeneration unit.

The EPA's model emission trading rules, 40 CFR Part 96 Subpart AA through II for annual NO_x emissions and 40 CFR Part 96 Subpart AAA through III for annual SO₂, are a market-based system designed to reduce the cost of complying with the NO_x and SO₂ emission limits. This trading system places a collective cap both on NO_x and SO₂ emissions from EGUs and provides for the trading of allowances similar to the Title IV of the Federal Clean Air Act's (FCAA) SO₂ Allowance Trading Program. The model emission trading rules to implement CAIR requirements in Texas are adopted in accordance with the requirements of Senate Bill (SB) 1672.

The 80th Texas Legislature, 2007, Regular Session passed SB 1672, which requires the commission to adopt the EPA-administered interstate cap and trade program by reference, but directs the commission to

¹⁰ Phase I for NO_x 2009 through 2014; Phase I for SO₂ 2010 through 2014.

¹¹ Phase II for NO_x 2015 and thereafter; Phase II SO₂ 2015 and thereafter.

use the NO_x allocation methodology specified in the bill. The previous Texas legislative session in 2005, adopted HB 2481, which required the commission to adopt the EPA-administered interstate cap and trade program by reference, but directed the commission to use the NO_x allocation methodology specified in the bill.

For NO_x allocations, 9.5 percent of the initial NO_x budget will be set aside for new units. New units, in operation on or after January 1, 2001, may only be allowed to receive allocations from this set aside. In 2016, new units will be reevaluated and if they do not have five years of operating data prior to the allocation date they will still be considered new. However, if there are five years of operating data, the new EGU will be reclassified as an existing unit.

For existing units, those in operation prior to January 1, 2001, allowances will be calculated using the average of the three highest amounts of the unit's adjusted control period heat input for 2000 through 2004 with the adjusted control period calculations as follows: for coal-fired units, the unit's control period heat input for such years is multiplied by 90 percent; for natural-gas fired units, the unit's control period heat input for such years is multiplied by 50 percent; and for other fossil fuel type units, the unit's control period heat input for such years is multiplied by 30 percent. Because of the legislative change in SB 1672, new¹² EGUs in the years 2016 and 2017 with five or more consecutive years of operation will receive an allocation from the existing¹³ EGU allocation pool. This revision is consistent with how new units are handled for the 2015 control period under the federal CAIR program. However, beginning in 2018 each existing unit's baseline heat input will be revised based on the average of the highest three years from control periods one through five of the preceding nine control periods. In accordance with SB 1672, this baseline readjustment will occur every five years. During this five-year baseline readjustment, new units with five or more years of operation will be reclassified from new units to existing units. Therefore, the number of NO_x allowance would not fluctuate and would remain constant for five years.

CAIR established a NO_x compliance supplement pool (CSP) for the annual NO_x program sources that contribute to PM_{2.5} pollution in the CAIR program area. Texas has been given a CSP of 772 tons of NO_x for EGUs that make any early reductions in 2007 and 2008 or that demonstrate a need for additional allowances to ensure reliability of electric supply. The executive director will determine the distribution of the CSP.

1.2.2 Current Proposed CAIR SIP Revision

This CAIR SIP revision proposal contains:

- Federal changes to the CAIR program, as specified below;
- Methodology for allocation of CAIR NO_x allowances as specified under SB 1672, 80th Texas Legislature, 2007, Regular Session; and
- Non- substantive administrative changes.

1.2.2.1 Federal Changes to the CAIR Program

Following are the federal changes to the CAIR program since May 12, 2005. A brief description of each change is given from the most recent change as well as the *Federal Register* citation to provide additional information, if needed.

¹²New EGU - Units commencing operation on or after January 1, 2001.

¹³Existing EGU - Units commencing operation before January 1, 2001.

Federal Implementation Plans for the Clean Air Interstate Rule: Automatic Withdrawal Provisions – 40 CFR Part 52 – Direct Final Rule

Federal Register, November 2, 2007

The EPA took a direct final action to amend the Federal Implementation Plans (FIP) for CAIR to provide for an automatic withdrawal of a CAIR FIP in a state upon the effective date of the EPA's approval of a full SIP revision meeting the CAIR requirements. All CAIR states are required to revise their SIPs to include control measures to reduce the NO_x and/or SO₂ emissions. The EPA issued CAIR FIPs on April 28, 2006, as a backstop to implement CAIR in each CAIR state until the state has an EPA-approved CAIR SIP in place to achieve the required reductions. In this FIP rulemaking, the EPA stated it would withdraw the FIPs in a state in coordination with the full approval of the state's CAIR SIP. In this action, the EPA makes the FIP withdrawal for the state automatic upon approval of the full CAIR SIP revision. Note that the EPA has said that it will give partial approval if the SIP is approved after the EPA makes allowances under the FIP for the year; the SIP approval would be fully valid for the next year. The EPA has stated that this automatic withdrawal provision will correct the deficiency that provided the basis for the EPA's promulgation of the FIPs for a state. The direct final rule was effective on January 16, 2008.

Revisions to Definition of Cogeneration Unit (CAIR); CAIR Federal Implementation Plans; Clean Air Mercury Rule (CAMR); and Technical Corrections to CAIR, CAIR FIPs, CAMR, and the Acid Rain Program Rules – 40 CFR Parts 51, 60, 72, 78, 96, and 97

Federal Register, October 19, 2007

The CAIR, CAIR FIP, and CAMR rules each include an exemption for cogeneration units that meet certain criteria. In light of information concerning biomass-fired cogeneration units that may not qualify for the exemption due to their particular combination of fuel and technical design characteristics, the EPA changed the cogeneration unit definition in CAIR, the CAIR model cap and trade rules, the CAIR FIP, CAMR, and the CAMR model cap and trade rule. Specifically, the EPA revised the calculation methodology for the efficiency standard in the cogeneration unit to exclude energy input from biomass making it more likely for units co-firing biomass to be able to meet the efficiency standard and qualify for an exemption. Because the EPA predicts this change will only affect a small number of relatively low-emitting units, the revision will have little effect on the projected emissions reductions and the environmental benefits of these rules. This action also clarifies the term "total energy input" used in the efficiency calculation and makes minor technical corrections to CAIR, the CAIR FIPs, CAMR, and the Acid Rain Program rules. This rule revision was effective on November 19, 2007.

The revised definition of biomass, per 40 CFR § 51.124(q), means any organic material grown for the purpose of being converted to energy; any organic by-product of agriculture that can be converted to energy; or any material that can be converted into energy and is non-merchantable for other purposes, that is segregated from other non-merchantable material, and that is: a forest-related organic resource, including mill residues, pre-commercial thinnings, slash, brush, or byproduct from conversion of trees to merchantable material; or a wood material, including pallets, crates, dunnage, manufacturing and construction material (other than pressure-treated, chemically-treated, or painted wood products), and landscape or right-of-way tree trimmings.

Additional provisions were added to the definition of cogeneration unit in 40 CFR § 51.124(q). The existing definition of a cogeneration unit definition under CAIR means a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine: having equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy; and producing during the 12-month period starting on the date the unit first produces

electricity and during any calendar year after which the unit first produces electricity – for a topping-cycle cogeneration unit, useful thermal energy not less than five percent of total energy output; and useful power that, when added to one-half of useful thermal energy produced, is not less than 42.5 percent of total energy input, if useful thermal energy produced is 15 percent or more of total energy output or not less than 45 percent of total energy input, if useful thermal energy produced is less than 15 percent of total energy output. For a bottoming-cycle cogeneration unit, useful power not less than 45 percent of total energy input.

The additional provision that the EPA added includes that provided that the total energy input for a topping-cycle cogeneration unit, useful thermal energy not less than five percent of total energy output; and useful power that, when added to one-half of useful thermal energy produced, is not less than 42.5 percent of total energy input, if useful thermal energy produced is 15 percent or more of total energy output or not less than 45 percent of total energy input, if useful thermal energy produced is less than 15 percent of total energy output and for a bottoming-cycle cogeneration unit, useful power not less than 45 percent of total energy input of this definition shall equal the unit's total energy input from all fuel except biomass if the unit is a boiler.

The new exemption restricted to boilers does not apply to combustion turbines burning gas. This revision should not affect anyone in Texas. The TCEQ invites comment from anyone who believes they would be affected because they burn gas in biomass combustion turbines. TCEQ's opinion is that currently no one in Texas would be affected by the new cogeneration exemption. TCEQ invites comment from anyone who believes that they would meet the requirements of the exemption and would therefore be affected.

(Several petitions were filed against CAMR, and on February 8, 2008, the United States Court of Appeals District of Columbia Circuit (No. 05-1097) vacated CAMR. The EPA petitioned the United States Supreme Court to review the decision. On February 23, 2009, the United States Supreme Court declined to hear the case. This officially vacates CAMR at the federal level. Because CAMR was incorporated by reference, the state rules and plan submitted to the EPA for CAMR are no longer valid.)

Clean Air Interstate Rule (CAIR) and CAIR Federal Implementation Plans; Corrections – 40 CFR Parts 51 and 97

Federal Register, October 1, 2007

The EPA made minor corrections to the CAIR to restore a phrase of regulatory text related to state annual emissions reporting requirements that was inadvertently deleted when the rule was amended in 2006. This rule also corrects typographical errors in the spellings of three states in the CAIR regulatory text and corrects a typographical error in a section citation in the CAIR FIPs regulatory text. This rule revision was effective on October 1, 2007.

Clean Air Interstate Rule (CAIR) and Federal Implementation Plans for CAIR; Corrections – 40 CFR Parts 51, 96, and 97

Federal Register, December 13, 2006

The EPA made minor corrections to the CAIR and the CAIR FIP to clarify text that may potentially be misleading. These corrections do not change any of CAIR or CAIR FIPs rule requirements or substantively change the rules in any way. This rule revision was effective on December 13, 2006.

Rulemaking on Section 126 Petition From North Carolina to Reduce Interstate Transport of Fine Particulate Matter and Ozone; Federal Implementation Plans to Reduce Interstate Transport of Fine Particulate Matter and Ozone; Revisions to the Clean Air Interstate Rule (CAIR); Revisions to the Acid Rain Program – CFR Parts 51, 52, 72, 73, 74,78, 96, and 97

Federal Register, April 28, 2006

The EPA took action to address the interstate transport of emissions of NO_x and SO₂ that contribute significantly to nonattainment and maintenance problems with respect to the National Ambient Air Quality Standards (NAAQS) for PM_{2.5} and eight-hour ozone. As one part of this action, the EPA provided its final response to a petition submitted to the EPA by the State of North Carolina under Section 126 of the Federal Clean Air Act (FCAA). The petitioner requested that the EPA find that SO₂ and/or NO_x emissions from EGUs in 13 states were significantly contributing to PM_{2.5} and/or eight-hour ozone nonattainment and maintenance problems in North Carolina and requested that the EPA establish control requirements to prohibit such significant contribution. The EPA denied the petition because, in this action, the EPA promulgated FIPs for all jurisdictions covered by the CAIR to address interstate transport.

The FIPs will regulate EGUs in the affected states and achieve the emissions reductions requirements established by the CAIR states that do not have approved SIPs to achieve the reductions. As the control requirements for the FIPs, the EPA adopted the model trading rules that the EPA provided in CAIR as a control option for states, with minor changes to account for federal rather than state implementation.

This action also revised the CAIR SIP model trading rules in order to address the interaction between the EPA-administered CAIR FIP trading programs being promulgated and the EPA-administered CAIR state trading programs that will be created by any state that elects to submit a SIP establishing such a trading program to meet the requirements of the CAIR. In addition, the EPA took final action on its reconsideration of the definition of “EGU” as it relates to solid waste incinerators.

This action also made revisions to the Acid Rain program in order to make the administrative appeals procedures, which currently apply to final determinations by the Administrator under the EPA-administered CAIR state trading programs, also apply to the EPA-administered CAIR state trading programs and to the EPA-administered trading program under the FIP action. In addition, the EPA made certain minor revisions to the Acid Rain program that will apply to all affected units.

The definition of CAIR EGU applicability has also been revised. CAIR applies to any EGU that is a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine serving at any time, since the later of November 15, 1990, or the start-up of the unit’s combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale. For a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continues to qualify as a cogeneration unit, a cogeneration unit is a CAIR unit that serves at any time a generator with nameplate capacity of more than 25 MWe and supplies in any calendar year more than one-third of the unit’s potential electric output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale. If a unit qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity but subsequently no longer qualifies as a cogeneration unit, the unit shall be subject to CAIR starting on the day the unit first no longer qualifies as a cogeneration unit. This action became effective on June 27, 2006.

1.2.2.2 Texas Legislative Changes

In 2007, the 80th Texas Legislature passed SB 1672,¹⁴ allowing the Texas Commission on Environmental Quality (TCEQ) to incorporate revisions to the federal CAIR that the EPA finalized since the initial adoption of the CAIR SIP revision by the commission on July 12, 2006, as well as revisions to the NO_x allocation methodology. SB 1672 contains provisions relating to correcting the number of minimum periods specified for NO_x allocation adjustments that were directed by HB 2481. HB 2481 revised the baseline of existing units by reviewing heat-input data every five years by using the three highest years heat input data from the previous seven years. However, the seven-year period did not provide adequate time to accommodate the EPA's requirement of providing allocations to them approximately four years in advance of each control period. Therefore, the number of control periods was changed from seven to nine in SB 1672. SB 1672 shifted the allocation update from 2016 to 2018.

Because of the legislative change in SB 1672, new units in the years 2016 and 2017 with five or more consecutive years of operation will receive allowances from the existing allocation pool. This revision is consistent with how new units are handled for the 2015 control period under the federal CAIR program. However, beginning in 2018 each existing unit's baseline heat input will be revised based on the average of the highest three years from control periods one through five of the preceding nine control periods. In accordance with SB 1672, this baseline readjustment will occur every five years. During this five-year baseline readjustment, new units with five or more years of operation will be reclassified from new units to existing units. Therefore, the number of NO_x allowance would not fluctuate and would remain consistent for five years.

1.3 HEALTH EFFECTS

Exposure to PM_{2.5} can cause acute and/or chronic health effects. Acute symptoms can include: lung irritation, coughing, wheezing, and difficulty taking deep breaths. Inflammation of the lungs can cause decreased lung function and aggravate existing respiratory diseases (e.g., asthma). Chronic exposure to some types of PM_{2.5}, such as diesel exhaust, may result in an increased risk of respiratory cancers such as lung cancer. The EPA has provided information in the CAIR preamble¹⁵ outlining the benefits of PM_{2.5} emission reductions through the CAIR program.

¹⁴ Act of May 10, 2007, 80th Leg. , § 2 (codified at Tex. Health & Safety Code §382.0173, concerning Adoption of Rules Regarding Certain SIP Requirements and Standards of Performance for Certain Sources). See Appendix B.

¹⁵ Section X - Statutory and Executive Order Reviews (c) Human Health Benefit Analysis, 40 CFR Parts 51, 72, et al., Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (Clean Air Interstate Rule); Revisions to Acid Rain Program; Revisions to the NO_x SIP Call; Final Rule, May 12, 2005.

1.4 PUBLIC HEARING INFORMATION

The commission will hold public hearings at the following times and locations:

CITY	DATE	TIME	LOCATION
Fort Worth	October 20, 2009	2:00 p.m.	Texas Commission on Environmental Quality 2309 Gravel Drive
Austin	October 21, 2009	2:00 p.m.	Texas Commission on Environmental Quality 12100 North I-35 Building C, Room 131E
Houston	October 22, 2009	2:00 p.m.	Houston-Galveston Area Council (H-GAC) 3555 Timmons Lane, Number 120 Conference Room B

The comment period will open on September 25, 2009, and close on October 26, 2009. Written comments will be accepted via mail, fax, or through the eComments system. All comments should reference “the CAIR SIP revision” and Project Number 2007-051-SIP-NR. Comments may be submitted to Kim Herndon, MC 206, State Implementation Plan Team, Chief Engineer’s Office, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087 or faxed to (512) 239-5687. Electronic comments may be submitted at <http://www5.tceq.state.tx.us/rules/ecomments>. File size restrictions may apply to comments submitted through the eComments system. Comments must be received by October 26, 2009.

Copies of the proposed SIP revision and all appendices can be obtained from the TCEQ’s Web site at <http://www.tceq.state.tx.us/implementation/air/sip/sipplans.html> or upon request to:

Texas Commission on Environmental Quality
Air Quality Division
P. O. Box 13087
Mail Code 206
Austin, Texas 78711-3087
Re: CAIR SIP Information

1.5 SOCIAL AND ECONOMIC CONSIDERATIONS

For a detailed explanation of the social and economic issues involved with any of the measures, please refer to the preambles that precede each proposed rule package accompanying this SIP and to the CAIR rule as proposed and promulgated by the EPA.

1.6 FISCAL AND MANPOWER RESOURCES

The TCEQ has determined that its fiscal and manpower resources are adequate and will not be adversely affected through the implementation of this plan. Specific information regarding the TCEQ budget is available upon request.

1.7 COORDINATION WITH LOCAL AGENCIES

The TCEQ has determined that there will be no assignment to local agencies under 40 CFR § 51.232 to carry out allocations under the NO_x or SO₂ trading programs. However, pre-existing assignments to local agencies regarding various enforcement activities remain in effect and could be utilized if enforcement activities are delegated to the TCEQ from the EPA.

1.8 ORGANIZATIONS RESPONSIBLE FOR DEVELOPMENT, IMPLEMENTATION, AND ENFORCEMENT

The TCEQ is the agency delegated authority by the Texas Legislature regarding the protection of air quality in the State of Texas. Other local government entities also have limited authority regarding air quality matters in the State of Texas.

1.9 DATA AVAILABILITY

The TCEQ affirms that it will retain all data used in the preparation of this SIP revision. All supporting documentation and data are available from the TCEQ upon request or are publicly available via the TCEQ Web site at <http://www.tceq.state.tx.us/implementation/air/sip/siplans.html>, subject to confidentiality restrictions, if applicable.

CHAPTER 2: EMISSIONS INVENTORY

2.1 BACKGROUND

The Air Emissions Reporting Requirements (AERR) (73 FR 76539, December 17, 2008) requires states to submit emissions inventories (EI) containing information regarding the emissions of criteria pollutants and criteria pollutant precursors (e.g., volatile organic compounds (VOC)). EIs are critical for the efforts of state, local, and federal agencies to attain and maintain the National Ambient Air Quality Standards (NAAQS) that the United States Environmental Protection Agency (EPA) has established for criteria pollutants such as ozone, particulate matter (PM), and carbon monoxide.

For areas that have failed to meet the NAAQS or are at risk of doing so, attainment of the NAAQS can be significantly impacted by interstate transport of pollutants. To address transport issues regarding ozone and fine particulate matter of 2.5 microns and less (PM_{2.5}), the EPA has promulgated the Clean Air Interstate Rule (CAIR). CAIR requires states that contribute significantly to nonattainment of the NAAQS for ozone and PM_{2.5} in downwind states to include control measures to reduce nitrogen oxides (NO_x) and sulfur dioxide emissions (SO₂) in its state implementation plan (SIP) revision.

For transport SIP revisions, the upwind states must also submit SO₂ and NO_x emissions data per 40 Code of Federal Regulations (CFR) § 51.125. As one of the upwind states specified by the EPA, Texas, through the Texas Commission on Environmental Quality (TCEQ), is required to submit annual emissions data for all SO₂ and NO_x sources for which control measures were specified in its transport SIP revisions. Additionally, per 40 CFR § 51.125, the TCEQ must submit periodic emissions data every third year from all SO₂ and NO_x emissions sources in the state.

To comply with the CAIR reporting requirements, the commission will continue to submit to the EPA both an annual EI of all point sources within Texas, as well as a periodic emissions inventory (PEI), which will be submitted every three years. Generally, these EIs include source types present in an area, the amount of each pollutant emitted, and the types of processes and control devices employed at each plant or source category. To ensure triennial reporting of all SO₂ and NO_x emissions sources in the state, the PEI will include criteria pollutant emissions estimates from the four general categories of emissions sources described in this chapter. These categories will encompass the following emissions sources.

- Point sources will include, at a minimum, SO₂ and NO_x emissions from all stationary sources (including electric generating units (EGU) that meet the definition of major source as defined in 40 CFR § 70.2.
- Area sources will include SO₂ and NO_x emissions from minor fuel combustion sources.
- On-road mobile sources will include SO₂ and NO_x emissions from motor vehicle sources.
- Non-road mobile sources will include, but not be limited to, SO₂ and NO_x emissions from a wide range of mass transportation, marine transportation, and construction equipment.

EIs provide data for a variety of air quality planning tasks, including establishing baseline emission levels, calculating reduction targets, control strategy development for achieving the required emission reductions, emission inputs into air quality simulation models, and tracking actual emission reductions against the established emissions growth and control budgets.

2.2 POINT SOURCES

Stationary point source emissions data are collected annually from sites that meet the reporting requirements of 30 Texas Administrative Code §101.10. To collect the data, the TCEQ mails emissions inventory questionnaires (EIQ) to all sites identified as meeting the reporting requirements. Companies are required to report emissions data and to provide sample calculations used to estimate the emissions. Information characterizing the process equipment, the abatement units, and the emission points is also required. All data submitted in the EIQ are reviewed for quality assurance purposes and then stored in the State of Texas Air Reporting System (STARS) database. At the end of the annual reporting cycle, point source emissions data are reported each year to the EPA for inclusion in the National Emissions Inventory (NEI).

2.3 AREA SOURCES

To capture information about emissions sources that fall below the point source reporting levels and are too numerous or too small to identify individually, emissions from these “area” sources are estimated on a source category or group basis. Area sources include commercial, small-scale industrial, and residential categories of sources that use materials or operate processes that can generate emissions. Area sources can be divided into two groups characterized by the emission mechanism: hydrocarbon evaporative emissions or fuel combustion emissions. Examples of sources of evaporative losses include printing, industrial coatings, degreasing solvents, house paints, leaking underground storage tanks, gasoline service station underground tank filling, and vehicle refueling operations. Fuel combustion sources include stationary source fossil-fuel combustion at residences and businesses, as well as outdoor burning, structural fires, and wildfires. These emissions, with some exceptions, may be calculated by multiplication of an EPA-established emission factor (emissions per unit of activity) times the appropriate activity or activity surrogate responsible for generating emissions. Population is the most commonly used activity surrogate for many area source categories while other activity data include amount of gasoline sold in an area, employment by industry type, and acres of crop land.

2.4 NON-ROAD MOBILE SOURCES

Non-road sources include vehicles, engines, and equipment used for construction, agriculture, transportation, recreation, and many other purposes. Non-road vehicles are also referred to as "off-road" or "off-highway" vehicles and they do not normally operate on roads or highways. This broad category is comprised of a diverse collection of machines - many of which are powered by diesel engines including, but not limited to: agricultural equipment, commercial and industrial equipment, construction and mining equipment, lawn and garden equipment, aircrafts, locomotives, and commercial marines.

A Texas-specific version of the EPA’s NONROAD 2005 model, called the Texas NONROAD (TexN) model, is used in calculating emissions from all non-road mobile equipments and recreational vehicles except aircrafts, locomotives, and commercial marine vessels. The NONROAD model does not include commercial marine, locomotive, and airport emissions. Emissions for these three source categories are estimated using other EPA approved methods and guidance documents. The airport emissions are calculated using the Federal Aviation Administration (FAA) Emissions and Dispersion Modeling System (EDMS) version 5.1. The locomotive emission estimates for Texas are based on specific fuel usage data derived from railway segment level gross ton mileage activity (line haul locomotives) and hours of operation (yard locomotives) provided directly by the Class I railroad companies operating in Texas. Data captured from the Automatic Identification System (AIS) program is applied to the latest emission

factors to quantify emissions from the commercial marine vessels.

2.5 ON-ROAD MOBILE SOURCES

On-road mobile sources consist of automobiles, trucks, motorcycles, and other motor vehicles traveling on public roadways. Combustion-related emissions are estimated for vehicle engine exhaust, and evaporative hydrocarbon emissions are estimated for the fuel tank and other evaporative leak sources on the vehicle. To estimate emissions, on-road mobile emission factors are multiplied by the corresponding activity level. Emission factors have been developed using the newest version of the EPA's mobile emissions factor model, MOBILE6.2. Various inputs are provided to the model to simulate the vehicle fleet driving in each particular nonattainment area. Inputs used to develop localized emission factors include vehicle speeds, vehicle age distributions, local meteorological conditions, type of inspection and maintenance (I/M) program in place, and local fuel properties. To complete the emissions estimate, the emission factors calculated by the MOBILE6.2 model must be multiplied by the local vehicle activity and the vehicle miles traveled (VMT). The level of vehicle travel activity is developed using localized travel demand models run by the Texas Transportation Institute (TTI), Texas Department of Transportation (TxDOT), or regional Metropolitan Planning Organizations (MPO). The travel demand models have been validated using a large number of ground counts from traffic counters placed in various locations throughout Texas. Estimates of VMT are often calibrated to outputs from the federal Highway Performance Monitor System, which is a model validated using a different set of traffic counters. Finally, roadway speeds are calculated by a post-processor to the travel demand model. The roadway speeds are needed to select the appropriate MOBILE6.2 emission factors.

CHAPTER 3: PHOTOCHEMICAL MODELING

Only minor changes have been made to this chapter. The complete text has been provided for convenience.

The Texas Commission on Environmental Quality (TCEQ) is not providing any modeling for this Clean Air Interstate Rule (CAIR) State Implementation Plan (SIP) revision. The United States Environmental Protection Agency (EPA) conducted air quality modeling using the Community Multi-Scale Air Quality (CMAQ) model in conjunction with 2001 meteorological data for simulating fine particulate matter of 2.5 microns and less (PM_{2.5}) concentrations and associated visibility effects, as well as using the Comprehensive Air Model with Extensions (CAMx) model with meteorological data for three episodes in 1995 to simulate eight-hour ozone concentrations. The CAIR air quality modeling information, modeling analysis techniques, model evaluation, and results for the PM_{2.5} and eight-hour ozone modeling are available in the EPA docket for the CAIR, Docket ID No. OAR-2003-0053.

Texas Health & Safety Code, § 382.0173 requires that the TCEQ adopt and implement the EPA model cap and trade program, and states have no authority to adjust the nitrogen oxides and sulfur dioxide emission budgets under the CAIR, no additional modeling is necessary to implement CAIR in Texas.

CHAPTER 4: DATA ANALYSIS

Only minor changes have been made to Chapter 4. The complete text has been provided for convenience.

The Texas Commission on Environmental Quality (TCEQ) is not providing specific data analysis for this Clean Air Interstate Rule (CAIR) State Implementation Plan (SIP) revision. The United States Environmental Protection Agency (EPA) conducted air quality modeling using the Community Multi-Scale Air Quality (CMAQ) model in conjunction with 2001 meteorological data for simulating fine particulate matter of 2.5 microns and less (PM_{2.5}) concentrations and associated visibility effects, as well as using the Comprehensive Air Model with Extensions (CAMx) model with meteorological data for three episodes in 1995 for simulating eight-hour ozone concentrations. The CAIR air quality modeling information, modeling analysis techniques, model evaluation, and results for the PM_{2.5} and eight-hour ozone modeling are available in the EPA docket for the CAIR, Docket ID No. OAR-2003-0053.

Texas Health & Safety Code, § 382.0173 requires that the TCEQ adopt and implement the EPA model cap and trade program, and states have no authority to adjust the nitrogen oxides and sulfur dioxide emission budgets under the CAIR, so no additional data analysis is necessary to implement CAIR in Texas.

CHAPTER 5: REQUIRED CONTROL STRATEGY ELEMENTS

5.1 BACKGROUND

On May 12, 2005, the Clean Air Interstate Rule (CAIR) was published in the *Federal Register*. The rule required 28 eastern states and the District of Columbia to reduce sulfur dioxide (SO₂) and/or nitrogen oxides (NO_x) emissions, which are precursors of particulate matter of 2.5 microns and less (PM_{2.5}) and ozone. Twenty-five states¹⁶ and the District of Columbia must reduce annual SO₂ and NO_x emissions to attain the PM_{2.5} National Ambient Air Quality Standards (NAAQS). Under CAIR, twenty-five states¹⁷ and the District of Columbia, not including Texas, must reduce NO_x emissions for the purposes of attainment of the eight-hour ozone NAAQS. States were given the choice to use one of two compliance options from the United States Environmental Protection Agency (EPA): meet the state's emission budget by requiring electric generating units (EGU) to participate in an EPA-administered interstate cap and trade program; or meet an individual state emissions budget through measures of the state's choosing. The 79th Texas Legislature in 2005 passed House Bill (HB) 2481¹⁸ in its Regular Session requiring the TCEQ to adopt the EPA-administered interstate cap and trade program by reference and stipulating specifications for NO_x allowance allocations and set-asides for NO_x emissions, as well as only requiring reductions associated with CAIR from new¹⁹ and existing²⁰ EGUs.

The 80th Texas Legislature, 2007 Regular Session passed Senate Bill (SB) 1672²¹ that requires the commission to adopt portions of the Clean Air Interstate Rule (CAIR) by reference and stipulates specifications for allocations and set-asides for CAIR NO_x allowances. Therefore, the TCEQ must participate in the EPA-administered interstate cap and trade program.

5.2 CONTROL STRATEGY - CAIR NO_x and SO₂ RULE CHANGES

The TCEQ elected to impose control measures on EGUs, and the commission imposed an annual NO_x mass emissions cap on all EGU sources in the state. As directed by HB 2481 and the subsequent SB 1672, the commission is, under 30 Texas Administrative Code (TAC) Chapter 101, Subchapter H, Division 7, incorporating 40 Code of Federal Regulations (CFR) Part 96, Subpart AA through Subpart II for NO_x and Subpart AAA through Subpart III for SO₂ by reference for the purpose of complying with the federal CAIR program.

In addition, the commission is specifying rules under 30 TAC Chapter 101, Subchapter H, Division 7 regarding the methodologies and procedures for determining each CAIR NO_x source's CAIR NO_x allocation in lieu of the CAIR NO_x allocation methodologies and procedures under 40 CFR Part 96,

¹⁶ Alabama, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Missouri, New York, New Jersey, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, West Virginia, and Wisconsin.

¹⁷ Alabama, Arkansas, Connecticut, Delaware, Florida, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia, and Wisconsin.

¹⁸ Act of June 18, 2005, 79th Leg., R.S., HB. 2481, § 2 (codified at Tex. Health & Safety Code §382.0173, concerning Adoption of Rules Regarding Certain SIP Requirements and Standards of Performance for Certain Sources). See Appendix B.

¹⁹ New EGU - Units commencing operation on or after January 1, 2001.

²⁰ Existing EGU - Units commencing operation before January 1, 2001.

²¹ Act of May 10, 2007, 80th Leg., R.S., SB 1672, § 2 (codified at Tex. Health & Safety Code §382.0173, concerning Adoption of Rules Regarding Certain SIP Requirements and Standards of Performance for Certain Sources).

Subpart EE. The rules apply to any EGU that is a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine serving at any time, since the later of November 15, 1990, or the start-up of the unit's combustion chamber, a generator with nameplate capacity of more than 25 megawatt electrical (MWe) producing electricity for sale. For a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continues to qualify as a cogeneration unit, a cogeneration unit is a CAIR unit that serves at any time a generator with nameplate capacity of more than 25 MWe and supplies in any calendar year more than one-third of the unit's potential electric output capacity or 219,000 megawatt hour (MWh), whichever is greater, to any utility power distribution system for sale. If a unit qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity but subsequently no longer qualifies as a cogeneration unit, the unit shall be subject to CAIR starting on the day the unit first no longer qualifies as a cogeneration unit.

5.2.1 Interstate Cap and Trade Program for NO_x and SO₂

(This subsection has not been changed. It has been included in the current CAIR SIP revision proposal for convenience.)

The EPA's CAIR model trading rule, 40 CFR Part 96, is a market-based cap and trade system designed to reduce the costs of complying with the new NO_x and SO₂ reduction requirements. The CAIR model rule designates respective budgets for annual NO_x and SO₂ emissions within each state to be applied to all fossil-fuel-fired boilers and turbines serving an electrical generator with a nameplate capacity greater than 25 MWe and producing electricity for sale. The model rule provides flexibility in complying with the NO_x and SO₂ reduction requirements through unrestricted banking of excess allowances and the trading of allowances between EGUs in Texas and other affected CAIR states under common caps. For example, EGUs in Texas will be allowed to trade NO_x allowances with other CAIR states participating in the CAIR annual NO_x trading program, while the trading of SO₂ allowances will be permissible with CAIR states participating in the CAIR SO₂ trading program or the Title IV SO₂ allowance trading program. Under the model rule, states are provided flexibility in the allocation methodology used to determine CAIR NO_x allocations for each CAIR NO_x unit. CAIR states are then responsible for submitting the CAIR NO_x allowance allocations to the EPA for recordation.

5.2.2 CAIR NO_x Annual Trading Budget

(This subsection has not been changed. It has been included in the current CAIR SIP revision proposal for convenience.)

30 TAC § 101.503 specifies that the NO_x trading budget for annual allocations of CAIR NO_x allowances for each control period in 2009 through 2014, and for 2015 and thereafter, will be equivalent to the tons per year (tpy) of NO_x emissions listed for Texas in the state trading budget under 40 CFR § 96.140. As promulgated on May 12, 2005, 40 CFR § 96.140 provides Texas with an annual NO_x trading budget of 181,014 tpy for each control period in 2009 through 2014, and 150,845 tpy for each control period in 2015 and thereafter.

5.2.3 CAIR NO_x Allocation Methodology

In 2007, the 80th Texas Legislature passed SB 1672, allowing the TCEQ to incorporate revisions to the federal CAIR that the EPA finalized since the initial adoption of the CAIR SIP revision by the commission on July 12, 2006, as well as revisions to the NO_x allocation methodology. SB 1672 contains provisions relating to correcting the number of minimum periods specified for NO_x allocation adjustments that were directed by HB 2481. HB 2481 revised the baseline of units commencing

operation before January 1, 2001, by reviewing heat-input data every five years by looking back one through five of the previous seven years. However, the seven-year period did not provide adequate time to accommodate the EPA's requirement of providing allocations to them approximately four years in advance of each control period. Therefore, the number of control periods was changed from seven to nine in SB 1672. SB 1672 shifted the allocation update from 2016 to 2018.

Because of this legislative change in SB 1672, units commencing operation on or after January 1, 2001, with five or more years of operation will receive allowances from the general pool (90.5 percent of the Texas NO_x trading budget) in the years 2016 and 2017. However, beginning in 2018 each unit's baseline heat input will be based on the average of the highest three years from control periods one through five of the preceding nine control periods. In accordance with SB 1672, this baseline readjustment will happen every five years. Therefore, the number of NO_x allowances would not fluctuate and would remain constant for five years.

The methodology described in 30 TAC § 101.506 is used to allocate CAIR NO_x allowances for each CAIR NO_x unit. For units commencing operation before January 1, 2001, CAIR NO_x allowances will be allocated based on a three-year average historical heat input, in million British thermal units (MMBtu), adjusted for the type of fuel burned. For each control period in 2009 through 2017, the baseline heat input for units commencing operation before January 1, 2001, will be the average of the three highest amounts of the unit's historical heat input, adjusted for fuel type, from calendar years 2000 through 2004. In accordance with SB 1672, beginning with the 2018 control period and for the control period beginning every five years thereafter, the baseline heat input for units commencing operation before January 1, 2001, will be adjusted to reflect the average of the three highest amounts of the unit's control period heat input, adjusted for fuel type, from control periods one through five of the previous nine control periods. The fuel type adjustment will be performed by multiplying a unit's baseline heat input by the following: 90 percent for coal-fired; 50 percent for natural gas-fired; and 30 percent for all other fossil fuels.

For units commencing operation on or after January 1, 2001, CAIR NO_x allowances will be allocated for each control period in 2009 through 2014 only from the NO_x new unit set-aside (9.5 percent of the Texas NO_x trading budget) identified under 30 TAC §101.503(b) and as prescribed by the Texas Legislature in HB 2481. A unit commencing operation on or after January 1, 2001, will no longer be eligible for CAIR NO_x allowances from the new unit set-aside once a baseline heat input is established for the unit and the unit is receiving allowances from the general pool. The baseline heat input will be the average of the three highest amounts of the unit's total converted control period heat input from the first five years of commercial operation for the 2015, 2016, and 2017 control periods. Table 5-1: *CAIR NO_x Units Qualifying for an Allocation of CAIR NO_x Allowances from the General Pool for the 2015, 2016, and 2017 Control Periods* lists all qualifying CAIR NO_x units within the general pool during the 2015, 2016, and 2017 control periods.

Table 5-1: CAIR NO_x Units Qualifying for an Allocation of CAIR NO_x Allowances from the General Pool for the 2015, 2016, and 2017 Control Periods

CAIR NO_x Units Qualifying for an Allocation of 2015 CAIR NO_x Allowances from the General NO_x Trading Budget		
CAIR NO_x Units:	Baseline Heat Input Determined From:	Data Used from Each Control Period for Determining the Baseline:
Commencing operation before January 1, 2001	2000 through 2004	Heat Input
Commencing operation in 2001	First Five Years of Commercial Operation (Generally 2001 through 2005)	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2002	First Five Years of Commercial Operation (Generally 2002 through 2006)	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2003	First Five Years of Commercial Operation (Generally 2003 through 2007)	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2004	First Five Years of Commercial Operation (Generally 2004 through 2008)	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2005	First Five Years of Commercial Operation (Generally 2005 through 2009)	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2006	First Five Years of Commercial Operation (Generally 2006 through 2010)	Gross Electrical Output and/or Heat Energy of the Steam Produced
CAIR NO_x Units Qualifying for an Allocation of 2016 CAIR NO_x Allowances from the General NO_x Trading Budget		
CAIR NO_x Units:	Baseline Heat Input Determined From:	Data Used from Each Control Period for Determining the Baseline:
Commencing operation before 2007	Same baseline heat input used for the 2015 control period	Same data used for the 2015 control period
Commencing operation in 2007	First Five Years of Commercial Operation (Generally 2007 through 2011)	Gross Electrical Output and/or Heat Energy of the Steam Produced
CAIR NO_x Units Qualifying for an Allocation of 2017 CAIR NO_x Allowances from the General NO_x Trading Budget		
CAIR NO_x Units:	Baseline Heat Input Determined From:	Data Used from Each Control Period for Determining the Baseline:
Commencing operation before 2007	Same baseline heat input used for the 2015 control period	Same data used for the 2015 control period
Commencing operation in 2007	Same baseline heat input used for the 2016 control period	Same data used for the 2016 control period
Commencing operation in 2008	First five year of commercial operation (Generally 2008 through 2012)	Gross Electrical Output and/or Heat Energy of the Steam Produced

Beginning with the 2018 control period and for the control period beginning every five years thereafter, the baseline heat input for units commencing operation on or after January 1, 2001, will be adjusted to reflect the average of the three highest amounts of the unit's total converted control period heat input from control periods one through five of the previous nine control periods. In calculating a unit's converted control period heat input on a modified output basis, the unit's gross electrical output will be multiplied by a heat rate conversion factor of 7,900 British thermal unit per kilowatt (Btu/kWh) for coal-fired units and 6,675 Btu/kWh for natural gas- and oil-fired units. For cogeneration units, the converted heat input will be calculated by converting the available thermal output, in British thermal units, of useable steam to an equivalent heat input by dividing the thermal output by a general boiler/heat

exchanger efficiency of 80 percent. For combustion turbine cogeneration units, the converted heat input will be calculated by first converting the available thermal output of useable steam from the heat recovery steam generator or heat exchanger to an equivalent heat input by dividing the thermal output by a general boiler/heat exchanger efficiency of 80 percent. Then, the electrical generation from the combustion turbine must be added after conversion to an equivalent heat input by multiplying the electrical output by 3,413 Btu/kWh. The sum will yield the total equivalent heat input for the combustion turbine cogeneration unit. Table 5-2: *CAIR NO_x Units Qualifying for an Allocation of CAIR NO_x Allowances from the General Pool for the 2018 through 2022 Control Periods* lists all qualifying CAIR NO_x units within the general pool during the 2018 through the 2022 control periods.

Table 5-2: CAIR NO_x Units Qualifying for an Allocation of CAIR NO_x Allowances from the General Pool for the 2018 through 2022 Control Periods

CAIR NO_x Units Qualifying for an Allocation of 2018 through 2022 CAIR NO_x Allowances from the General NO_x Trading Budget		
CAIR NO_x Units:	Baseline Heat Input Determined From:	Data Used from Each Control Period for Determining the Baseline:
Commencing operation before January 1, 2001	2009 through 2013	Heat Input
Commencing operation in 2001	Commercial Operation Data 2009 through 2013	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2002	Commercial Operation Data 2009 through 2013	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2003	Commercial Operation Data 2009 through 2013	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2004	Commercial Operation Data 2009 through 2013	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2005	Commercial Operation Data 2009 through 2013	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2006	Commercial Operation Data 2009 through 2013	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2007	Commercial Operation Data 2009 through 2013	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2008	Commercial Operation Data 2009 through 2013	Gross Electrical Output and/or Heat Energy of the Steam Produced
Commencing operation in 2009	Commercial Operation Data 2009 through 2013	Gross Electrical Output and/or Heat Energy of the Steam Produced

The allocation methodology prescribed in House Bill 2481, 2005 Texas Legislature, Regular Session, and SB 1672, 2007 Texas Legislature, Regular Session, distributes 90.5 percent of the Texas NO_x trading budget to each CAIR NO_x unit with a baseline heat input determined under § 101.506(a) or (b)(2) or (3) in proportion to each CAIR NO_x unit's share of baseline heat input to the total baseline heat input for all CAIR NO_x units with a baseline heat input determined under § 101.506(a) or (b)(2) or (3). For units that commence operation on or after January 1, 2001, and that have not established a historical baseline heat input in accordance with § 101.506(b)(2) or (3), CAIR NO_x allowances are allocated from the new unit set-aside beginning with the later of the 2009 control period or the first control period after the control period in which the unit commences commercial operation. The allocation methodology requires the executive director to distribute CAIR NO_x allowances from the new unit set-aside upon receipt of a request from the CAIR-designated representative for the CAIR NO_x unit. Submittal of each request for a

CAIR NO_x allocation from the new unit set-aside will be required on or before May 1 of the first control period for which the request is being made and after the date on which the CAIR NO_x unit commences commercial operation. CAIR NO_x allowances requested from the new unit set-aside will not be allocated in excess of the unit's total tons per year of NO_x emissions reported to the EPA for the previous control period.

On or after May 1st of each control period, the executive director will review each CAIR NO_x allocation request, determine the sum of all CAIR NO_x allocation requests, and allocate CAIR NO_x allowances from the new unit set-aside for the control period. If the amount of CAIR NO_x allowances in the new unit set-aside is greater than or equal to the sum of all CAIR NO_x allowances requested, the executive director will allocate the amount of CAIR NO_x allowances requested. If the amount of CAIR NO_x allowances in the new unit set-aside is less than the sum of all CAIR NO_x allowances requested, the executive director will allocate CAIR NO_x allowances in proportion to the amount of CAIR NO_x allowances requested by a CAIR NO_x unit to the total amount of CAIR NO_x allowances requested by all CAIR NO_x units.

The allocation methodology will allow units commencing operation on or after January 1, 2001, to begin receiving allowances from the new unit set-aside for the control period immediately following the control period in which the unit commences commercial operation based on the unit's emissions reported for the previous control period. Therefore, a CAIR NO_x source operating a unit commencing operation on or after January 1, 2001, will be required to hold allowances covering the emissions from the unit for the control period in which the unit commences commercial operation but will not receive an allocation for that control period. CAIR NO_x allocations for this unit in subsequent control periods will continue to be based on the unit's emissions from the previous control period until the unit establishes a baseline in accordance with § 101.506(b)(2) or (3). All CAIR NO_x allocations under the allocation methodology will be rounded to the nearest whole allowance per unit. Allowances are only distributed in one ton increments.

Any unallocated CAIR NO_x allowances remaining in the new unit set-aside for a given control period will be distributed to CAIR NO_x units with a historical baseline heat input receiving an allocation from the general pool. Each unit in the general pool will receive an additional allocation proportional to the ratio of its original allocation to the general pool. The distribution is calculated by multiplying the amount of unallocated CAIR NO_x allowances remaining in the new unit set-aside by each CAIR NO_x unit's allocation determined under § 101.506(c), divided by 90.5 percent of the Texas NO_x trading budget, and rounded to the nearest whole allowance.

For the purposes of determining CAIR NO_x allocations, the following criteria are considered: a CAIR NO_x unit's control period heat input; fossil-fuel type status (coal-fired, natural gas-fired, or other type fossil-fuel-fired); and the total tons of NO_x emissions during a calendar year to be determined in accordance with 40 CFR Part 75, to the extent the unit was otherwise subject to those requirements for the year will be used. If a CAIR NO_x unit was not otherwise subject to the requirements of 40 CFR Part 75 for the year, the unit's control period heat input, status fossil-fuel type, and total tons of NO_x emissions during a calendar year will be based on the best available data reported to the executive director.

5.2.4 CAIR NO_x Budget Set-Aside

SB 1672 requires that an amount of CAIR NO_x allowances equivalent to 9.5 percent of the Texas NO_x trading budget be set aside for new units. This new unit set-aside will equate to 17,196 tpy of CAIR NO_x

allowances for each control period in 2009 through 2014, and 14,330 tpy of CAIR NO_x allowances for each control period in 2015 and thereafter.

5.2.5 CAIR NO_x Allowance Compliance Supplement Pool (CSP)

(This subsection has not been changed. It has been included in the current CAIR SIP revision proposal for convenience.)

Section 101.508 outlines the requirements for the allocation of additional CAIR NO_x allowances for the 2009 control period from the CSP for Texas provided under 40 CFR § 96.143. As promulgated on May 12, 2005, 40 CFR § 96.140 provides Texas with an additional 772 CAIR NO_x allowances under the CSP. The rule language allows the CSP allowances to be distributed to those CAIR NO_x units that achieve early NO_x reductions in 2007 and 2008 beyond any applicable state or federal emission limitation during those years. CAIR NO_x units seeking an additional allocation from the CSP for early NO_x reductions in 2007 and 2008 will be required to monitor and report the unit's NO_x emission rate and heat input in accordance with the continuous emissions monitoring and reporting requirements under 40 CFR Part 96, Subpart HH for the entire control period in which the early reductions are being generated. The CAIR-designated representative is required to submit to the executive director by July 1, 2009, a request for an allocation of CAIR NO_x allowances from the CSP in an amount not to exceed the sum of the CAIR NO_x unit's emission reductions, in tpy, during 2007 and 2008 that were not necessary to comply with any state or federal emission limitation applicable during those years.

In addition, the CSP provides for the allocation of additional CAIR NO_x allowances from the CSP for CAIR NO_x units of which compliance with the CAIR NO_x annual trading program in the 2009 control period would create undue risk to the reliability of electricity supply during 2009. The CAIR-designated representative is required to submit to the executive director by July 1, 2009, a request for an allocation of CAIR NO_x allowances from the CSP in an amount not to exceed the minimum amount of CAIR NO_x allowances necessary to remove the risk to the reliability of electricity supply. The CAIR-designated representative will be required to demonstrate that in the absence of the additional allocation to the unit, the unit's compliance with the CAIR NO_x annual trading program during the 2009 control period would create an undue risk to electric reliability during 2009. This demonstration is required to show that it would not be feasible to obtain a sufficient amount of electricity from other electric generation facilities or obtain a sufficient amount of CAIR NO_x allowances from the CSP by making early NO_x reductions in 2007 and 2008.

The executive director will review each request for an additional allocation from the CSP and allocate CAIR NO_x allowances for the 2009 control period to CAIR NO_x units regulated under a request. If the amount of CAIR NO_x allowances in the CSP is greater than or equal to the sum of all CAIR NO_x allowances requested, the executive director will allocate the amount of CAIR NO_x allowances requested. If the amount of CAIR NO_x allowances in the CSP is less than the sum of all CAIR NO_x allowances requested, the executive director will allocate to each CAIR NO_x unit regulated under a request an amount of CAIR NO_x allowances in proportion to the amount of CAIR NO_x allowances requested by a CAIR NO_x unit to the total amount of CAIR NO_x allowances requested by all CAIR NO_x units. The executive director will determine and submit to the EPA by November 30, 2009, the CAIR NO_x allocations from the CSP.

5.2.6 CAIR Annual SO₂ Budget

(This subsection has not been changed. It has been included in the current CAIR SIP revision proposal for convenience.)

The commission has incorporated by reference in § 101.502 the requirements of 40 CFR Part 96, Subparts AAA-III that contains the SO₂ budget limits for Texas. The Texas CAIR SO₂ emission budget is specified in 40 CFR § 51.124 as 320,946 tpy for the 2010 through 2014 period and 224,662 tpy for 2015 and thereafter.

5.2.7 CAIR SO₂ Allocations

(This subsection has not been changed. It has been included in the current CAIR SIP revision proposal for convenience.)

CAIR SO₂ allocations will be distributed by the EPA based on the CAIR source's Title IV SO₂ allowance allocation. The EPA will establish CAIR compliance accounts for each CAIR source and maintain an allowance tracking system to record the deposit, transfer, and deduction for compliance of all CAIR allowances. The TCEQ incorporated by reference in § 101.502 the requirements of 40 CFR Part 96, Subparts AAA-III, which relate to the CAIR SO₂ program.

5.2.8 Authorized Account Representatives for CAIR NO_x and SO₂ Program

(This subsection has not been changed. It has been included in the current CAIR SIP revision proposal for convenience.)

Each CAIR NO_x source, including all CAIR NO_x units at the source, will have only one CAIR-designated representative with regard to all matters under the CAIR NO_x Annual Trading program concerning the source or any CAIR NO_x unit at the source.

The CAIR-designated representative is authorized by the owners and operators of the source and all such units at the source in accordance with 40 CFR Part 96, Subparts BB and II, to represent and legally bind each owner and operator in matters pertaining to the CAIR NO_x Annual Trading program. If the CAIR NO_x source is also a CAIR SO₂ source, this person shall be the same person as the CAIR-designated representative under the CAIR SO₂ Trading program. If the CAIR NO_x source is also subject to the Acid Rain program, this person shall be the same person as the designated representative under the Acid Rain program.

5.2.9 CAIR NO_x and CAIR SO₂ Allowance Tracking System

(This subsection has not been changed. It has been included in the current CAIR SIP revision proposal for convenience.)

The commission has incorporated by reference 40 CFR Part 96, Subparts FF and FFF regarding CAIR NO_x and SO₂ Allowance Tracking Systems. The NO_x and SO₂ Allowance Tracking Systems are controlled and operated by the EPA. Compliance accounts for CAIR NO_x and SO₂ sources are required for the purpose of holding CAIR NO_x and SO₂ allowances.

5.2.10 CAIR NO_x and CAIR SO₂ Allowance Transfers

(This subsection has not been changed. It has been included in the current CAIR SIP revision proposal for convenience.)

A CAIR-authorized account representative seeking recordation of CAIR NO_x or SO₂ allowance transfers shall submit the request to the EPA. The NO_x and SO₂ allowance transfer must include the following elements: the account numbers for both the transferor and transferee accounts; the serial number for each CAIR NO_x or SO₂ allowance in the transferor account that is to be transferred; and the name and signature of the CAIR-authorized account representative of the transferor account and the date signed. 40 CFR Part 96 Subparts GG and GGG have been incorporated by reference in Chapter 101, Subchapter H, Division 7, to meet the requirements of NO_x and SO₂ allowance transfers, respectively.

5.2.11 CAIR NO_x and CAIR SO₂ Permits

(This subsection has not been changed. It has been included in the current CAIR SIP revision proposal for convenience.)

All elements of the CAIR NO_x Annual Trading program and CAIR SO₂ Trading program are required to be federally enforceable through the issuance of a CAIR permit as a complete and separable portion of the CAIR source's Title V permit. Submission of CAIR permit applications are dictated by 40 CFR Part 96 Subpart CC for NO_x and 40 CFR Part 96, Subpart CCC for SO₂. The TCEQ has incorporated requirements for revising Title V permits in 30 TAC Chapter 122.

5.2.12 Opt-In Requirements for NO_x and SO₂ Annual Trading Programs

(This subsection has not been changed. It has been included in the current CAIR SIP revision proposal for convenience.)

The CAIR rule includes a provision that other units may opt in to the CAIR program under 40 CFR Part 96, Subpart II for NO_x and Subpart III for SO₂. A CAIR NO_x opt in unit must be a unit that is located in Texas; not considered a CAIR NO_x unit; is not covered by a retired unit exemption under 40 CFR § 72.8; has or is required or qualified to have a Title V operating permit or other federally enforceable permit; and vents all of its emissions to a stack and meets the monitoring, recordkeeping, and reporting requirements of 40 CFR Part 96 Subpart HH. Units electing to opt-in to the CAIR NO_x Annual Trading program will be required to monitor and report the NO_x emission rate and heat input of the unit in accordance with the monitoring and reporting requirements of Subpart HH for the entire control period prior to the date on which the unit elects to enter the CAIR NO_x Annual Trading program. The baseline heat input and baseline emission rate for each CAIR NO_x opt in unit will depend upon the number of control periods the unit has monitored and reported heat input and emission rate data in accordance with Subpart HH. If the unit has monitored and reported for only one control period, the baseline heat input and emission rate will be the unit's total heat input and NO_x emission rate for the control period immediately preceding the date on which the unit elects to opt-in. For units that have monitored and reported for more than one control period, the baseline heat input and emission rate will be the average of the most recent three-year period. The opt-in provisions of Subpart II allow opt-in units to choose from two different allocation methods for receiving an allocation of CAIR NO_x allowances. The general approach will allocate CAIR NO_x allowances to opt-in units at 70 percent of their baseline NO_x emission rate with no additional reductions required after the 2009 control period. An alternative approach will allocate CAIR NO_x allowances at the baseline levels for the 2009 through 2014 control periods but require additional reductions starting in 2015. The CAIR NO_x allowance allocation for each control

period beginning in 2015, and thereafter, will be based on a NO_x emission rate equal to the lesser of 0.15 lb of NO_x/million British thermal unit (MMBtu), the unit's baseline emission rate, or the most stringent state or federal NO_x emission limit applicable for any time during the applicable control period. Units may elect to opt into the CAIR NO_x Annual Trading program without electing to opt in to the CAIR SO₂ Trading program and may withdraw from participation in the CAIR NO_x Annual Trading program after five years of participation.

Subpart III describes the opt-in provisions for the CAIR SO₂ Trading program. The opt-in provisions apply to a unit that is not already a CAIR SO₂ unit under 40 CFR § 96.204 or covered by a retired unit exemption; has or is qualified to have a Title V operating permit; vents all emissions to a stack; and can meet the monitoring, recordkeeping, and reporting requirements of 40 CFR Part 96, Subpart HHH. CAIR SO₂ opt in units will be required to apply for and obtain a CAIR permit as prescribed under Subpart CCC. Units electing to opt-in to the CAIR SO₂ Trading program will be required to monitor and report the SO₂ emission rate and heat input of the unit in accordance with the monitoring and reporting requirements of Subpart HHH for the entire control period prior to the date on which the unit elects to enter the CAIR SO₂ Trading program. The baseline heat input and baseline emission rate for each CAIR SO₂ opt-in unit will be dependent upon the number of control periods the unit has monitored and reported heat input and emission rate data in accordance with Subpart HHH. If the unit has monitored and reported for only one control period, the baseline heat input and emission rate will be the unit's total heat input and SO₂ emission rate for the control period immediately preceding the date on which the unit elects to opt in. For units that have monitored and reported for more than one control period, the baseline heat input and emission rate will be the average of the most recent three-year period. The opt-in provisions of Subpart III allow opt-in units to choose from two different allocation methods for receiving an allocation of CAIR SO₂ allowances. The general approach will allocate CAIR SO₂ allowances to opt-in units at 70 percent of their baseline SO₂ emission rate with no additional reductions required after the 2010 control period. An alternative approach would allocate CAIR SO₂ allowances at the baseline levels for the 2010 through 2014 control periods but require greater reductions starting in 2015. The CAIR SO₂ allowance allocation for each control period beginning in 2015, and thereafter, will be based on a SO₂ emission rate equal to the lesser of the unit's baseline emission rate multiplied by 10 percent or the most stringent state or federal SO₂ emission limit applicable for any time during the applicable control period. Units may elect to opt in to the CAIR SO₂ Trading program without electing to opt-in to the CAIR NO_x Annual Trading program and may withdraw from participation in the CAIR SO₂ Trading program after five years of participation.

5.3 ENFORCEMENT

(This section has not been changed. It has been included in the current CAIR SIP revision proposal for convenience.)

Requirements for allowance tracking and deductions for excess emissions are discussed in Section 5.2.10 CAIR NO_x and CAIR SO₂ Allowance Transfers, and requirements relating to the monitoring, recordkeeping, and reporting certifications requirements are discussed below in Section 5.4 MONITORING AND REPORTING REQUIREMENTS. CAIR sources will be required, under the model rule, to demonstrate compliance through the installation and operation of continuous emissions monitoring systems as required under 40 CFR Part 75.

5.4 MONITORING AND REPORTING REQUIREMENTS

(This section has not been changed. It has been included in the current CAIR SIP revision proposal for convenience.)

40 CFR § 51.123(I) requires that the state provide for monitoring the status of compliance with any control measures. To satisfy this requirement, the commission has incorporated by reference in §101.502 the obligations in 40 CFR Part 96, Subparts HH and HHH that require CAIR NO_x and CAIR SO₂ sources to comply with the monitoring, recordkeeping, and reporting provisions of the model rule, as well as the applicable sections of 40 CFR Part 75, Subpart H. All affected sources will be required to monitor and report their emissions in accordance with 40 CFR Part 75. In addition, the model rule and 40 CFR Part 75 provide for certification of the monitoring systems to ensure accurate representation of emissions. Sources with monitoring systems already certified under 40 CFR Part 75 will not be required to recertify those same monitoring systems. However, owners or operators of CAIR subject units that have previously approved alternative monitoring petitions under 40 CFR Part 75 will need to resubmit the petitions to the EPA in accordance with 40 CFR § 96.171(c) and § 96.271(c). Source information management, emissions data reporting, and allowance trading will be accomplished using on-line systems similar to those currently used for the Title IV Acid Rain and NO_x SIP Call programs.

CHAPTER 6: FUTURE ATTAINMENT PLANS

The United States Environmental Protection Agency (EPA) is currently in the process of revising the Clean Air Interstate Rule (CAIR) to address the decisions of the United States Court of Appeals District of Columbia Circuit (Appeals Court). The July 11, 2008, Appeals Court opinion (No. 05-1244) vacated CAIR and the CAIR Federal Implementation Plan (FIP) and remanded it back to the EPA in its entirety. However, on December 23, 2008, the Appeals Court issued a revised opinion to remand, without vacating, CAIR to the EPA. Therefore, CAIR will remain in effect while the EPA analyzes data and conducts rulemaking to modify the program to comply with the Appeal's Court July 2008 opinion. The Appeals Court declined to impose a schedule by which the EPA must complete the rulemaking, but reminded the EPA that the Appeals Court does “. . . not intend to grant an indefinite stay of the effectiveness of this Court's decision.”