Connecticut
Department of Energy &
Environmental Protection

DRAFT

Connecticut Department of Energy and Environmental Protection
Bureau of Air Management

Reasonably Available Control Measures and Reasonably Available Control Technology Analysis under the 2008 8-Hour Ozone National Ambient Air Quality Standard Reclassification to Severe Non-attainment for the Connecticut Portion of the New York-N. New Jersey- Long Island Non-attainment Area

1 August 2024

The Connecticut Department of Energy and Environmental Protection (DEEP) has prepared this Reasonably Available Control Measures (RACM) and Reasonably Available Control Technology (RACT) analysis to demonstrate that the state has met or commits to complete its RACM/RACT planning obligations under the Clean Air Act, as amended in 1990 (CAA), for the reclassification of the Connecticut portion of the New York-N. New Jersey- Long Island (NY-NJ-CT) non-attainment area to severe non-attainment for the 2008 ozone national ambient air quality standard (NAAQS).[1] DEEP's most recent RACT State Implementation Plan (SIP) was submitted on 23 May 2023 for the reclassification of the Greater Connecticut non-attainment area to moderate non-attainment for the 2015 ozone NAAQS.[2]

The U.S. Environmental Protection Agency (EPA) published a final Implementation Rule for the 2008 ozone NAAQS on 6 March 2015.[3] DEEP used the Implementation Rule and the Reclassification Rule, as well as earlier EPA guidance concerning RACT, as guides to make the determinations necessary to prepare this analysis. According to the Reclassification Rule, RACT measures should be implemented by 7 November 2025 to produce emissions reductions in the 2026 ozone season, the last of the three ozone seasons preceding the attainment date for the severe area of 20 July 2027. RACT addresses all volatile organic compound (VOC) sources covered by a control techniques guidelines (CTG) and all major non-CTG sources of nitrogen oxides (NOx) and VOCs. For the purposes of this analysis, any source that has the potential to emit at least 25 tons per year (tpy) of NOx or VOC is a major source.

I. Classification History

The current classification of severe non-attainment for the 2008 ozone NAAQS for the Connecticut portion of the NY-NJ-CT non-attainment area was preceded by a series of

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[1] *Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Areas Classified as Serious for the 2008 Ozone National Ambient Air Quality Standards*. 87 FR 194, 60926 (October 7, 2022) (the "Reclassification Rule").

[2] Air SIP Revisions Other State Plans for Control of Air Pollution (ct.gov).

[3] *Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements.* 80 FR 12264.

reclassifications from the original designation of marginal non-attainment on 20 July 2012.[4]

On 3 June 2016, the entire state was reclassified to moderate non-attainment because its two non-attainment areas did not attain the 2008 ozone NAAQS by the attainment date of 20 July 2015.[5] Both non-attainment areas were reclassified again for this standard to serious non-attainment on 23 September 2019 after failing to attain by the attainment date of 20 July 2018.[6] Effective 12 August 2020, EPA determined that the Greater Connecticut non-attainment area had monitored attainment of the 2008 ozone NAAQS in a Clean Data Determination.[7] On 7 October 2022, EPA determined the Greater Connecticut non-attainment area had attained the 2008 ozone NAAQS and determined that the NY-NJ-CT non-attainment area failed to attain the 2008 ozone NAAQS by the attainment date of 20 July 2021 and reclassified the NY-NJ-CT area to severe non-attainment effective 7 November 2022.[8]

II. Update on Federal, Regional, and State Efforts to Limit Ozone Precursor Emissions

Numerous control measures have been adopted in Connecticut, the region, and the nation, and yet Connecticut's ozone non-attainment persists, even as the number of exceedance days has reduced dramatically over time. *See* Figure 1. The number of ozone non-attainment areas in the Northeast and mid-Atlantic regions has also reduced over time, leaving the persistent non-attainment in the greater New York City area as an outlier. As new emission reductions continue to be implemented in the states that contribute to the NY-NJ-CT nonattainment area, modeling suggests that the NY-NJ-CT non-attainment area will reach attainment of the 2008 ozone NAAQS in the early 2030s, although such an event seems unlikely as of the July 20, 2027 attainment date.

RACT is focused on controls for major stationary sources of NOx or VOC and CTG sources. However, in-state stationary source emissions are an increasingly smaller percentage of Connecticut's emissions inventory. Table 1 is a summary of NOx emissions from all National Emissions Inventory (NEI) data categories – point, nonpoint, nonroad and on-road -- for the period 2002-2020 in Connecticut. NOx emissions have declined steadily in Connecticut from all sectors, particularly the point, nonroad and on-road. Despite decreases across all sectors, mobile source emissions (on-road and nonroad) make up the largest amount of NOx emissions in 2020. Available emissions reductions from stationary source are smaller than those from mobile sources, making them less consequential as a means to reduce ambient ozone levels. For example, Connecticut's major stationary sources emitted 3,394 tons of NOx in 2023, according

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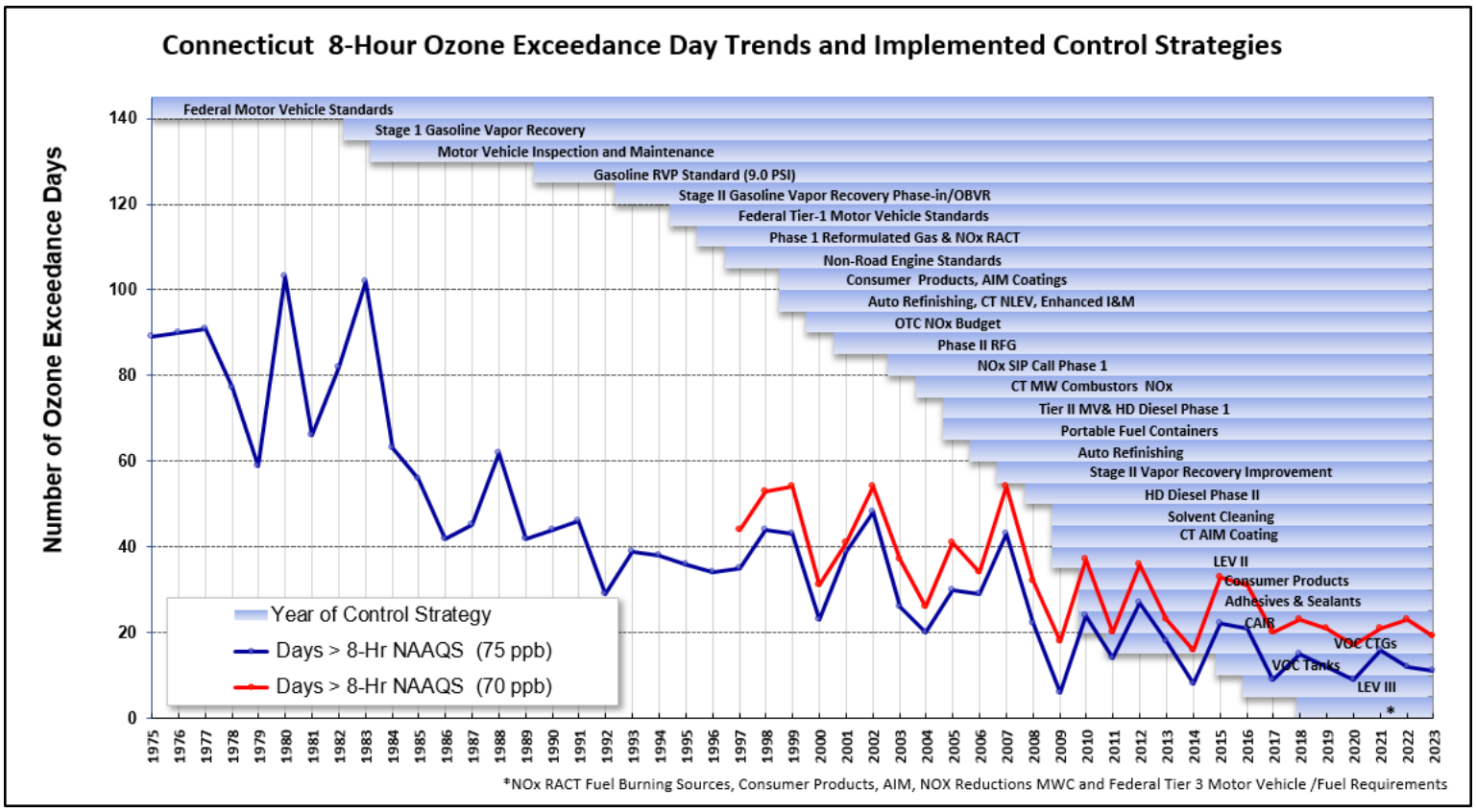
[4] *Air Quality Designations for the 2008 Ozone National Ambient Air Quality Standards*, 77 FR 30088 (May 21, 2012).
[5] *Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas for the 2008 Ozone National Ambient Air Quality Standards*, 81 FR 26697 (May 4, 2016).
[6] *Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Several Areas Classified as Moderate for the 2008 Ozone National Ambient Air Quality Standards*, 84 FR 44238 (August 23, 2019).
[7] *Air Plan Approval and Air Quality Designation; Connecticut; Determination of Clean Data for the 2008 8-Hour Ozone Standard for the Greater Connecticut Area*, 85 FR 41924 (July 13, 2020).
[8] *Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Areas Classified as Serious for the 2008 Ozone National Ambient Air Quality Standards*, 87 FR 60926 (October 7, 2022).

to Connecticut's 2023 emission statement reporting. Reported VOC emissions from major stationary sources were even lower at approximately 747 tons in 2023.

Figure 1. Connecticut 8-hour (70 pb and 75 ppb) ozone exceedance days trends and implemented control strategies.



Connecticut has few additional emissions reduction opportunities from in-state sources, increasing the importance of emissions reductions from federal measures for mobile sources and pollution transported from upwind states. While in-state reductions from point sources are necessary to satisfy RACT requirements, Connecticut's ability to attain and maintain the ozone NAAQS are largely dependent on EPA's efforts to limit transported emissions and reduce emissions from mobile sources. Recent federal and regional activity that impacts emissions of NOx and VOC during the 2024-2026 ozone seasons is summarized in this section.

Table 1. NOx Emissions in Connecticut for all NEI Data Categories, 2002-2020 (Tons)

NEI Category	**2002**	**2008**	**2011**	**2014**	**2017**	**2020**	**NOx Reduction (2002 – 2020)**	**Percent NOx Reduction (2002 – 2020)**
Air Markets Program Data (AMPD) Point	6,329	4,133	1,667	1,955	1,052	923	-5,406	-85%
Non-AMPD Point	7,702	4,447	4,737	4,614	4,174	4,319	-3,383	-44%
Nonpoint	15,189	17,045	16,719	15,119	13,709	12,882	-2,307	-15%
Nonroad	18,980	15,835	13,046	10,640	7,329	6,444	-12,536	-66%
Onroad	66,813	51,619	36,659	30,676	20,311	13,789	-53,024	-79%
Total	**115,012**	**93,080**	**72,828**	**63,003**	**46,575**	**38,357**	**-76,655**	**-67%**

A. Federal Efforts

On June 5, 2023, EPA finalized a Federal Implementation Plan ("the Good Neighbor FIP") to assure that the 26 states identified in the proposal do not significantly contribute to problems attaining and maintaining the 2015 ozone NAAQS in downwind states.[9] EPA asserts that this action will help states fully resolve their CAA "good neighbor" obligations for the 2015 ozone NAAQS. Although this rule targets attainment of the 2015 ozone NAAQS, any emissions reductions achieved in upwind states would also assist in Connecticut reaching attainment of the 2008 ozone NAAQS. However, the rule is currently being litigated and implementation has been delayed.

EPA received several petitions for reconsideration and associated requests for administrative stay on this rule. EPA partially denied four of these petitions on April 4, 2024.[10] In this notification of action, EPA stated that the four petitions provided no basis on which the Good Neighbor FIP should be modified or withdrawn. However, there are several remaining petitions for reconsideration of this rule which EPA has not yet addressed.

After EPA issued the Good Neighbor FIP, litigation over EPA's disapprovals of SIPs, which resulted in the applicability of the FIP to a state, continued. One court after another issued stays.[11] Each new stay meant another state in which the FIP did not apply.

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[9] *Federal ''Good Neighbor Plan'' for the 2015 Ozone National Ambient Air Quality Standards,* 88 FR 36654 (June 5, 2023).

[10] *Partial Denial of Petitions for Reconsideration: Federal ''Good Neighbor Plan'' for the 2015 Ozone National Ambient Air Quality Standards*, 89 FR 23526 (April 4, 2024).

[11] *See, e.g.*, Order in No. 23–60069 (CA5, June 8, 2023) (Mississippi); Order in No. 23–682 (CA9, July 3, 2023) (Nevada); Order in No. 23–1776 (CA8, July 5, 2023) (Minnesota); Order in No. 23–3216 (CA6, July 25, 2023) (Kentucky); Order in No. 23–9520 etc. (CA10, July 27, 2023) (Utah and Oklahoma); Order in No. 23–11173

A number of the remaining States and industry groups challenged the Good Neighbor FIP in the D.C. Circuit. After the D.C. Circuit denied their stay motions, these entities submitted a request for an emergency stay from the Supreme Court of the United States. On June 27, 2024, the Supreme Court ruled to enjoin EPA from enforcing the Good Neighbor FIP while litigation on the merits continues in the D.C. Circuit Court of Appeals. [12] Thus, Connecticut cannot expect to receive emissions reductions from the Good Neighbor FIP while the litigation continues.

EPA has proposed and finalized several recent rulemakings which will reduce emissions from the oil and natural gas industry. On March 8, 2024, EPA finalized several actions which will significantly reduce greenhouse gas (GHG) emissions and VOC emissions from new, modified, and reconstructed facilities and establish new limits for currently unregulated facilities.[13] EPA also finalized a rule on February 29, 2024 amending two National Emissions Standards for Hazardous Air Pollutants and adding one New Source Performance Standard (NSPS) which will reduce VOC emissions from storage vessels and loading operations.[14] On October 4, 2023, EPA proposed a new NSPS to reduce emissions from volatile organic liquid petroleum storage vessels.[15] While these rules will not create significant in-state reductions in ozone precursors, when implemented, these rules will reduce emissions of VOCs in upwind states and assist in reducing ozone transport to Connecticut.

On 23 January 2024, EPA proposed amendments to the NSPS and Emission Guidelines (EG) for large municipal waste combustor (MWC) units.[16] This rule proposes to significantly reduce NOx emission limits for both new and existing sources. Although the proposed compliance dates in this rule would not provide NOx reductions within the 2024-2026 timeframe, this rule will result in significant NOx emissions reductions if implemented.

For mobile sources, EPA has finalized more stringent emission standards for various types of vehicles which will reduce NOx emissions.[17] EPA has also issued two waivers of preemption under Section 209(b) of the CAA for the Heavy-Duty Vehicle and Engine Emission Warranty Regulations and Maintenance Provisions, the Advanced Clean Trucks Regulation, the Zero

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(CA11, Aug. 17, 2023) (Alabama); see also Order in No. 23–1418 (CA4, Aug. 10, 2023) (West Virginia, pending oral argument on preliminary motions to stay and to transfer); Order in No. 23–1418 (CA4, Jan. 10, 2024) (West Virginia, after oral argument and pending merits review of petition).

[12] Ohio v. EPA, 603 U.S.__ (2024). EPA filed a motion for expedited briefing and consolidation of cases with the D.C. Court of Appeals.

[13] *Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review*, 89 FR 16820 (March 8, 2024). The implementation of the state plan requirements occurs well after the 2026 ozone season.

[14] *National Emission Standards for Hazardous Air Pollutants: Gasoline Distribution Technology Reviews and New Source Performance Standards Review for Bulk Gasoline Terminals*. 89 FR 39304 (8 May 2024).

[15] *New Source Performance Standards Review for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)*, 88 FR 68535 (October 4, 2023).

[16] *Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Large Municipal Waste Combustors Voluntary Remand Response and 5- Year Review*, 89 FR 4243 (January 23, 2024).

[17] *Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards*, 88 FR 4296 (January 24, 2023); *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles*, 89 FR 27842 (April 18, 2024); *Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles-Phase 3*, 89 FR 29440 (April 22, 2024).

Emission Airport Shuttle Regulation, and the Zero-Emission Power Train Certification Regulation in California[18] and is currently considering issuing a third waiver for the Omnibus Low NOx Regulation in California.[19]

Although the timing of the described federal measures is such that they will have little impact on measured ozone levels in Connecticut in the 2024-2026 ozone seasons, they promise emissions reductions that may assist Connecticut in eventually attaining the 2008 and 2015 ozone NAAQS.

B. Regional Efforts

Connecticut participates in the Ozone Transport Commission (OTC). In its most recent significant action, in 2022 OTC issued a report on MWC emissions demonstrating that additional NOx controls are technically feasible and cost effective for many units in the Ozone Transport Region. The member states entered into a memorandum of understanding in June 2022 agreeing to work together to pursue additional NOx reductions from MWCs in the region.

DEEP also participates in two Northeast States for Coordinated Air Use Management (NESCAUM) workgroups related to emissions from buildings: the Building Electrification Initiative Task Force (BEI Task Force) and the Equipment Emissions Standards Cohort (EESC), which is a subset of the BEI Task Force. The BEI Task Force is a multi-state group focused on planning and information sharing for states on building electrification topics. The BEI Task Force developed a memorandum of understanding committing to accelerate the adoption of heat pump technology in residential buildings. On February 7, 2024, 9 states, 6 of which are part of the Ozone Transport Region, signed this memorandum of understanding. This agreement sets a target for heat pumps to make up 65% of residential space heating and cooling and water heating shipments by 2030 and 90% by 2040 across the participating states. To implement this agreement, the BEI Task Force is developing an action plan informed by information shared within the BEI Task Force, environmental justice considerations from the Environmental Justice Advisory Group, and stakeholder engagement through the development of a Stakeholder Advisory Group. The EESC is developing a model rule for states to adopt regarding the regulation of GHG emissions from space and water heaters. Although Connecticut is not a signatory state on this memorandum of understanding and DEEP is not currently pursuing adoption of the model rule when finalized, the regional NOx reductions anticipated to result from this agreement and rule implementation in other states will assist in progress toward ozone attainment in Connecticut. DEEP is instead pursuing the implementation of heat pump technology in residential buildings through its recently funded Climate Pollution Reduction Grant, The New England Heat Pump Accelerator.[20]

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[18] *California State Motor Vehicle and Engine Pollution Control Standards; Heavy-Duty Vehicle and Engine Emission Warranty and Maintenance Provisions; Advanced Clean Trucks; Zero Emission Airport Shuttle; Zero-Emission Power Train Certification; Waiver of Preemption; Notice of Decision*, 88 FR 20688 (April 6, 2023).

[19] *California State Motor Vehicle Pollution Control Standards and Nonroad Engine Pollution Control Standards; The ''Omnibus'' Low NOx Regulation; Request for Waivers of Preemption; Opportunity for Public Hearing and Public Comment*, 87 FR 35768 (June 13, 2022).

[20] States of Connecticut, Maine, Massachusetts, New Hampshire, and Rhode Island, EPA (July 22, 2024). https://www.epa.gov/inflation-reduction-act/states-connecticut-maine-massachusetts-new-hampshire-and-rhode-island.

C. Connecticut's Efforts Including RACM

This section provides a discussion of RACM for attainment of the reclassification of the Connecticut portion of the NY-NJ-CT non-attainment area to severe non-attainment for the 2008 ozone NAAQS. A RACM analysis includes point, area and mobile source measures. Measures that are considered RACM are readily implemented, economically feasible, technically feasible and advance the attainment date or are necessary for reasonable further progress. A subset of RACM are RACT measures, which are the NOx and VOC measures that implement a RACT level of control on a stationary source or stationary source category. RACT is limited to VOC sources subject to a CTG and sources that emit NOx or VOC at levels above the major source thresholds. RACT is an independent requirement from RACM and is analyzed later in this document.

To be considered RACM for this analysis, a measure must produce emissions reductions in 2024-2026 ozone seasons. For this timeframe, Connecticut has adopted or commits to adopt all reasonable measures to reach attainment as expeditiously as may be practicable. No additional reasonably available measures alone or in conjunction with measures now implemented or scheduled for implementation would advance the attainment date for a minimum of one year.

Stationary Sources

Aside from the measure identified as RACT of Section IV of this document, no additional measures could reasonably be adopted in the time allowed for the implementation of measures for the reclassification to severe non-attainment for the Southwest Connecticut non-attainment area for the 2008 ozone NAAQS.

Mobile Sources

This portion of the RACM analysis updates the mobile source measures beyond transportation control measures identified in the most recent RACM submission of May 2023 for the reclassification to moderate non-attainment for the Greater Connecticut area for the 2015 ozone NAAQS. The identified measures are not limited to a single non-attainment area as DEEP implements its programs statewide.

The programs listed below will result in more electric and lower emission vehicles being driven in Connecticut. While some of these programs are aimed at achieving the state's GHG reduction goals,[21] the programs will yield reductions in NOx and/or VOC emissions and thus will assist in attaining the 2008 ozone NAAQS as expeditiously as possible. However, the listed measures are not sufficient to advance the attainment date for the Connecticut portion of the NY-NJ-CT non-attainment area by one year. The cost per ton for many of the mobile source measures is high, but such measures are considered feasible given the availability of public funding. These emissions reductions in the 2024-2026 period will be used to determine attainment by the attainment date of July 20, 2027. DEEP is not aware of additional technically and economically feasible mobile source measures, which may be implemented in time to be considered RACM for the 2008 ozone NAAQS.

[21] Connecticut General Statutes Sec. 22a-200a. Reduction of greenhouse gas emissions: Mandated levels.

- **VW Settlement**. Approximately $6 million has been awarded in grants to expand access to the Electric Vehicle Supply Equipment Program. The fifty-five projects selected for funding under this funding cycle, over their lifetime, will cost-effectively reduce 2,760 tons of NOx emissions from environmental justice communities and other areas of Connecticut that bear a disproportionate share of air pollution. The award letters for these projects were sent out at the end of June 2023, and the projects must be finished by 30 June 2025.
- **Diesel Emission Reduction Act (DERA) Grants**. The DERA program is designed to achieve reductions in diesel emissions. The total of all projects awarded under the 2021-2022 Connecticut DERA Grant program is expected to yield lifetime NOx reductions of 164.19 tons. Much of the new equipment purchased with 2021-2022 funds will be in service in the 2024 ozone season.
- **Connecticut Hydrogen and Electric Automobile Purchase Rebate (CHEAPR)**. CHEAPR is a statutory incentive program, which provides a payment to a Connecticut resident who purchases or leases a new eligible battery electric, plug-in hybrid electric, or fuel cell electric vehicle. The program began providing incentives in May 2015. An expanded version of the CHEAPR program began 29 March 2023, which provides rebates for new and used eligible vehicles and will soon include light-duty fleets. From May 2015 through January 19, 2024, the program issued 13,411 total rebates of which 5,348 were plug-in hybrid electric vehicles and 8,063 were highway capable electric vehicles. Additionally, on June 28, 2023, CHEAPR expanded to include an Electric Bicycle (eBike) Incentive Program which provides vouchers for the purchase of eligible eBikes at participating Connecticut based eBike retailers. Throughout the first round of the eBike Incentive Program, there were 468 total vouchers approved and 422 total vouchers redeemed.
- **Charging and Fueling Infrastructure Grant**. DEEP applied for and received a U.S. Department of Transportation grant for $13 million to install 92 direct current fast chargers and 8 level 2 EV chargers in seven towns around Connecticut. This grant is expected to be executed during the 2024-2026 timeframe.
- **Clean School Buses**. Public Act 22-25 mandated that all school buses in environmental justice neighborhoods transition to electric buses by 2030, and all school buses in Connecticut by 2035. To support this effort, DEEP has been allocated $20 million to help support school districts to apply for additional funding from EPA. To date, Connecticut towns have been approved for 75 electric buses which are expected to be operational in the next two years.
- **Inspection and Maintenance Improvements**. In the last two years, DEEP has worked with the Connecticut Department of Motor Vehicles to improve the Connecticut Inspection and Maintenance Program. Program improvements include the implementation of online Certified Testing Inspector training and exams, planning to train students in the Automotive Program at Connecticut Vocational Schools to become Certified Testing Inspectors, and increased oversight and monitoring of the program.

While the emissions reductions in the design value years of 2024-2026 from the projects listed above are minimal, no reasonable controls have been excluded. Because of the overwhelming influence of transported emissions, no additional feasible controls on in-state sources will advance attainment by one year. The listed efforts are working to reduce the pool of ozone

precursors and will continue to produce emissions reductions throughout the lifetimes of the projects, which will assist Connecticut in eventually resolving its ozone non-attainment.

D. GHG Reduction Efforts and Ozone Co-Benefits

Recent efforts by EPA and states upwind to Connecticut to reduce GHGs have had the co-benefit of reducing NOx and VOC, the precursors to ozone, and therefore reducing the transport of ozone from upwind states to Connecticut.

On May 9, 2024, EPA finalized standards of performance for GHG emissions from new and existing fossil fuel-fired electric generating units (EGUs) and repealed the Affordable Clean Energy Rule.[22] Although the rule is currently being challenged by litigation,[23] if the rule is implemented, it will benefit Connecticut's ozone attainment issue. By reducing GHG emissions from fossil fuel-fired power plants in upwind states, Connecticut would receive less transported ozone due to the reduction in co-pollutants such as NOx and VOC, thus helping Connecticut reach attainment of the ozone standard.

At the regional level, the Regional Greenhouse Gas Initiative (RGGI) aims to reduces carbon dioxide (CO_2) emissions from fossil fuel-fired EGUs with a capacity of 25 megawatts (MW) or greater through a CO_2 budget trading program. Between 2008 and 2021, the nine founding states of RGGI –Connecticut, Delaware, Maine, Massachusetts, Maryland, New Hampshire, New York, Rhode Island, and Vermont– have reduced CO_2 emissions from power plants by nearly 50%.[24] CO_2 emissions will be further reduced as RGGI continues to regulate CO_2 emissions from EGUs.

In addition, many upwind states are in the process of procuring offshore wind projects, which will further reduce GHG emissions by replacing fossil-fuel derived energy with zero-emissions renewable energy. For example, the New York State Energy Research and Development Authority (NYSERDA) is currently solicitating proposals for new offshore wind projects to achieve New York's goal of developing 9,000 MW of offshore wind capacity by 2035.[25] New Jersey has procured 3,742 MW of offshore wind capacity to reach the state's goals of procuring 11,000 MW of offshore wind capacity by 2040 and achieving a 100% clean energy economy by 2035.[26] Maryland has procured 2022.5 MW of offshore wind capacity which is expected to be operational in 2026.[27] Similarly, upwind states are reducing GHG emissions by incentivizing the

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[22] *New Source Performance Standards for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule*, 89 FR 39798 (May 9, 2024).

[23] Balderson, T, Joint Resolution (May 9, 2024). https://balderson.house.gov/uploadedfiles/balderson_epa_cra_text_signed.pdf.

[24] Butterworth, B., Tamayo, P.A., and Boyd, A. (2023). *Regional Greenhouse Gas Initiative Findings and Recommendations for the Third Program Review*. Acadia Center. https://acadiacenter.wpenginepowered.com/wp-content/uploads/2023/04/AC_RGGI_2023_Layout_R6.pdf

[25] Offshore Wind Supportive Manufacturing and Logistics Request for Proposals. https://portal.nyserda.ny.gov/

[26] NJBPU Approves Over 3,700 MW of Offshore Wind Capacity in Combined Award. https://www.nj.gov/bpu/newsroom/2023/approved/20240124.html

[27] Offshore Wind Projects in Maryland. https://offshorewindmaryland.org/offshore-wind-projects-in-md/

purchase of zero-emission electric vehicles through state tax credits and rebates.[28] Through the GHG emissions reductions achieved by these programs in states upwind to Connecticut, co-benefits of NOx and VOC emissions reductions will be achieved, thus reducing ozone transport to Connecticut.

In addition to upwind efforts, Connecticut has implemented programs to reduce GHGs and recently received specific funding for such efforts. EPA's climate pollution reduction grant (CPRG) implementation grant program provides $5 billion in competitive grants to states, local governments, tribes, and territories to develop and implement ambitious plans for reducing GHG emissions and other harmful air pollution. DEEP submitted three CPRG implementation grant program applications in April of 2024 and was awarded funding for two of these applications on July 22, 2024.[29] The first selected application is the New England Heat Pump Accelerator, which is a coalition project with Massachusetts, Maine, New Hampshire, and Rhode Island, of which DEEP is the lead applicant. This project will leverage $450 million to rapidly accelerate the adoption of heat pump space and water heaters in residential buildings across the coalition region through the multi-state market. This project aims to install nearly 580,000 heat pumps and sets a target for heat pumps to make up 65% of residential space heating and cooling and water heating sales by 2030 and 90% by 2040.[30] The second selected application is the Clean Corridor Coalition, which is a coalition headed by the New Jersey Department of Environmental Protection and includes Connecticut, Delaware, and Maryland. This project will use the awarded $248.9 million of funding to support the deployment of electric vehicle charging infrastructure for commercial zero-emission vehicle traveling along the I-95 freight corridor from Connecticut to Maryland.

Connecticut has worked with EPA to develop an application of one of EPA's models to estimate the ozone benefits of GHG reduction efforts. During the winter of 2020, EPA's Office of Research and Development and EPA Region 1, along with the Joint Global Change Research Institute began a two-year collaboration with DEEP to use the GCAM (Global Change Analysis Model) Long-term Interactive Multi-Pollutant Scenario Evaluator (GLIMPSE) to analyze the co-benefit in criteria pollutant reductions of different GHG emission reduction efforts in Connecticut and states with major contributions to Connecticut's ozone levels. Some of the policies and programs included in the model are state Clean Energy Standards, RGGI, renewable portfolio standard targets, and CAA section 177 light-duty vehicle sales targets. The project team also explored ways to translate these emission changes into insights about ozone attainment. The modeling suggests that NOx emissions reductions yield ozone benefits starting before 2026 and increasing significantly thereafter. According to the modeling, the NOx reductions under these decarbonization scenarios could reduce ozone concentrations at Connecticut monitoring sites by an average of 7-11 ppb by 2032 relative to 2023, with reductions

[28] *See* Drive Electric in New York State, https://www.nyserda.ny.gov/All-Programs/ChargeNY/Drive-Electric; Incentives to Drive Green, https://dep.nj.gov/drivegreen/affordability-incentives/; Zero Emission Vehicles, https://mde.maryland.gov/programs/air/mobilesources/pages/zev.aspx; Delaware Laws and Incentives, https://afdc.energy.gov/laws/all?state=DE; Electric Vehicles in PA, https://www.dep.pa.gov/Business/Energy/OfficeofPollutionPrevention/ElectricVehicles/Pages/default.aspx.
[29] *See* https://www.epa.gov/inflation-reduction-act/general-competition-selected-applications-table.
[30] Note that these targets are the same as those in the memorandum of understanding developed by the BEI Task Force.

growing to nearly 15-20 ppb by 2050.[31] DEEP anticipates working to better estimate the ozone impacts of decarbonization efforts in a manner suitable for use in attainment planning.

III. RACT Analysis

This section sets out DEEP's analysis of its RACT requirements for CTG sources and major sources of NOx and VOC. Connecticut's current regulatory requirements accomplish a RACT level of control for both VOC and NOx. DEEP is exploring three regulatory improvements which may be considered RACT as each applies to either a CTG source or a major source of NOx. However, DEEP considers only one of the three regulatory improvements to be necessary now to maintain a RACT level of control for the 2008 ozone NAAQS reclassification to severe non-attainment for the Connecticut portion of the NY-NJ-CT non-attainment area.

DEEP has completed additional regulatory revisions which are necessary to apply RACT correctly for the 2008 ozone NAAQS reclassification to severe non-attainment for the Connecticut portion of the NY-NJ-CT non-attainment area. Such regulatory revisions were necessary to correct a difference in EPA and Connecticut's definitions of the Connecticut portion of the NY-NJ-CT non-attainment area. While these regulatory revisions do not involve control technology, the revisions do increase the number of sources subject to major source RACT and so serve as necessary regulatory infrastructure for the 2008 ozone NAAQS reclassification to severe non-attainment.

A. CTG Sources[32]

In the 2023 RACT SIP submission, DEEP included a table that listed current CTG documents and identified the corresponding regulations Connecticut adopted to achieve emissions reductions equivalent to the CTG documents. Since the submission of the 2023 RACT SIP, EPA has not published any new CTGs. The information submitted in 2023 has been reviewed and recertified as an accurate representation of the regulatory requirements that achieve CTG-equivalent reductions. That information is set out in Table 2 located at the end of this document.

Aboveground VOC Storage Tanks

Although the current regulatory requirements for aboveground storage tanks storing petroleum liquids are consistent with the corresponding CTGs as indicated in Table 2, DEEP has identified a potential new RACT requirement for aboveground storage tanks. While RCSA section 22a-174-20 currently disallows degassing events during the ozone season, it does not yet include requirements for the use of VOC control technology during degassing events. Degassing controls are already in place in several other states.[33] Some facilities in Connecticut have already voluntarily requested to use such controls during degassing events.[34] The already widespread use of VOC controls during degassing demonstrates that this technology is technically feasible. This is reinforced by EPA's proposal to adopt NSPS Subsection Kc, which proposes to use VOC

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[31] EPA Research Partner Support Stories | US EPA. See the "Air" tab, project 2.

[32] The approach used to review our requirements for emissions from CTG source categories is consistent with past practice. DEEP understands that EPA is currently finalizing revised guidance and may require additional information in the final submission.

[33] *See, e.g.*, NJ 7:27-16.2; ME Chapter 170; SJVAPCD Rule 4623; TX 115.54; 310 CMR 7.24;CO Regulation 7; CA Subarticle 13; SCAQMD Rule 1149.

[34] *See, e.g.*, Gulf Oil 117-0257-TV Minor Modification Application - Tank 112, in technical review.

controls at a 98% control efficiency during degassing events.[35] These controls have been demonstrated to be economically feasible as well. Cost estimates for the use of VOC controls during degassing range from $13,159 to $20,000 per ton of VOC removed.[36] Although these cost estimates are higher than typical VOC RACT in Connecticut, the cost of these controls would not be experienced annually, as degassing typically occurs once approximately every ten years. Furthermore, when the Maine Department of Environmental Protection developed their most recent amendment of 06-096 CMR chapter 170, which added VOC control requirements to tank degassing, they did not receive any comments regarding cost during the public comment period.[37] Because degassing controls are both technologically and economically feasible, DEEP is exploring a revision to RCSA section 22a-174-20 to require the use of a vapor control system rated at a minimum 95% efficiency until the organic vapor concentration is 5,000 parts per million by volume (ppmv) or less as methane or is 10 percent of the lower explosive limit (LEL), as methane, whichever is lower. This requirement would significantly reduce VOC emissions from degassing events, which are highly concentrated and occur over a short period of time. However, given the infrequency of degassing events and the resulting low annual emissions from degassing, the effort is unlikely to have an impact on monitored levels of ozone. Nonetheless, controls may serve to reduce local exposures to VOC and serve as an environmental justice effort in Connecticut, since many of the storage tanks are located in environmental justice communities. DEEP is also considering provisions to enhance monitoring for aboveground VOC storage tanks with the use of optical gas imaging as an alternative to Method 21.

However, the aboveground storage tank measure is unlikely to be completed and applied to sources in time to produce emissions reductions in the 2026 ozone season,[38] so we are not committing to it as RACT for this review. Given the environmental justice benefits of this action and EPA's recent actions to reclassify the state as serious non-attainment for the 2015 ozone NAAQS, DEEP is pursuing adoption of this measure.

Other Rules

Although not resulting from a CTG, DEEP has adopted several other regulations to limit VOC emissions. These regulations are based on model rules or recommendations of the OTC and include limitations on the VOC content of consumer products, architectural and industrial coatings and adhesives and sealants. These regulations provide VOC emission reductions that assist the state in attaining the ozone NAAQS but none of them are considered RACT measures as the regulations do not apply to distinct CTG source categories nor do they regulate major sources of VOC.

The OTC recommended measures also include a recommendation for cold cleaning, which is a CTG source category. For this category, DEEP has adopted a limit on the vapor pressure of

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[35] New Source Performance Standards Review for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels), 88 FR 68535 (October 4, 2023).

[36] *See* South Coast Air Quality Management District Final Staff Report: Proposed Amended Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing, Attachment F (April 2008); NSR Engineering Evaluation for Buckeye Terminals, Permit number 117-0384 (February 24, 2022).

[37] Personal communication via email.

[38] In addition to a lengthy regulation adoption timeline (12 months to complete a simple amendment), DEEP anticipates additional time to develop this measure to allow for outreach related to environmental justice.

solvents used in cold cleaning of 1.0 millimeters of mercury in RCSA section 22a-174-20(l), which makes the cold cleaning requirements more stringent than those of the CTG.

Connecticut also notes that the requirements for Stage I vapor control systems are more protective than those of the applicable CTG, which was published in 1975. Regulations of Connecticut State Agencies (RCSA) section 22a-174-30a includes a requirement for a CARB-approved pressure/vacuum vent valve, which is more stringent than the 1975 CTG or 40 CFR 63, subpart CCCCCC.

B. Major Non-CTG Sources of NOx and VOC

Under CAA section 182(b)(2)(C), states must adopt RACT for all major sources of VOC located in the non-attainment area, and CAA section 182(f) applies this requirement to NOx. As set out in the preamble to the proposed Reclassification Rule, areas classified as severe must adopt RACT for all sources in the non-attainment area that emit, or have the potential to emit, at least 25 tpy of VOC or NOx.[39] In the most recent RACT determination in 2023, DEEP examined control technologies for sources emitting 50 tpy or more. As a result, this review is required to focus on sources with the potential to emit between 25 and 50 tpy of VOC or NOx in the non-attainment area.

As DEEP has been applying a new source review permitting threshold of 25 tpy for NOx and VOC in part of the non-attainment area, at least a RACT level of control has been applied to sources in part of the non-attainment area for decades as DEEP retained by definition the non-attainment designations of severe and serious originally adopted for the 1979 1-hour ozone standard.[40] However, beginning with the area designations for the 1997 8-hour ozone NAAQS, when EPA expanded the size of the Connecticut portion of the NY-NJ-CT non-attainment area, the non-attainment area established in the Connecticut air quality regulations was smaller than the non-attainment area defined by EPA. At that time, DEEP's definition of "severe non-attainment area for ozone" included most of Fairfield County. However, the area that EPA defined as the severe non-attainment area, beginning with the 1997 ozone NAAQS, also includes the towns in New Haven and Middlesex Counties.

Expansion of the Severe Non-Attainment Area

As necessary regulatory infrastructure for RACT for the reclassification to severe non-attainment for the Connecticut portion of the NY-NJ-CT non-attainment area for the 2008 ozone NAAQS, DEEP expanded the definition of "severe non-attainment area for ozone" by forty-three towns to include all of towns EPA includes in the severe non-attainment area effective November 13, 2023.[41] This regulatory revision ensures that RACT requirements continue to be applied to the

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[39] *Determinations of Attainment by the Attainment Date, Extension of the Attainment Date and Reclassification of Areas Classified a Serious for the 2008 Ozone National Ambient Air Quality Standards*, proposed rule, 87 FR 21825 (13 April 2022).

[40] By definition in RCSA section 22a-174-1, the "severe non-attainment area for ozone" is the Connecticut portion of the NY-NJ-CT non-attainment area and the "serious non-attainment area for ozone" is the Greater Connecticut non-attainment area.

[41] *Air Plan Approval and Operating Permit Program Approval; Connecticut; Revision to Definitions. Final rule.* 89 FR 9771 (12 February 2024). "Severe non-attainment area for ozone" is defined in RCSA section 22a-174-1(106). "Serious non-attainment area for ozone" is defined in RCSA section 22a-174-1(105). eRegulations - Browse Regulations of Connecticut State Agencies These definitions apply to all sections of the air quality

correct set of sources within the state. This regulatory revision also furthers attainment by bringing new sources into major source status, whereby such sources are subject to more stringent emissions control requirements. [42] Even before this change in the definition of the severe non-attainment area was effective in Connecticut, sources with a potential to emit 25 tpy in the area designated by EPA as the severe non-attainment area were considered major sources and subject to new source review as of the effective date of the reclassification, November 7, 2022. In addition to the change to the definition of "severe non-attainment area for ozone," DEEP also added compliance timing requirements to RCSA section 22a-174-22e for the sources that would become subject to this regulation as a result of the change in the definition of non-attainment area.[43] RCSA section 22a-174-22e sets out NOx emission limits for fuel-burning equipment at major sources of NOx.

In sum, for the period since the reclassification to severe non-attainment became effective, new source review permitting has been applied in the severe non-attainment area to sources emitting or with the potential to emit 25 tons or more per year of NOx or VOC. Through the permitting process, individual sources may be subject to more stringent technology control measures than RACT including lowest achievable emissions rate (LAER), best available control technology (BACT) and maximum achievable control technology (MACT). LAER, applicable to new and modified major sources located in non-attainment areas, is the lowest achievable emission rate of the non-attainment pollutant that can be achieved by the source without respect to cost. BACT is applicable to new and modified sources located in attainment areas. BACT may be less stringent than LAER because consideration is given to energy, environmental and economic impacts, as well as other costs when evaluating the lowest emission rate. MACT is generally applicable to major sources of hazardous air pollutants. MACT is the control achieved by the best performing twelve percent of sources in a source group. For sources emitting volatile organic hazardous air pollutants subject to MACT, EPA has historically allowed states to rely on MACT standards for the purpose of showing that a source has met VOC RACT.[44] BACT and LAER determinations

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regulations including new source review permitting (RCSA section 22a-174-3a), Title V operating permits (RCSA section 22a-174-33), VOC limitations for various sources (RCSA section 22a-174-20), control of NOx emissions (RCSA section 22a-174-22e) and RACT for VOCs (RCSA section 22a-174-32). Connecticut also continues to include two towns in Litchfield County as part of the severe non-attainment area as an anti-backsliding measure, since those towns were included in the area that Connecticut originally defined as the severe non-attainment area for ozone.

[42] Connecticut's definition of "major stationary source" relies on the non-attainment area definitions: From RCSA section 22a-174-1:

> (65) "Major stationary source" means "major stationary source" as defined in 40 CFR 51.165(a)(1)(iv), provided that:
>
> (A) A stationary source that emits or has the potential to emit twenty-five (25) tons per year of volatile organic compounds or nitrogen oxides as an ozone precursor in any severe ozone non-attainment area is a "major stationary source;" and
>
> (B) A stationary source that emits or has the potential to emit fifty (50) tons per year of volatile organic compounds or nitrogen oxides as an ozone precursor in any serious ozone non-attainment area is a "major stationary source."

[43] The amendment was effective on 13 November 2023. The amendment was submitted to EPA as a SIP revision but has not yet been approved.

[44] *Implementation of the 2008 NAAQS for Ozone: State Implementation Plan Requirements.* 80 FR 12264 at 12279 (March 6, 2015). In the final Implementation Rule for the 2015 ozone NAAQS [83 FR 62998 at 63007 (December

are made prior to construction as part of the new source review (NSR) permitting process. Under the federal National Emissions Standards for Hazardous Air Pollutants, the requirement to implement MACT-based controls applies directly to owners of major sources of hazardous air pollutants.

Each of these control requirements, LAER, BACT and MACT, at the time of review, would necessarily be more stringent than RACT. These control requirements would also be applied at thresholds, at least in Connecticut, equal to the major source threshold required for this RACT analysis within the non-attainment area classified as severe.[45] As these controls are generally more stringent, it is unlikely that any source which has recently undergone one of these control technology reviews would not meet RACT. Furthermore, to the extent that a source has undergone one of these reviews, it is generally unlikely that the marginal reductions achievable through further control measures will be cost effective, unless existing control equipment may be optimized to meet a lower emission limit which has become RACT since the installation of the control equipment. Otherwise, only in cases where the technology review is significantly outdated and the source has sufficient actual emissions and useful life remaining, is it plausible that a reevaluation of RACT, the control measure with the least associated burden, will be warranted. In reviewing sources that emit or have the potential to emit NOx or VOC in amounts between 25 and 50 tpy in the severe non-attainment area, DEEP has identified the need for enhanced NOx control at the single MWC facility in the non-attainment area.

Table 3, located at the end of this document, lists the major sources of NOx and VOC located in Connecticut.[46] The list was obtained by reviewing the list of sources for which a Title V permit has been issued.[47] Although this analysis is focused on the Connecticut portion of the NY-NJ-CT non-attainment area, the list of sources in Table 3 is provided for the entire state. The threshold used to identify major sources of NOx or VOC in the severe non-attainment area is 25 tpy. In the Greater Connecticut non-attainment area, the threshold used to identify major sources of NOx or VOC is 50 tpy. Because the definition of "severe non-attainment area for ozone" was recently changed, the sources listed in Table 3 include one source in the severe non-attainment area for which a Title V permit application has been submitted, but the permit has not been issued.[48] Sources that operate under RCSA section 22a-174-33a or section 22a-174-33b are not included on the list because the potential emissions of sources subject to these regulations are

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6, 2018)], EPA states that "the final 2008 Ozone NAAQS SIP Requirements Rule provides an extensive discussion of the EPA's rationale and approach for how air agencies can provide for RACT in their non-attainment SIPs.

[45] By regulation in Connecticut, each source is located in either a serious or a severe ozone non-attainment area. *See*, RCSA section 22a-174-1, definitions of "serious non-attainment area for ozone" and "severe non-attainment area for ozone." As a result, major source thresholds for NOx and VOC are 50 and 25 tpy. See also the definition of "major stationary source" in RCSA section 22a-174-1. As indicated earlier in the text in this report, the size of the severe non-attainment was smaller than the area classified as such by EPA until the definition was revised effective November 13, 2023 to include all of towns that EPA includes in its severe non-attainment area. Historically, the difference from EPA's identification of the two non-attainment areas in Connecticut was important as long as the areas were classified as serious non-attainment or a lower classification.

[46] Although this analysis is focused on the Connecticut portion of the NY-NJ-CT non-attainment area, the list is provided for the entire state. Facilities outside of the severe non-attainment area are marked by an asterisk.

[47] A list of all active Title V permits is maintained on DEEP's website along with the associated NSR permits: Title V Operating Permit Program (ct.gov)

[48] SMM (Sims Metal) New England Corporation located in North Haven submitted a Title V operating permit application in November of 2023. The permit is currently in the technical review phase.

limited below 25 tpy in the NY-NJ-CT non-attainment area and 50 tpy in Greater Connecticut. In general, all major sources of NOx, with the exception of MWCs, are regulated under RCSA section 22a-174-22e while stationary sources of VOC are regulated by RCSA sections 22a-174-20 and 22a-174-32. RCSA section 22a-174-32 explicitly regulates major sources of VOC for the purpose of implementing RACT and allows DEEP to conduct individual RACT analyses for sources.[49]

Many of the sources listed in Table 3 are subject to a NSR permit and have therefore been required to implement BACT or LAER levels of control, as appropriate, at the time of determination. While some facilities listed in Table 3 include older equipment that is subject to a registration rather than a NSR permit, the principle RACT regulations -- RCSA sections 22a-174-20, -30a, -22e, -32, -38 -- apply to sources independent of permitting status, thus ensuring that each source in Table 3 is subject to a level of control that was RACT at the time the requirements were adopted. The control technologies available for controlling NOx and VOC have not changed substantially since the submission of the RACT SIP in 2023, with the exception of SNCR applied to MWCs.

Fuel-Burning Equipment

RCSA section 22a-174-22e for NOx emissions from fuel-burning equipment continues to satisfy RACT for the 2008 ozone NAAQS. The Phase 2 NOx standards of RCSA section 22a-174-22e, for which compliance began on June 1, 2023, are considered RACT until May 1, 2028, the date on which all compliance options and case-by-case emission limits expire.[50] DEEP has benchmarked the standards of RCSA section 22a-174-22e against those of other states. Most categories continue to compare favorably as set out in Table 4, located at the end of this document. While DEEP recognizes that some categories should be revised in the near future to ensure that the emissions limits do not become deficient with the passage of time, DEEP does not consider such changes to be necessary now for the major sources of NOx located in the Connecticut portion of the NY-NJ-CT non-attainment area and identified in Table 3 since those sources are controlled to a RACT level for the 2008 ozone NAAQS. DEEP intends to begin the regulatory adoption process now to revise the necessary emission limits so that such revised emissions limits may be effective before the May 1, 2028 expiration of the Phase 2 emission limits. The compliance date for the new limits will allow time for owners and operators to budget, plan, contract and construct any additional control equipment which may be necessary. Such updates to some of the source categories are necessary given the reclassification of the state to serious non-attainment for the 2015 ozone NAAQS.[51] The evaluation of standards and regulatory development will be performed with the assistance of a stakeholder workgroup and

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[49] DEEP is in the process of issuing a consent order to Algonquin Transmission, LLC to establish emission standards to satisfy RACT pursuant to RCSA section 22a-174-32(e)(1)(D) for the Cromwell facility. That consent order will be submitted to EPA as a SIP revision for review and approval.

[50] *See* RCSA section 22a-174-22e(g)(11), (h)(4), and (n)(10) and (11). The validity of the Phase 2 emission limits as RACT was verified during the development of the amendment to the rule effective November 13, 2023, which added provisions for new major sources of NOx created by the change in the definition of "severe non-attainment area for ozone."

[51] *Designations of Areas for Air Quality Planning Purposes; New York, New Jersey, Connecticut; New York-Northern New Jersey-Long Island, NY-NJ-CT 2015 8-Hour Ozone Nonattainment Area; Reclassification to Serious*. 89 FR 60314 (July 25, 2024). *Designations of Areas for Air Quality Purposes: Greater Connecticut 2015 8-Hour Ozone Nonattainment Area; Reclassification to Serious*. 89 FR 60827 (July 29, 2024).

will commence in 2024. Examples of possible reductions to NOx emissions limitations in RCSA section 22a-174-22e include:

- 0.10 lb/MMBtu to 0.08 lb/MMBtu for the gas-fired limit for a boiler serving an electric generating unit;
- 0.10 lb/MMBtu to 0.08 lb/MMBtu for the other oil-fired limit for industrial-commercial-institutional (ICI) boilers with a maximum rated capacity greater than or equal to 25 MMBtu/hr and less than 100 MMBtu/hr;
- 0.10 lb/MMBtu to 0.06 lb/MMBtu for the gas-fired limit for ICI boilers with a maximum rated capacity of greater than or equal to 100 MMBtu/hr; and
- 40 ppmvd to 25 ppmvd for the gas-fired limit and 50 ppmvd to 42 ppmvd for the oil-fired limit for simple cycle combustion turbines.

The evaluation will also address whether or not any new equipment types or source categories, such as equipment at gas transmission compressor stations, require specific emission limits.

Municipal waste combustors

Connecticut has four facilities that burn municipal waste. Together, these four facilities are the largest stationary sources of NOx in the state and account for more than half the NOx emissions of Connecticut's Title V source universe. The four MWC facilities are regulated by RCSA section 22a-174-38, which is based on EPA's emissions guidelines for MWCs promulgated under Sections 129 and 111(d) of the CAA.

RCSA section 22a-174-38 became effective on June 28, 1999 and has been revised on several occasions to reduce the NOx emission limits to create additional reductions in ozone precursors for the purpose of ozone attainment and to update the regulation to remain consistent with the federal emissions guidelines. The most recent significant amendment of RCSA section 22a-174-38, effective on August 2, 2016, reduced the NOx emission limits for the nine waterwall units at the four facilities to 150 ppmvd as a RACT measure.

DEEP recognizes that the existing NOx emissions limits for MWCs no longer represent RACT given the OTC MWC Report and the adoption of lower emissions limits for MWCs in other states in the region[52] based on advances in NOx control technologies for the sector.

[52] The Virginia Department of Environmental Quality has determined that Covanta's proprietary Low NOx technology is RACT for Covanta MWCs. The Covanta facilities in Virginia are permitted to emit 110 ppmvd of NOx on a 24-hour average basis @7% O2, and 90 ppmvd of NOx on an annual average basis @7% O2 (permits issued by the Commonwealth of Virginia and dated February 2019). In addition, the limits of 110 ppmvd @7% O2 on a daily average and 90 ppmvd @7% O2 on an annual average have been adopted into The Commonwealth of Virginia's SIP as RACT for the 2008 ozone NAAQS for both facilities (Submittal to EPA Region III for a SIP revision by the Commonwealth of Virginia entitled, "Statement of Legal and Factual Basis, Covanta Alexandria/Arlington, Permit No. NRO-RACT 71895," February 2019 and "Statement of Legal and Factual Basis, Covanta Fairfax, Permit No. NRO-RACT 71920," February 2019). Maryland also requires that municipal waste combustion facilities meet a NOx 30-day rolling average emission rate of 105 ppmvd @7% O2 beginning on May 1, 2020. (Md. Code Regs. 26.11.08.10 - NO[x] Requirements for Large Municipal Waste Combustors | State Regulations | US Law | LII / Legal Information Institute (cornell.edu)). Pennsylvania requires a presumptive RACT emission limitation of 110 ppmvd NOx @ 7% O2 (25 Pa. Code § 129.112. Presumptive RACT requirements, RACT emission limitations and petition for alternative compliance schedule. (pacodeandbulletin.gov)).

The OTC Report recommends two NOx emission limits as RACT for MWCs: 110 ppmvd on a 24-hour average basis and 105 ppmvd on a 30-day average basis. DEEP is pursuing an amendment to RCSA section 22a-174-38 to adopt such limits as a RACT measure. DEEP has met with the MWC operators to discuss the new limits and planned timing, which includes a preliminary schedule to pursue adoption of a regulatory amendment by November 2025.

IV. Conclusion

Connecticut's existing regulatory programs continue to apply a RACT level of control to major stationary sources of NOx and VOC and CTG sources in Connecticut, with the exception of the MWC combustor category, which DEEP is working to change so that the category is controlled to a RACT level. A number of characteristics of these regulatory programs contribute to the continued adequacy of Connecticut's requirements for the reclassification to severe non-attainment in the Connecticut portion of the NY-NJ-CT non-attainment area for the 2008 ozone NAAQS:

- Connecticut maintains a stringent control level given Connecticut's longstanding non-attainment designations from the 1979, 1997, 2008 and 2015 NAAQS. The RACT reviews associated with each standard and each reclassification continue to result in at least a RACT level of control since non-conforming emission limitations are rapidly identified and corrected. Such adjustments are in evidence with the planned changes to the MWC NOx emission limitations, which we are working to adopt in the required timeframe. DEEP is also moving forward to seek additional controls for aboveground storage tanks and for certain fuel-burning equipment at sources that emit above major source thresholds, although such efforts are not considered RACT for the current reclassification and are unlikely to be completed in the designated timeframe.
- Major source applicability thresholds for NOx and VOC have been historically maintained at 50 tpy except in portions of Fairfield and Litchfield counties where the threshold has been 25 tpy. Effective in November 2023, DEEP added 43 towns to its regulatory definition of "severe non-attainment area for ozone" so that all of the towns in Fairfield, New Haven and Middlesex Counties are subject to a major source threshold for NOx and VOC of 25 tpy.
- DEEP has adopted regulatory controls for every source category existing in the state for which a CTG has been issued. DEEP plans to adopt more stringent requirements than required in the applicable CTGs for storage of VOCs in aboveground storage tanks.
- DEEP continues to work with other OTC states to identify and develop additional opportunities to reduce emissions of NOx and VOC. DEEP participated in the OTC workgroup that produced the MWC Report. DEEP is exploring possible building electrification and appliance standards through work with regional workgroups.
- DEEP has implemented a number of GHG reduction strategies that produce ancillary reductions in NOx and VOC including vehicle electrification incentives, energy efficiency, participation in RGGI, clean energy goals and renewable portfolio standards.

Table 2. List of Issued CTGs and Connecticut Regulatory Requirements Corresponding to Each Listed CTG.

CTG Category	***CTG Document***	***Applicable Connecticut Regulation or Statute*** ***Regulations of Connecticut State Agencies (RCSA), unless otherwise noted***	***SIP Approval of Connecticut Regulation or Negative Declaration*** *Adopted by State/ Approved by EPA/ FR Cite/ 40 CFR 52.370 citation*	***Comments***
Aerospace	Aerospace (CTG & MACT) (see 59 FR 29216, June 6, 1994); CTG (Final), EPA-453/R-97-004, December 1997.	22a-174-32 Reasonably Available Control Technology (RACT) for volatile organic compounds. 22a-174-20(s) Miscellaneous Metal and Plastic Parts Coating	11/18/93 3/10/99 64 FR 12024 ..... (c)(76) 8/27/99 10/19/00 65 FR 62624 ..... (c)(84) 4/29/10 06/09/2014 79 FR 32873 (c)(103)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Automobile Coating	Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings (PDF 44 pp, 2.64MB) EPA 453/R-08-006-*2008/09* And Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations (PDF 129 pp, 450KB) EPA 453/R-08-002-2008/09	Not Applicable	Certification of no automobile and light duty truck assembly coating sources 40 CFR 52.375(b)(1), (g)(3), (h)(1)	Connecticut reaffirms that no sources meeting the description of this CTG category are operating within the State.
Cutback Asphalt	Control of Volatile Organic Compounds from Use of Cutback Asphalt, EPA-450/2-77-037, December 1977	*22a-174-20(k) Restrictions on cutback asphalt*	10/10/80 1/17/82 47 FR 762 ..... (c)(20) 12/13/84 7/18/85 50 FR 29229 ..... (c)(34) 10/31/89 10/18/91 56 FR 52205 ..... (c)(58) 12/29/2008; 8/22/12; 77 FR 50595; …(c)(100)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Dry Cleaning (Large Petroleum)	Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners, EPA-450/3-82-009, September 1982	Not Applicable	40 CFR § 52.375 (a), (b)(2), (h)(2) Certification of no large petroleum dry cleaner sources.	Connecticut reaffirms that no sources meeting the description of this CTG category are operating within the State.

CTG Category	***CTG Document***	***Applicable Connecticut Regulation or Statute*** ***Regulations of Connecticut State Agencies (RCSA), unless otherwise noted***	***SIP Approval of Connecticut Regulation or Negative Declaration*** *Adopted by State/ Approved by EPA/ FR Cite/ 40 CFR 52.370 citation*	***Comments***
Fabric Coating	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks, EPA-450/2-77-008, May 1977.	22a-174-20(o) Fabric and vinyl coating.	8/31/79 12/23/80 45 FR 84769 ..... (c)(11) 10/31/89 10/18/91 56 FR 52205 ..... (c)(58)	Regulatory requirements are consistent with the CTG and represent RACT under reclassification of the 2008 ozone NAAQS.
Fiberglass Boat Manufacturing	Control Techniques Guidelines for Fiberglass Boat Manufacturing Materials (PDF 41 pp, 336KB) EPA 453/R-08-004-*2008/09*	Not Applicable	*40 CFR 52.375(g)(2), (h)(2) Certification of no fiberglass boat manufacturing materials sources.*	Connecticut reaffirms that no sources meeting the description of this CTG category are operating within the State.
Flexible Package Printing	Control Techniques Guidelines for Flexible Package Printing (PDF 33 pp, 216KB) EPA-453/R-06-003-*2006/09*	22a-174-20(ff), Flexible package printing	4/06/10 6/9/14 79 FR 32873 (c)(102)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Bulk Gasoline Plants	Control of Volatile Organic Emissions from Bulk Gasoline Plants, EPA-450/2-77- 035, December 1977	22a-174-20(a) and (b) Loading of gasoline and other volatile organic compounds.	4/4/72 5/31/72 37 FR 23085 ..... (b). 8/31/79 12/23/80 45 FR 84769 ..... (c)(11) 10/10/80 2/17/82 47 FR 6827 ..... (c)(25) 4/1/98 10/19/00 65 FR 62624 ..... (c)(84) 9/24/83 3/21/84 49 FR 10542 ..... (c)(32) 12/13/84 7/18/85 50 FR 29229 ..... (c)(34) 10/31/89 10/18/91 56 FR 52205 ..... (c)(58) 4/1/98 10/19/00 65 FR 62624 ..... (c)(84) 07/08/2015 12/15/2017 82 FR 59519 (c)(117)	Regulatory requirements are consistent with the CTG, and DEEP is planning to amend the requirements to be more protective that the CTG.
Graphic Arts	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VIII:	22a-174-20(v) Graphic arts rotogravures and flexography.	10/10/80 2/17/82 47 FR 6827 ..... (c)(25)	Regulatory requirements are consistent with the CTG and represent RACT under

CTG Category	***CTG Document***	***Applicable Connecticut Regulation or Statute*** ***Regulations of Connecticut State Agencies (RCSA), unless otherwise noted***	***SIP Approval of Connecticut Regulation or Negative Declaration*** *Adopted by State/ Approved by EPA/ FR Cite/ 40 CFR 52.370 citation*	***Comments***
	Graphic Arts - Rotogravure and Flexography, EPA-450/2-78-033, December 1978.		10/31/89 10/18/91 56 FR 52205 ..... (c)(58) 11/18/93 3/10/99 64 FR 12024 ..... (c)(75) 8/1/95 10/19/00 65 FR 62624 ..... (c)(84)	the reclassification of the 2008 ozone NAAQS.
Industrial Adhesives	Control Techniques Guidelines for Miscellaneous Industrial Adhesives (PDF 47 pp, 350KB) EPA 453/R-08-005-*2008/09*	22a-174-44, Adhesives and sealants	11/18/08 6/9/14 79 FR 32873 (c)(103)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Large Appliances	Control Techniques Guidelines for Large Appliance Coatings (PDF 44 pp, 374KB) EPA 453/R-07-004-*2007/09*	22a-174-20(hh), Large appliance coatings	4/29/10 6/9/14 79 FR 32873 (c)(103)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Magnet Wire	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume IV: Surface Coating for Insulation of Magnet Wire, EPA-450/2-77-033, December 1977	22a-174-20(r) Wire coating.	8/31/79 12/23/80 45 FR 84769 ..... (c)(11) 10/31/89 10/18/91 56 FR 52205 ..... (c)(58)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Metal Coil, Container and Closure	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks, EPA-450/2-77-008, May 1977.	22a-174-20(m) Can coating; 22a-174-20(n) Coil coating.	8/31/79 12/23/80 45 FR 84769 ..... (c)(11) 10/31/89 10/18/91 56 FR 52205 ..... (c)(58)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Metal Furniture	Control Techniques Guidelines for Metal Furniture Coatings (PDF 100 pp, 293KB) EPA 453/R-07-005-*2007/09*	22a-174-20(p) Metal furniture coating.	8/31/79 12/23/80 45 FR 84769 ..... (c)(11) 10/31/89 10/18/91 56 FR 52205 ..... (c)(58) 4/29/10 6/9/14 79 FR 32873 (c)(102)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Metal & Plastic Parts Coating	Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings (PDF 143 pp, 897KB) EPA 453/R-08-003-*2008/09*	22a-174-20(s) Miscellaneous metal and plastic parts coating.	10/10/80 2/17/82 47 FR 6827 ..... (c) 25 10/31/89 10/18/91 56 FR 52205 ..... (c) 58	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.

CTG Category	***CTG Document***	***Applicable Connecticut Regulation or Statute*** ***Regulations of Connecticut State Agencies (RCSA), unless otherwise noted***	***SIP Approval of Connecticut Regulation or Negative Declaration*** *Adopted by State/ Approved by EPA/ FR Cite/ 40 CFR 52.370 citation*	***Comments***
		22a-174-20(k), Pleasure craft coating.	11/18/93 3/10/99 64 FR 12024 ..... (c)(75) 8/1/95 10/19/00 65 FR 62624 ..... (c)(84) 11/21/12 6/9/14 79 FR 32873 (c)(103)	
Natural Gas / Gasoline	Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants, EPA-450/2-83-007, December 1983.	Not Applicable .	40 CFR § 52.375(b)(4) and (h)(4) Certification of no Natural Gas/Gasoline Processing Plant sources.	Connecticut reaffirms that no sources meeting the description of this CTG category are operating within the State.
Oil and Natural Gas Industry	Control Techniques Guidelines for the Oil and Natural Gas Industry (343 pp, 1.6 MB) EPA-453/B-16-001 *2016/10*	Not Applicable	Negative declaration for sources from the oil and natural gas industry.	Connecticut reaffirms that no sources meeting the description of this CTG category are operating within the State.
Paper, Film & Foil	Control Techniques Guidelines for Paper, Film, and Foil Coatings (PDF 102 pp, 488KB) EPA 453/R-07-003-*2007/09*	22a-174-20(q) Paper, film and foil coating.	8/31/79 12/23/80 45 FR 84769 ..... (c)(11) 10/31/89 10/18/91 56 FR 52205 (c)(58) 4/29/10 6/9/14 79 FR 32873 (c)(103)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Pharmaceutical Products	Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products, 450/2-78-029, December 1978.	22a-174-20(t) Manufacture of synthesized pharmaceutical products.	10/10/80 2/17/82 47 FR 6827 ..... (c)(25) 10/31/89 10/18/91 56 FR 52205 ..... (c)(58)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Polyester Resin	Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins, EPA-450/3-83-008, November 1983 AND	22a-174-20(y) Manufacture of polystyrene resins.	2/2/87 5/19/88 53 FR 17934 ..... (c) 38 10/31/89 10/18/91 56 FR 52205 ..... (c) 58 AND 40 CFR § 52.375(d) Certification of no manufacturers of high-density polyethylene and polypropylene resins.	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.

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	Control of Volatile Organic Compound Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment, EPA-450/3-83-006, March 1984			
Printing Industries - offset lithographic and letterpress	Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing (PDF 52 pp, 349KB) EPA-453/R-06-002-*2006/09*	22a-174-20(gg), Offset lithographic printing and letterpress printing.	4/29/10 6/9/14 79 FR 32873 (c)(102)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Refineries	Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds, EPA-450/2-77-025, October 1977. AND Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment, EPA-450/2-78-036, June 1978.	22a-174-20(c) Volatile organic compound water separation.	40 CFR 52.375(b)(6), (h)(5), (h)(6), (h)(7) Certification of no petroleum refinery sources.	Connecticut reaffirms that no sources meeting the description of this CTG category are operating within the State.
Rubber Tires	Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires, EPA-450/2-78-030, December 1978.	22a-174-20(u) Manufacture of pneumatic rubber tires.	10/10/80 2/17/82 47 FR 6827 ..... (c) 25 10/31/89 10/18/91 56 FR 52205 ..... (c) 58	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2015 ozone NAAQS.
Service Stations	Design Criteria for Stage I Vapor Control Systems - Gasoline Service Stations, November 1975.	22a-174-30a Stage I vapor recovery. Connecticut General Statutes section 22a-174(e).	1/12/93 12/17/93 58 FR 65930 ..... (c)(62) 1/12/93 1/18/94 59 FR 2649 ..... (c)(62) 05/10/04 8/31/06 71 FR 51761 ..... (c)(95) 07/08/2015 12/15/2017 82 FR 59519 (c)(117)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Ships	Shipbuilding/repair ACT (EPA 453/R-94-032, April 1994) and CTG, see 61 FR 44050, August 27, 1996	22a-174-32 Reasonably Available Control Technology (RACT) for	11/18/93 3/10/99 64 FR 12024 ..... (c)(76) 8/27/99 10/19/00 65 FR 62624 ..... (c)(84)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.

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		volatile organic compounds.		
Solvent Cleaning	Control Techniques Guidelines for Industrial Cleaning Solvents (PDF 290 pp, 7.6MB) EPA-453/R-06-001-*2006/09*	22a-174-20(l) Metal cleaning. 22a-174-20(ii) Industrial solvent cleaning. 22a-174-20(jj) Spray application equipment cleaning.	8/31/79 12/23/80 45 FR 84769 ..... (c)(11) 10/10/80 6/7/82 47 FR 24452 ..... (c)(23) 12/10/82 2/1/84 49 FR 3989 ..... (c)(29) 9/24/83 2/1/84 49 FR 3989 ..... (c)(29) 9/24/83 3/21/84 49 FR 10542 ..... (c)(32) 8/31/79 3/21/84 49 FR 10542 ..... (c)(32) 10/31/89 10/18/91 56 FR 52205 ..... (c)(58) 8/23/96 10/19/00 65 FR 62624 ..... (c)(84) 07/26/07 8/22/12 77 FR 50595 ....(c)(100) 4/29/10 6/9/14 79 FR 32873 (c)(102)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.
Synthetic Organic Chemical	Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry, EPA-450/3-84-015, December 1984. AND SOCMI Distillation and Reactor Processes CTG (EPA 450/4-91-031, August 1993).	22a-174-20(x) Control of Volatile Organic Compound Leaks from Synthetic Organic Chemical & Polymer Manufacturing Equipment.	2/2/87 5/19/88 53 FR 17934 ..... (c)(38) 10/31/89 10/18/91 56 FR 52205 ..... (c)(58) 40 CFR § 52.375 (c) Certification of no Air Oxidation Processes/SOCMI.sources 40 CFR § 52.375(e) Certification of no sources of Synthetic Organic Chemical Manufacturing Industry (SOCMI) distillation.	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.

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			40 CFR § 52.375(f) Certification of no sources of Synthetic organic chemical manufacturing industry (SOCMI) reactor vessels	
Storage of Petroleum Liquid in Tanks	Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed Roof Tanks, EPA-450/2-77-036, December 1977 Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks, EPA-450/2-78-047, December 1978.	22a-174-20(a) Storage of volatile organic compounds and restrictions for the Reid Vapor Pressure of gasoline. 22a-174-20(c) Volatile organic compound water separation.	8/31/79 12/23/80 45 FR 84769 ...(c)(11) 9/24/83 3/21/84 49 FR 10542 .... (c)(32) 12/13/84 7/18/85 50 FR 29229 .. (c)(34) 12/30/88 6/2/89 54 FR 23650 .... (c)(50) 10/31/89 10/18/91 56 FR 52205 (c)(58) 03/05/2014 11/03/2015 80 FR 67642 (c)(110)	Regulatory requirements are consistent with the CTG, and DEEP is planning to amend the requirements to be more protective that the CTG.
Tank Trucks	Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals, EPA-450/2-77-026, December 1977. AND Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems, EPA-450/2-78-051, December 1978.	22a-174-20(b) Loading of gasoline and other volatile organic compounds.	8/31/79 12/23/80 45 FR 84769 ..... (c)(11) 9/24/83 3/21/84 49 FR 10542 ..... (c)(32) 12/13/84 7/18/85 50 FR 29229 ..... (c)(34) 10/31/89 10/18/91 56 FR 52205 ..... (c)(58) 4/1/98 10/19/00 65 FR 62624 ..... (c)(84) 07/08/2015 12/15/2017 82 FR 59519 (c)(117)	Regulatory requirements are consistent with the CTG, and DEEP is planning to amend the requirements to be more protective that the CTG.
Wood Coating	Control Techniques Guidelines for Flat Wood Paneling Coatings (PDF 27 pp, 212KB) EPA-453/R-06-004-*2006/09*	Not Applicable	40 CFR 52.375(b), (g)(1), (h)(8) Certification of no flatwood paneling coating sources.	Connecticut reaffirms that no sources meeting the description of this CTG category are operating within the State.

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Wood Furniture	Wood Furniture (CTG-MACT) - draft MACT out 5-94; Final CTG, EPA-453/R-96-007, April 1996; see also 61 FR 25223, and, 61 FR 50823, September 27, 1996.	22a-174-32 Reasonably Available Control Technology (RACT) for volatile organic compounds.	11/18/93 3/10/99 64 FR 12024 ..... (c)(76) 8/27/99 10/19/00 65 FR 62624 ..... (c)(84)	Regulatory requirements are consistent with the CTG and represent RACT under the reclassification of the 2008 ozone NAAQS.

Table 3. List of major sources of NOx and VOC located in Connecticut.

Major Sources of NOx	**Major Sources of NOx**	**Major Sources of VOC**	**Major Sources of VOC**	**Major Sources of VOC**	**Sources Subject to VOC RACT Orders**
Ahlstrom Power Windsor Locks, LLC*	Metropolitan District*	Ahlstrom Power Windsor Locks, LLC*	Lake Road Generating Company LLC*	US Navy Submarine Base*	Algonquin Gas Transmission Company, Cromwell
Algonquin Gas Transmission Company, Chaplin*	Middletown Power	Allnex USA, Inc. (formerly Cytec Industries, Inc.)	Metropolitan District*	Win Waste Bridgeport, L.P.	Algonquin Gas Transmission Company, Oxford
Algonquin Gas Transmission Company, Cromwell	Milford Power Co, LLC	Ametek Specialty Minerals Products Division	Middletown Power	Yale University Central/Science Campus	Hamilton Sundstrand Corporation*
Algonquin Gas Transmission Company, Oxford	Montville Power, LLC*	Bridgeport Energy LLC	Milford Power, LLC	Yale School of Medicine/Sterling Power Plant	Kimberly-Clark Corporation (New Milford Mill)
Bridgeport Energy LLC	Plainfield Renewable Energy, LLC*	CPV Towantic, LLC	New Haven Terminal (East Haven)	**Municipal Waste Combustors (Major Sources of NOx)**	Roehm America (formerly Evonik Cyro)
Connecticut Jet Power, LLC	Pratt & Whitney Div. of Raytheon Technologies Corporation, Middletown	Devon Power, LLC	New Haven Terminal (New Haven)	Covanta Bristol, Inc.*	SMM (Sims Metal) New England Corporation
CPV Towantic, LLC	University of Connecticut, Storrs*	Electric Boat Corporation*	Plainfield Renewable Energy, LLC*	Covanta Southeastern Connecticut Company*	**Major Sources of VOC Subject to MACT Standards**
Devon Power, LLC	U.S. Navy Submarine Base New London*	Equilon Enterprises, LLC dba Shell Oil Products US (New Haven) (formerly Motiva Enterprises, LLC)	Pratt & Whitney Division of Raytheon Technologies Corporation, East Hartford	Win Waste Bridgeport, L.P.	Buckeye PT Terminals, L.P. (Forbes Avenue Terminal)
Electric Boat Corporation*	Wallingford Energy LLC	GB II Connecticut LLC, Bridgeport Harbor Station	Pratt & Whitney Div. of Raytheon Technologies Corporation, Middletown	Win Waste Lisbon Inc.*	Buckeye PT Terminals, L.P. (Waterfront Terminal)
GB II New Haven LLC, New Haven Harbor Station	Waterbury Generation	GB II New Haven LLC, New Haven Harbor Station	Sikorsky Aircraft Corporation		Equilon Enterprises, LLC dba Shell Oil Products US (New Haven) (formerly Motiva Enterprises, LLC)
GB II Connecticut LLC, Bridgeport Harbor Station	Yale University Central/Science Campus	Gilman Brothers Company*	Sonoco Protective Solutions, Inc. (formerly Tegrant Diversified Brands, Inc.)*		Gulf Oil Limited Partnership
Iroquois Gas Transmission System, L.P. dba Iroquois Pipeline Operating Company	Yale School of Medicine/Sterling Power Plant	Gulf Oil Limited Partnership	Stanley Black and Decker, Inc.*		New Haven Terminal (East Haven)
Kimberly Clark Corporation (New Milford Mill)		Holcim Solutions and Products US, LLC*	Total Petrochemical and Refining USA Inc (formerly Cray Valley USA), Stratford		New Haven Terminal (New Haven)
Kleen Energy Systems, LLC		Kingswood Kitchens	United Aluminum Corporation		Sprague Operating Resources, LLC, Bridgeport
Lake Road Generating Company LLC*		Kleen Energy Systems, LLC	University of Connecticut, Storrs*		

* Major sources of NOx and VOCs located outside of the severe non-attainment area for the 2008 ozone standard as defined in RCSA section 22a-174-1(106).

Table 4. NOx Limits in Some OTC States for Fuel-Burning Emission Units Burning Particular Fuels

General fuel/ unit type[1]	CT (RCSA 22a-174-22e)	MA (310 CMR 7.19)	NH (Env-A 1300)	PA (25 Pa. Code § 129.97)	DC (20 DCMR 805)	NJ (17:27-19.4)	NY (Subpart 227-2)
Distillate Oil Boilers	**0.10** lb/MMBtu (EGU boilers and ≥25 and <100 MMBtu/hr ICI boilers) **0.20** lb/MMBtu (≥5 and <25 MMBtu/hr ICI boilers) **0.15** lb/MMBtu (≥100 MMBtu/hr ICI boilers) 24-hr avg using CEMS or avg of three 1-hr stack tests **0.15** lb/MMBtu (non-ozone season avg)	**0.12** lb/MMBtu (≥50 and <100 MMBtu/hr boilers) **0.15** lb/MMBtu (≥100 MMBtu/hr boilers) 1-hr avg or 24-hr avg using CEMS	**0.12** lb/MMBtu (≥50 and <100 MMBtu/hr face and tangential fired boilers firing No. 2 oil; 1-hr avg)	**0.12** lb/MMBtu (≥50 MMBtu/hr boilers; 30-day rolling avg using CEMS)	**0.12** lb/MMBtu (≥100 MMBtu/hr boilers) **0.09** lb/MMBtu (≥25 and <100 MMBtu/hr boilers firing oil or co-firing with natural gas) Calendar day avg	**0.29** lb/MMBtu (EGU boilers firing No. 2 and lighter fuel oil) **0.08** lb/MMBtu (≥25 and <100 MMBtu/hr ICI boilers firing No. 2 fuel oil) **0.10** lb/MMBtu (≥100 MMBtu/hr ICI boilers firing No. 2 fuel oil) Calendar day avg during ozone season and 30-day during non-ozone season using CEMS	**0.15** lb/MMBtu (≥100 and 250 MMBtu/hr boilers) **0.08** lb/MMBtu (≥25 and 100 MMBtu/hr boilers co-firing with gas) With CEM - 24-hour ozone season/ 30-day non-ozone season; without CEM - 1-hour
Natural Gas Boilers	**0.10** lb/MMBtu (EGU boilers and ≥100 MMBtu/hr ICI boilers) **0.20** lb/MMBtu (≥5 and <25 MMBtu/hr ICI boilers) **0.05** lb/MMBtu (≥25 and <100 MMBtu/hr) 24-hr avg using CEMS or avg of three 1-hr stack tests **0.15** lb/MMBtu (non-ozone season avg)	**0.10** lb/MMBtu (≥50 and <100 MMBtu/hr boilers) **0.06** lb/MMBtu (≥100 MMBtu/hr) **0.08** lb/MMBtu (>250 MMBtu/hr tangential gas-fired boilers) **0.15** lb/MMBtu (≥250 MMBtu/hr for face-fired boilers) 1-hr avg or 24-hr avg using CEMS	**0.10** lb/MMBtu (≥50 MMBtu/hr; 1-hr avg)	**0.10** lb/MMBtu (≥50 MMBtu/hr) **0.25** lb/MMBtu (≥50 MMBtu/hr refinery gas-fired boilers) 30-day rolling avg using CEMS	**0.05** lb/MMBtu (≥100 MMBtu/hr) Calendar day avg	**0.29** lb/MMBtu (EGU boilers) **0.05** lb/MMBtu (≥25 and <100 MMBtu/hr ICI boilers) **0.10** lb/MMBtu (≥100 MMBtu/hr ICI boilers) Calendar day (ozone season) or 30-day (non-ozone season) using CEMS	**0.05** lb/MMBtu (≥25 and 100 MMBtu/hr) **0.06** lb/MMBtu (≥100 and 250 MMBtu/hr) **0.08** lb/MMBtu (≥250 MMBtu/hr tangential and wall fired boilers) With CEM - 24-hour ozone season/ 30-day non-ozone season; without CEM - 1-hour
Oil-Fired Simple Cycle Turbines	**50** ppmvd (24-hr avg using CEMS or avg of three 1-hr stack tests) **0.15** lb/MMBtu (non-ozone season avg)	**50** ppmvd (≥250 MMBtu/hr; 1-hr avg or 24-hr avg using CEMS)	**75** ppmvd (turbines constructed on/before May 27, 1999; 1-hr avg)	**150** ppmvd (≥1,000 and <6,000 bhp) **96** ppmvd (≥6,000 bhp) 30-day rolling avg using CEMS	**42** ppmvd (@15% oxygen)	**42** ppm (Calendar day avg during ozone season and 30-day during non-ozone season using CEMS)	**100** ppmvd (@15% oxygen; 1-hr avg) **42** ppmvd (ozone season by May 2025; @15% oxygen; 30-day avg)
Gas-Fired Simple Cycle Turbines	**40** ppmvd (24-hr avg using CEMS or avg of three 1-hr stack tests)	**40** ppmvd (≥250 MMBtu/hr; 1-hr avg or 24-hr avg using CEMS)	**25** ppmvd (constructed after May 27, 1999) **55** ppmvd (constructed	**150** ppmvd (≥1,000 and <6,000 bhp) **42** ppmvd (≥6,000 bhp)	**25** ppmvd (@15% oxygen)	**25** ppm (Calendar day avg during ozone season and 30-day	**50** ppmvd (@15% oxygen; 30-day avg)

[1] Coal boilers are not included in this table because there are no units in Connecticut. Residual oil boilers are not included in this table because Connecticut's emission limits are at least as stringent as those in the states represented in this table.

	0.15 lb/MMBtu (non-ozone season avg)		on/before May 27, 1999) 1-hr avg	30-day rolling avg using CEMS		during non-ozone season using CEMS)	**100** ppmvd (ozone season; @15% oxygen) **25** ppmvd (ozone season by May 2025; @15% oxygen) 1-hr avg ozone season
Oil-Fired Combined Cycle Turbines	**42** ppmvd (24-hr avg using CEMS or avg of three 1-hr stack tests) **0.15** lb/MMBtu (non-ozone season avg)	**42** ppmvd (≥250 MMBtu/hr; 1-hr avg or 24-hr avg using CEMS)	**65** ppmvd (constructed on/before May 27, 1999; 1-hr avg)	**96** ppmvd (≥1,000 and <180 MW) **8** ppmvd (≥180 MW) 30-day rolling avg using CEMS	**42** ppmvd (@15% oxygen)	**42** ppm (Calendar day avg during ozone season and 30-day during non-ozone season using CEMS)	Case-by-case
Gas-Fired Combined Cycle Turbines	**25** ppmvd (24-hr avg using CEMS or avg of three 1-hr tests tests) **0.15** lb/MMBtu (non-ozone season avg)	**25** ppmvd (≥250 MMBtu/hr; 1-hr avg or 24-hr avg using CEMS)	**25** ppmvd (constructed after May 27, 1999) **42** ppmvd (constructed on/before May 27, 1999) 1-hr avg	**42** ppmvd (≥1,000 and <180 MW) **4** ppmvd (≥180 MW) 30-day rolling avg using CEMS	**25** ppmvd (@15% oxygen)	**25** ppm (Calendar day avg during ozone season and 30-day during non-ozone season using CEMS)	Case-by-case
Lean-Burn Oil-Fired Engines	**2.3** g/bk hp-hr (24-hr avg using CEMS or avg of three 1-hr stack tests)	**2.3** g/bhp-hr (1-hr avg or 24-hr avg using CEMS)	**4.8** g/bhp-hr (>560 KW) **3.0** g/bhp-hr (≤560 KW) 1-hr avg	**8.0** g/bhp-hr (≥500 bhp; liquid fuel or dual-fuel; 30-day rolling avg using CEMS)	**2.3** g/bhp-hr (≥50 hp engines permitted on or after August 3, 2023) **6.5** g/bhp-hr (≥50 hp engines permitted before August 3, 2023)	**8.0** g/bhp-hr (≥500 bhp) **2.3** g/bhp-hr (≥37 kW) **0.9** g/bhp-hr (≥37 kW operation commenced on/after March 7, 2007)	**2.3** g/bhp-hr (≥200 bhp engines firing distillate oil; 1-hr avg)
Lean-Burn Gas-Fired Engines	**1.5** g/bk hp-hr **2.0** g/bk hp-hr (engines firing landfill/digester gas alone or co-firing with natural gas) 24-hr avg using CEMS or avg of three 1-hr stack tests	**1.5** g/bhp-hr (1-hr avg or 24-hr avg using CEMS)	**2.5** g/bhp-hr (1-hr avg)	**3.0** g/bhp-hr (≥500 bhp; 30-day rolling avg using CEMS)	**0.7** g/bhp-hr (≥50 hp) **0.6** g/bhp-hr (≥50 hp engines firing waste, landfill, or digester gas)	**2.5** g/bhp-hr (≥500 bhp) **1.5** g/bhp-hr (≥37 kW) **0.9** g/bhp-hr (≥37 kW operation commenced on/after March 7, 2007) 1-hr avg	**1.5** g/bhp-hr (≥200 bhp) **2.0** g/bhp-hr (≥200 bhp engines firing landfill gas or digester gas alone or with natural gas) 1-hr avg
Rich-Burn Oil-Fired Engines	**1.5** g/bk hp-hr (24-hr avg using CEMS or avg of three 1-hr stack tests)	N/A	**4.8** g/bhp-hr (>560 KW) **3.0** g/bhp-hr (≤560 KW) 1-hr avg	**8.0** g/bhp-hr (≥500 bhp; 30-day rolling avg using CEMS)	**0.7** g/bhp-hr (≥50 hp)	**1.5** g/bhp-hr (≥37 kW) **0.9** g/bhp-hr (≥37 kW operation commenced on/after March 7, 2007) 1-hr avg	**2.3** g/bhp-hr (≥200 bhp engines firing distillate oil; 1-hr avg)
Rich-Burn Gas-Fired Engines	**1.5** g/bk hp-hr **2.0** g/bk hp-hr (engines firing landfill/digester gas alone or co-firing with natural gas) 24-hr avg using CEMS or avg of three 1-hr stack tests	**1.5** g/bhp-hr (1-hr avg or 24-hr avg using CEMS)	**1.5** g/bhp-hr (1-hr avg)	**2.0** g/bhp-hr (≥500 bhp; 30-day rolling avg using CEMS)	**0.7** g/bhp-hr (≥50 hp) **0.6** g/bhp-hr (≥50 hp engines firing waste, landfill, or digester gas)	**1.5** g/bhp-hr (≥500 bhp) **0.9** g/bhp-hr (≥37 kW operation commenced on/after March 7, 2007) 1-hr avg	**1.5** g/bhp-hr (≥200 bhp) **2.0** g/bhp-hr (≥200 bhp engines firing landfill/ digester gas alone or with natural gas) 1-hr avg