FINAL

Revision to the North Carolina State Implementation Plan

Demonstration that North Carolina Complies with the "Good Neighbor" Requirements of Clean Air Act Section 110(a)(2)(D)(i)(I) for the 2010 1-Hour Nitrogen Dioxide National Ambient Air Quality Standard

Prepared by

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Preface: This revision to the North Carolina State Implementation Plan (SIP) for the 2010 1-Hour Nitrogen Dioxide standard provides information related to infrastructure requirements for interstate transport or the “good neighbor” provision of Clean Air Act Section 110(a)(2)(D)(i)(I).

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1.0 Interstate Pollution Transport (Good Neighbor) Provision

Sections 110(a)(1) and (2) of the Clean Air Act (CAA) require all states to adopt and submit to the U. S. Environmental Protection Agency (EPA) any revisions to their infrastructure State Implementation Plans (SIP) which provide for the implementation, maintenance and enforcement of a new or revised national ambient air quality standard (NAAQS). The EPA revised the nitrogen dioxide (NO_2) NAAQS on January 22, 2010 by adopting a new 1-hour primary standard of 100 parts per billion (ppb), measured as a three-year average of the 98th percentile concentration. The EPA made no changes to the existing annual standard of 53 ppb that was originally promulgated in 1971. On January 20, 2012, the EPA designated all areas of the country, including North Carolina, as "unclassifiable/attainment" for the 2010 NO_2 NAAQS. The North Carolina Department of Environmental Quality, Division of Air Quality (DAQ) subsequently submitted North Carolina's infrastructure SIP certification on August 23, 2013.

This document serves as a revision to the North Carolina infrastructure SIP to certify compliance with Section 110(a)(2)(D)(i)(I) of the CAA. Section 110(a)(2)(D)(i)(I) of the CAA requires that North Carolina's SIP for the 2010 NO_2 NAAQS shall-

> *"(D) contain adequate provisions –*
>
> *(i) prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will -*
>
> *(I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard*

Section 110(a)(2)(D)(i)(I) of the CAA requires each state to prohibit emissions that will significantly contribute to nonattainment of a NAAQS, or interfere with maintenance of a NAAQS, in a downwind state. North Carolina's August 23, 2013 infrastructure certification was based on the information available to the states and guidance given by the EPA. Specifically, it relied on the August 21, 2012 decision by the U.S. Court of Appeals for the District of Columbia Circuit that vacated the 2011 Cross-State Air Pollution Rule (CSAPR) and clarified that only the EPA can determine "significant contribution" and that "a SIP cannot be deemed to lack a required submission or be deemed deficient for failing to implement the good neighbor obligation until after the EPA has defined the state's good neighbor obligation."[1] In addition, the November 19, 2012 EPA memo from Gina McCarthy, Assistant Administrator, cited the court decision that "a SIP cannot be deemed deficient for failing to meet the good neighbor obligation before EPA quantifies the obligation."

However, on April 29, 2014 the U.S. Supreme Court reversed the D.C. Circuit Court ruling, and held that (i) the plain text of the CAA allowed the states in the first instance to determine whether and to what extent their interstate emissions were unlawful and, where a state failed to do so, EPA could impose a Federal Implementation Plan, (ii) EPA's calculation of the states'

[1] EME Homer City Generation, L.P. b. USEPA, No. 11-1302 (2012).

interstate contributions to downwind nonattainment was a permissible construction of the CAA, and (iii) the CAA did not prohibit EPA from considering the cost of emission controls when determining the appropriate level of reductions. The Supreme Court further clarified CAA Section 110(a)(2)(D)(i)(I) and held that despite the lack of EPA guidance, states are required to meet their good neighbor requirements in a timely manner.[2]

In accordance with the U.S. Supreme Court's decision, the DAQ reviewed the most recent three years of monitoring data for North Carolina and its neighboring states as well as statewide trends in NOx emissions. The results of the DAQ's review is presented in this SIP revision which demonstrates that North Carolina does not contribute significantly to downwind NO_2 air quality problems in another state.

[2] EPA v. EME Homer City Generation, L.P. 134 S.Ct 1584, 1600-01 (2014).

2.0 North Carolina's Good Neighbor SIP Demonstration

2.1 Control Measures, Means, and Techniques

The following rules address additional control measures, means, and techniques that ensure that North Carolina is not interfering with attainment or maintenance of the 1-hour NO_2 NAAQS in a downwind state:

- 15A NCAC 2D .0400 *"Ambient Air Quality Standards"*
- 15A NCAC 2D .0500 *"Emission Control Standards"*
- 15A NCAC 2D .0600 *"Monitoring: Recordkeeping: Reporting"*
- 15A NCAC 2D .1000 *"Motor Vehicle Emission Control Standards"*
- 15A NCAC 2D .1200 *"Control of Emissions from Incinerators"*
- 15A NCAC 2D .1400 *"Nitrogen Oxides"*
- 15A NCAC 2D .1600 *"General Conformity"*
- 15A NCAC 2D .2000 *"Transportation Conformity"*
- 15A NCAC 2D .2200 *"Special Orders"*
- 15A NCAC 2D .2300 *"Banking Emission Reduction Credits"*
- 15A NCAC 2D .2600 *"Source Testing"*
- 15A NCAC 2Q .0500 *"Title V Procedures"*

- 2002 North Carolina Clean Smoke Stacks Act (CSA), Session Law 2002-4 (NCGS 143-215.107d)
  - On September 26, 2011, the nitrogen oxide (NOx) and sulfur dioxide (SO_2) emissions caps in the CSA became federally enforceable as part of North Carolina's SIP (76 FR 59250)
- Federal Implementation Plan - Cross State Air Pollution Rule (CSAPR)

Although North Carolina is not relying on CSAPR for maintaining compliance with the NO_2 NAAQS, CSAPR is a federally enforceable program that once fully implemented may yield residual NOx and SO_2 emissions reduction benefits. On April 29, 2014, the U.S. Supreme Court reversed the D.C. Circuit Court of Appeals' decision to vacate CSAPR. Following this ruling, on October 23, 2014 the D.C. Circuit granted the EPA's request to lift the CSAPR stay and toll the CSAPR compliance dates by three years. Beginning on January 1, 2015, NOx and SO_2 emissions levels under Phase I took effect. However, on July 28, 2015, the D.C. Circuit Court of Appeals issued a decision invalidating the EPA's 2014 ozone-season NOx budgets for North Carolina and 10 other states.[3] The Court remanded without vacatur to the EPA to reconsider the Phase II NOx budgets that may be too restrictive, but did not sustain other challenges to the rule. The EPA is addressing the Court remand to reconsider the ozone-season NOx emissions budgets for certain states including North Carolina in its proposed *Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS*.[4] North Carolina is on track to comply with the Phase I CSAPR requirements which are federally enforceable.

[3] EPA v. EME Homer City Generation, L.P. U.S. Court of Appeals for the D.C. Circuit, No. 11-1302 (July 28, 2015), http://www.epa.gov/airtransport/CSAPR/index.html.
[4] 80 FR 75706, December 3, 2015.

NCGS 143-215.107(a)(5), *Air quality standards and classifications*, provides the North Carolina Environmental Management Commission (EMC) with the statutory authority, "To develop and adopt emission control standards as in the judgment of the Commission may be necessary to prohibit, abate, or control air pollution commensurate with established air quality standards."

2.2 Review of Current NO_2 Monitoring Data

For the purpose of evaluating compliance with the good neighbor provisions, the DAQ examined the 1-hour NO_2 design values calculated from EPA-validated monitoring data collected from 2012 through 2014. For North Carolina and for the states surrounding North Carolina, the monitored design values are less than 50 percent of the 100 ppb 1-hour NO_2 standard (see Table 2-1). These data, along with the fact that the EPA has designated all areas of the country as "unclassifiable/attainment" for the standard, show that North Carolina does not contribute significantly to downwind NO_2 air quality problems in any state.

Table 2-1. Monitored 2010 1-Hour NO_2 NAAQS Design Values (ppb)

State	Location	2012-2014 Monitoring Data	
		Design Value	Percent of 100 ppb NO_2 NAAQS
NC	Forsyth County	41	41
GA	DeKalb County	49	49
TN	Sullivan County	49	49
VA	Charles County	43	43
SC		No Valid Data	No Valid Data

Source: EPA-validated design values in this table are taken from the EPA Air Trends website at: http://www3.epa.gov/airtrends/values.html; file "NO2_DesignValues_20122014_FINAL_08_06_15.xlsx; Tab Table 6b." The design values in this table reflect the highest design value recorded by a monitor in each state.

When the EPA established the 1-hour NAAQS in 2010, it also established a new NO_2 monitoring network to support the new standard. As a part of the new network, state and local agencies are required to establish near-road monitoring sites because on-road mobile sources can be major sources of NO_2 emissions in urban areas. These micro-scale near-road NO_2 monitoring stations are required in each core-based statistical area (CBSA) with a population of 500,000 or more persons and to be located near a major road with high average annual daily traffic (AADT) counts (i.e., to monitor a location of expected maximum hourly NO_2 concentrations). Stations in CBSAs with over 1,000,000 people were required to begin monitoring on January 1, 2014. To carry out this requirement, North Carolina established near-road monitors in two CBSAs with over 1,000,000 people: the Charlotte-Concord-Gastonia area and the Raleigh area. Monitoring started in January 2014 in the Raleigh area and July 2014 in the Charlotte area.

Table 2-2 provides a summary of the 2014 near-road monitoring data. These results show that monitored NO_2 concentrations are well below both the 1-hour and annual NO_2 standards and; therefore, emissions from mobile sources are highly unlikely to contribute to nonattainment, or interfere with maintenance, of the NO_2 NAAQS in a downwind state.

Table 2-2. Summary of Nitrogen Dioxide Concentrations at Near Road Monitoring Stations in North Carolina for 2014

CBSA	Start Date	98th percentile of 1-Hour Daily Maximums	Annual Average of all Hourly Values	2014 Percent Completeness
Charlotte	July 17, 2014	39.3 ppb	11.4 ppb	36%
Raleigh	Jan. 8, 2014	36.4 ppb	10.5 ppb	85%

Sources: Data downloaded from AQS Data Mart (http://www3.epa.gov/airdata/ad_maps.html) on Nov. 9, 2015. Files from which the data were obtained are the annual summary data files for Remount Road and Triple Oak Road: "annual_37_119_0045_2014" and "annual_37_183_0021_2014," respectively.

2.3 Trends in Nitrogen Oxide (NOx) Emissions

As shown in Figure 2-1 and Table 2-3, North Carolina's statewide annual NOx emissions have significantly declined since 1996 due to the state and federal programs. Based on the EPA's triennial emissions inventory data, from 1996 through 2011, NOx emissions have declined by about 50 percent. From 2011 through 2017, NOx emissions are estimated to decline by an additional 39 percent.

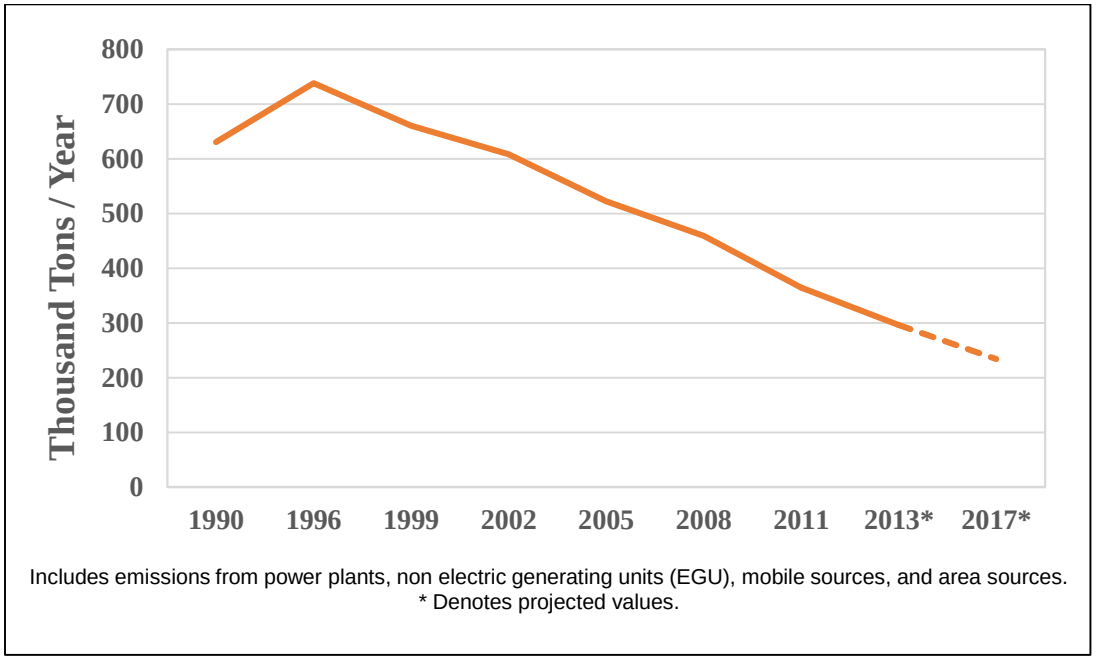

Figure 2-1. Trends in North Carolina's Statewide NOx Emissions.

Table 2-3. North Carolina Annual Statewide NOx Emissions (Thousand Tons per Year)

Pollutant	1990	1996	1999	2002	2005	2008	2011	2013	2017
NOx	631	739	660	609	523	459	365	296	234

Sources: For 1990 through 2008, emissions are from the EPA's National Emissions Inventory located at http://www.epa.gov/air-emissions-inventories.
For 2011, emissions are from the EPA's 2011 v6.2 modeling platform emissions summary, located at: ftp://ftp.epa.gov/EmisInventory/2011v6/v2platform/reports/2011eh_state_fullSCC_summary.xlsx.
For 2017, emissions are from the EPA's 2017 v6.2 modeling platform emissions summary, located at: ftp://ftp.epa.gov/EmisInventory/2011v6/v2platform/reports/2017eh_cb6v2_v6_11g_state_sector_totals.xlsx.

The NOx emissions values shown in Figure 2-1 and Table 2-3 for 1990 through 2011 and 2017 are based on EPA datasets. For 2013, emissions were estimated by the DAQ because EPA estimates were not readily available for 2013. For the EGU and non-EGU facilities in the 97 counties that report directly to the DAQ, annual emissions are based on the 2013 emissions reported by the facilities. For three local programs (Buncombe, Forsyth, and Mecklenburg), 2011 NEI emissions were adjusted to 2013 using the 2013-to-2011 NOx ratio of statewide EGU and statewide non-EGU annual emissions reported by facilities in the 97 counties. For the onroad, nonroad, and area source categories, the EPA's 2011 emissions modeling platform (EMP, version 2) emissions were adjusted to 2013 by using the 2013-to-2011 NOx ratio of emissions for each sector developed from 2011 and 2013 emissions modeled for the Charlotte maintenance area for the 2008 8-hour ozone standard. The 2013 estimates were checked for reasonableness against the EPA's 2017 EMP, version 2 emissions estimates.[5]

Figure 2-2 illustrates the annual NOx emissions inventory for 2002 and 2011 by sector. Statewide emissions have declined dramatically, particularly in the electricity generating and onroad sectors. Total NOx emissions declined by nearly 40 percent from 2002 to 2011.

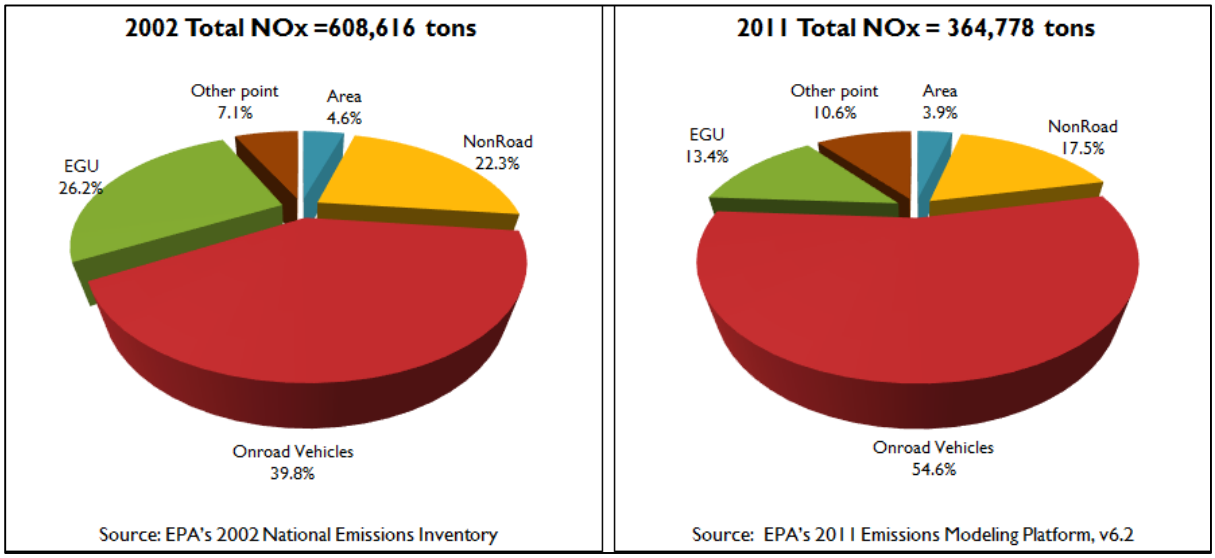

Figure 2-2. North Carolina NOx Emissions in 2002 and 2011.

Total NOx emissions from the electricity generating unit (EGU) sector have declined dramatically primarily due to North Carolina's 2002 landmark legislation called the CSA which set entity-wide caps on the total annual emissions of NOx and SO_2 from investor-owned coal-fired EGUs.[6] The CSA emissions limits were set at 56,000 tons/year for NOx by 2009 and thereafter and 130,000

[5] The Charlotte maintenance area for the 2008 8-hour standard includes all of Mecklenburg County and portions of Cabarrus, Gaston, Iredell, Lincoln, Rowan and Union Counties. See Table 1 (Counties and Townships within the Charlotte Nonattainment Area) in the *Redesignation Demonstration and Maintenance Plan for The Charlotte-Gastonia-Salisbury, North Carolina 2008 8-Hour Ozone Marginal Nonattainment Area*, April 16, 2015 located at: https://deq.nc.gov/about/divisions/air-quality/air-quality-planning/state-implementation-plans/charlotte-gastonia-salisbury-nc-2008-8-hour-ozone-area.

[6] Clean Smokestacks Act, 2002 N.C. Session Law 72 (codified as amended at N.C. General Statutes §§62-133.6 and in other sections of ch. 143, article 21B (2011).

tons/year for SO_2 by 2013 and thereafter. This means that, relative to 1999 levels, coal-fired EGUs must achieve a 77 percent reduction in NOx emissions and a 73 percent reduction in SO_2 emissions by 2013. These limits have been adopted into the North Carolina SIP and are federally enforceable.

An important feature of the CSA is that North Carolina's two largest utility companies, Duke Energy and Progress Energy (recently merged to form Duke Energy Progress), must achieve these cuts through actual reductions at their 14 EGU facilities in the state. By 2014, seven coal plants remained operating while four plants were converted to natural gas and three smaller plants were retired. The seven remaining coal plants are retrofitted with selective catalytic reduction (SCR) or selective non-catalytic reduction (SNCR) technologies for NOx control. SCR is the most efficient technology available to control NOx emissions and is in place at all but seven units. Table 2-4 summarizes the current emission controls at each of the seven operating coal plants.

Table 2-4. Current Air Pollution Controls at North Carolina's Coal Plants

Facility	Units	NOx Controls	SO2 Controls	PM2.5 Controls	Mercury Controls
GG Allen	1, 2, 3, 4, 5	SNCR	FGD	ESP/ Wet Scrubber	SCR/ESP/ Wet Scrubber
Asheville	1, 2	SCR			
Belews Creek	1, 2	SCR			
Cliffside	5	SCR			
	6			Fabric filter/ Wet scrubber	SCR/Spray dryer/ Fabric filter/Wet Scrubber
Marshall	1, 2, 3, 4	SCR/SNCR		ESP/ Wet Scrubber	SCR/ESP/ Wet Scrubber
Mayo	1A, 1B	SCR			
Roxboro	1, 2, 3, 4				
Total	21				

SCR: selective catalytic reduction
SNCR: selective non-catalytic reduction
FGD: flue gas desulfurization
ESP: electrostatic precipitation

The information in Table 2-3 does not reflect future actions that Duke Energy will be implementing at its GG Allen and Ashville plants that will significantly reduce NOx and SO_2 emissions. For the GG Allen plant, a consent decree agreement between the EPA and Duke Energy requires Duke Energy to meet a specified annual NOx emission rate and mass emissions limit for coal-fired units 1 and 2 and permanently shut down units 1, 2, and 3 by December 31,

2024.[7] In March 2016, the North Carolina Utilities Commission approved Duke Energy's application to invest approximately $1 billion in its Ashville plant to construct two 280-megawatt combined cycle natural gas-fired EGUs to replace, by 2020, two coal-fired EGUs with a combined generation capacity of 376 megawatts. The company plans to work with the City of Asheville, Buncombe County and surrounding communities to decrease energy use in the nine-county service area. Over the next seven years, Duke Energy plans to file an application with the North Carolina Utilities Commission for approval of a minimum of 15 megawatts of new solar generation and 5 megawatts of utility-scale electricity storage at its Ashville plant.[8]

As of calendar year 2014, statewide NOx emissions from the affected EGUs continue to be below the CSA limit. In 2014, annual NOx emissions were 34,847 tons, which is well below the 56,000 tons annual limit. Furthermore, EGU-related NOx emissions levels during the ozone season have been below the 2012 CSAPR emissions limit which was put on hold during the extended litigation period. North Carolina is well positioned to comply with the Phase I CSAPR limit which took effect on January 1, 2015. Note that although North Carolina is not relying on CSAPR for maintaining compliance with the NO_2 NAAQS, CSAPR is a federally enforceable program that once fully implemented may yield residual NOx emissions reduction benefits.

In addition to the early installation of emission control technologies, North Carolina's power plants are ahead of the nation in transitioning from coal to natural gas and renewable resources. Between the period of 2002 and 2012, electricity generation from coal plants declined from 62 percent to 45 percent; while the generation from natural gas increased from 2 percent to 15 percent. Figure 2-3 illustrates the resulting change in NOx emission levels from all fuel types within the electric utility sector. This trend is expected to continue into the future, with further reduction in coal capacity utilization. Figure 2-4 illustrates the current projected NOx emission levels for the major electric power plants in the state.

According to the EPA's emissions projections, emissions are expected to continue to decline through 2017 and beyond due to on-the-books national rules for onroad and nonroad mobile sources including the following:

Onroad

- Tier 3 Motor Vehicle Emission and Fuel Standards Program,
- Light-Duty Vehicle Tier 2 Rule,
- Heavy Duty Diesel Rule,
- Mobile Source Air Toxics Rule,
- Renewable Fuel Standard,
- Light-Duty Greenhouse Gas/Corporate Average Fuel Efficiency Standards for 2012-2016,
- Heavy-Duty Vehicle Greenhouse Gas Rule, and

[7] Consent decree between the United States of America on behalf of the US EPA and Duke Energy Corporation, Civil Action No.: 1:00 cv 1262, September 10, 2015, see http://www2.epa.gov/enforcement/duke-energy-corporation-clean-air-act-caa-settlement.

[8] Duke Energy (http://www.duke-energy.com/western-carolinas-modernization/#C0R0) and Electric Energy Online (http://www.electricenergyonline.com/detail_news.php?ID=566833&cat=;87;59&niveauAQ=0).

- 2017 and the Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards Rule.

Nonroad

- Clean Air Nonroad Diesel Final Rule - Tier 4
- Control of Emissions from Nonroad Large Spark-Ignition Engines, and Recreational Engines (Marine and Land-Based)
- Small Engine Spark Ignition ("Bond") Rule

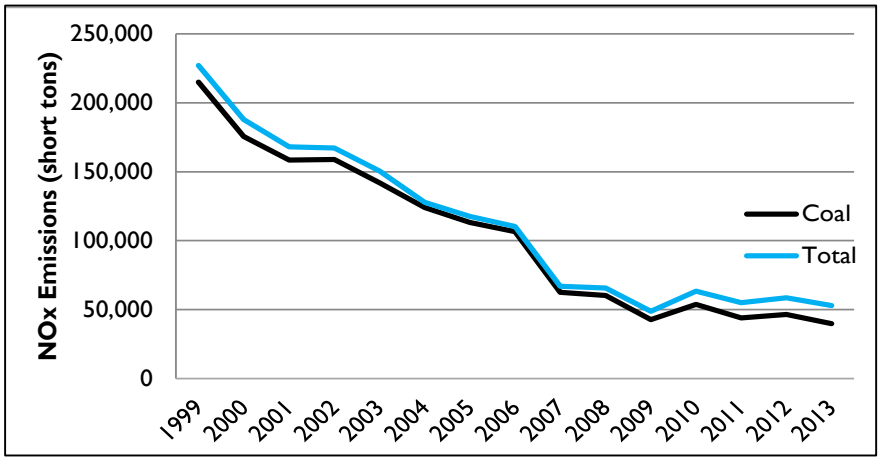

Figure 2-3. Power Plant Related Emission Trends (1999-2013).[9]

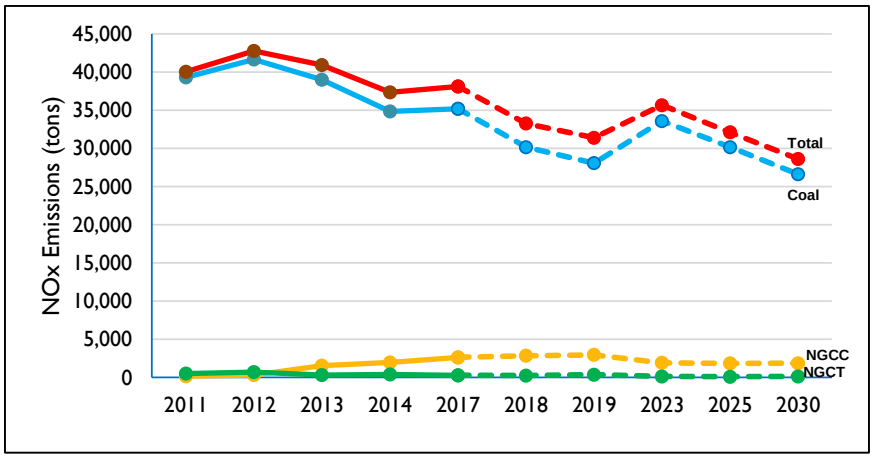

Figure 2-4. Projected Power Plant Related Emissions (2017-2030).

[9] US. Energy Information Administration, Energy Information Administration, State Electricity Profiles, See Table 7 (Electric power industry emissions estimates, 1990 through 2013) http://search.usa.gov/search?affiliate=eia.doe.gov&query=eia+electricity+state+north+carolina+xls+sept+07+il+xls, (accessed February 2015).

The DAQ believes that, in conjunction with the continued implementation of the state's ability to limit NOx emissions through North Carolina's CSA and federally enforceable emission limitations and other control measures, means, or techniques, low monitored values of NO_2 will continue in and around North Carolina. In other words, NO_2 emissions and NOx precursor emissions from North Carolina are not expected to cause or contribute to a violation or interfere with the maintenance of the 2010 1-hour NO_2 NAAQS in another state.

2.4 Interstate Transport Considerations

Because of the short-term form of the NO_2 standard, it is anticipated that a violation of the standard would be associated with local conditions near the emissions source(s) rather than caused by long-range transport of NOx emissions. This is supported by the following statement on pages 15 and 16 of the EPA's March 1, 2011 modeling guidance for the 1-hour NO_2 standard:

> "A general "rule of thumb" for estimating the distance to maximum 1-hour impact and the region of significant concentration gradients that may apply in relatively flat terrain is approximately 10 times the source release height. For example, the maximum impact area and region of significant concentration gradients associated with a 100 meter stack in flat terrain would be approximately 1,000 meters downwind of the source, with some variation depending on the source characteristics affecting plume rise. However, the potential influence of terrain on maximum 1-hour pollutant impacts may also significantly affect the location and magnitude of concentration gradients associated with a particular source. Even accounting for some terrain influences on the location and gradients of maximum 1-hour concentrations, these considerations suggest that the emphasis on determining which nearby sources to include in the modeling analysis should focus on the area within about 10 kilometers of the project location in most cases."[10]

The DAQ reviewed recent Prevention of Significant Deterioration (PSD) program modeling studies completed for one new EGU natural gas facility (NTE Energy) and a modification to an existing natural gas EGU facility (Duke Energy – Rockingham) in North Carolina. For these two facilities, PSD modeling using maximum allowable (i.e., worst-case) NOx emissions indicate that the maximum 1-hour NO_2 concentration of 98 ppb would be below the standard and would occur at about 8 kilometers from each facility. The PSD modeling performed for these facilities followed EPA's Tier 2 ambient ratio method that recommends use of 0.8 as the default NO_2/NOx ambient ratio for the hourly NO_2 standard.

For the Duke Energy – Rockingham modeling analysis, maximum allowable emissions were modeled for the facility as well as 14 other facilities within 50 kilometers of the Rockingham facility (including Duke Energy's Belews Creek coal plant).[11] Total maximum allowable annual

[10] Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 ,National Ambient Air Quality Standard, EPA Air Quality Modeling Group to Regional Air Division Directors, March 1, 2011, http://www3.epa.gov/ttn/scram/guidance/clarification/Additional_Clarifications_AppendixW_Hourly-NO2-NAAQS_FINAL_03-01-2011.pdf.

[11] Air Permit Application, Alternative Short Term NOx BACT Limit for Five Simple Cycle Turbines, Rockingham County Combustion Turbine Station, Permit No. 08731T13, Facility ID No. 7900156, Reidsville, North Carolina. Prepared by Duke Energy Carolinas, LLC by URS Corporation, December 2014.

emissions modeled for all 15 facilities combined were 103,020 tons. To place things in perspective, total actual NOx emissions in 2011 are 58,911 tons for all of North Carolina's EGUs combined, and 83,950 tons for all of North Carolina's stationary point sources combined. Thus, the total maximum allowable emissions modeled for this one facility are about 15 percent more than total statewide actual NOx emissions in 2011 for all of North Carolina's EGU and non-EGU point sources combined and yet the modeling showed attainment of the 1-hour NO_2 NAAQS.

The modeling guidance and the PSD studies support the conclusion that potential exceedances of the 1-hour standard would most likely be associated with local conditions and not associated with mid- or long-range transport of NOx emissions. The EPA has designated all areas of the country as "unclassifiable/attainment" for the 2010 1-hour NO_2 NAAQS, indicating that emissions from existing sources are not contributing to NO_2 nonattainment issues in any state in the nation. All NO_2 monitors in North Carolina and neighboring states are measuring ambient NO_2 concentrations below the 2010 NAAQS as shown earlier in Table 2-1. A future major new or major modification to an existing NOx emissions source will undergo close review through North Carolina's PSD program to identify and address any potential transport issues to ensure that North Carolina prohibits emissions that would significantly contribute to nonattainment or interfere with maintenance of the 1-hour NO_2 NAAQS in a downwind state.

2.5 Interstate Coordination

The DAQ enjoys a good, on-going working relationship with our counterparts in our border states (i.e., Virginia, South Carolina, Georgia and Tennessee). The DAQ also maintains good working relationships with other state, local and federal agencies by actively participating as a member of the Southeastern States Air Resource Managers (SESARM) and Mid-Atlantic Regional Air Management Association, Inc. (MARAMA) regional planning organizations. These relationships include sharing emissions data, modeling studies and other technical information to support multi-state air quality planning to ensure compliance and maintenance with the NAAQS. Should a state raise a concern with North Carolina emissions sources potentially affecting the state's ability to comply with the 1-hour NO_2 NAAQS, the DAQ would coordinate with the state to share information and technical analyses to determine the extent of contributions and to evaluate the need for emissions control measures, if required.

3.0 Concluding Remarks

Considering the monitoring data and downward trend in statewide NOx emissions previously discussed, we are concluding through this demonstration that North Carolina does not significantly contribute to 1-hour NO_2 issues in downwind states. This in large part is due to the significant strides North Carolina has achieved in reducing its NOx emissions over the past several years. Based on EPA's guidance contained in the January 22, 2015 memorandum, states shown to not contribute significantly to downwind air quality problems have no emission reduction obligation under the Good Neighbor Provision.[12] The DAQ concludes that North Carolina has met its Good Neighbor Provision under the CAA with respect to the 2010 1-hour NO_2 standard.

[12] USEPA January 22, 2015 memorandum, *Information on the Interstate Transport "Good Neighbor" Provision for the 2008 Ozone National Ambient Air Quality Standards under Clean Air Act Section 110(a)(2)(D)(i)(I)*.