Update on EPA Air Programs

Lynne Hamjian
Air & Radiation Division Director
EPA Region 1

2023 SIPRAC Meeting
June 8, 2023

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Topics for Today's Discussion

1. Region 1 ARD priorities
2. Ozone Good Neighbor Transport Rule & Ozone
3. Key EPA national rules
4. Air Toxics Updates
5. Outer Continental Shelf Permitting
6. Climate & Energy
7. Questions

R1 Air & Radiation Division Investment Areas

- **Workforce Development**
- **Implement Core Programs**
- **Investment Areas:**
  - Climate & Energy
  - Mobile Sources
  - Air Toxics/Community Assistance
  - Environmental Justice

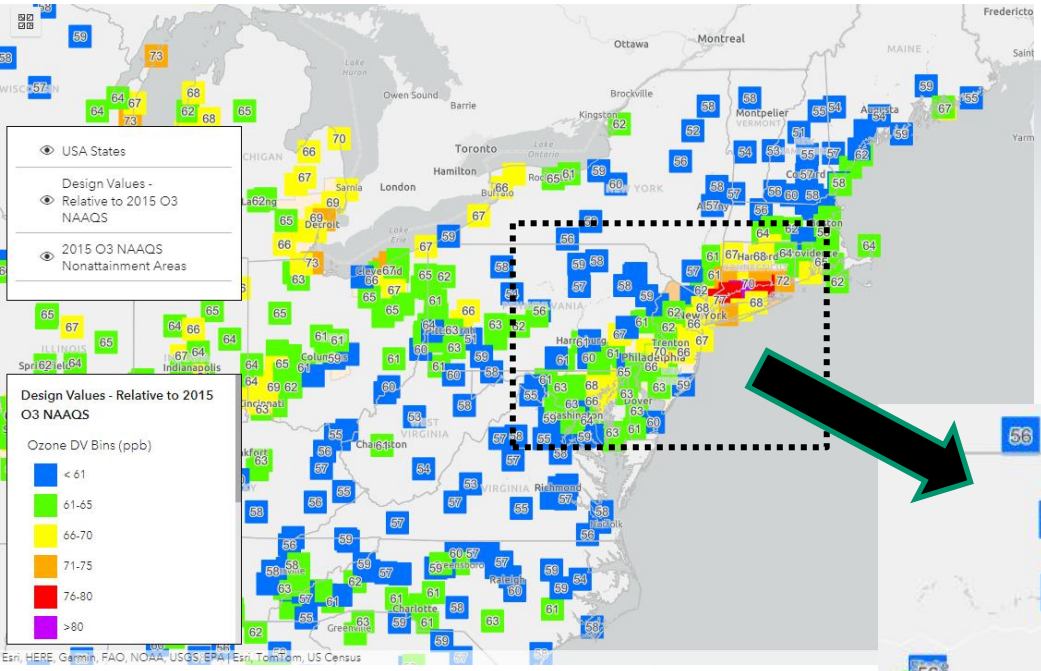
OZONE GOOD NEIGHBOR TRANSPORT RULE & CT OZONE NONATTAINMENT

Complexity of SIP Planning for two Ozone Standards

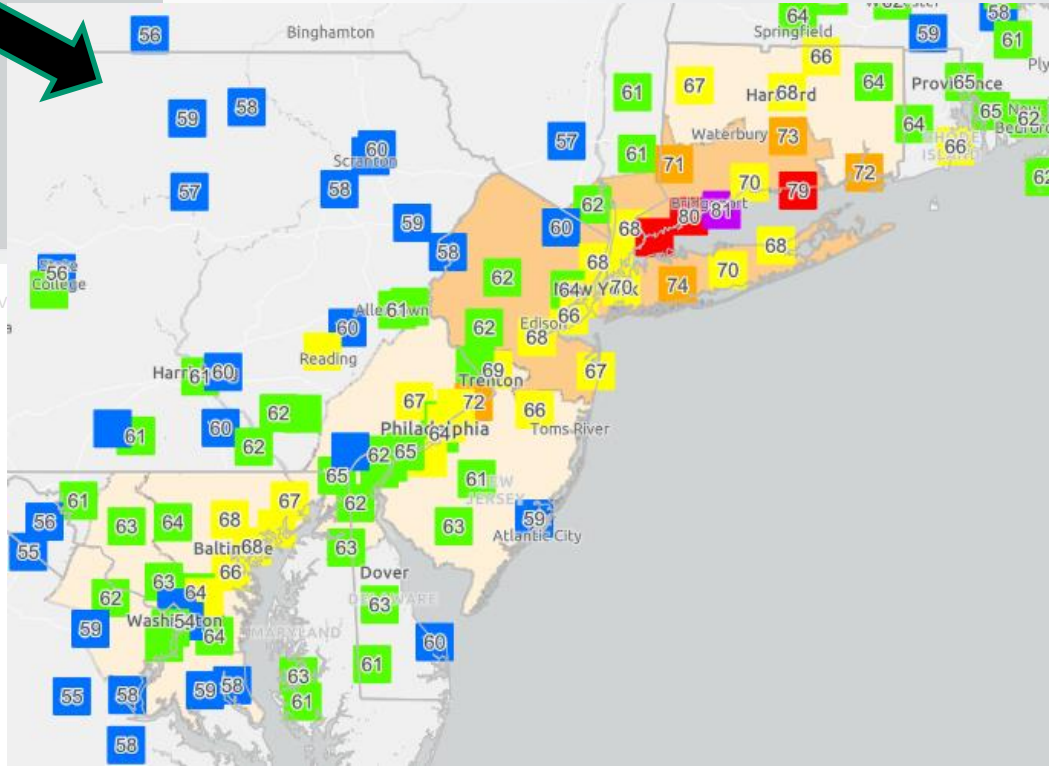
Area Class		Percent above 1-hr ozone NAAQS	8-Hour ozone design values (ppm)		Attainmnet date (years after designation)	New York Area Attainment Dates	
			2008 NAAQS (0.075 ppm)	2015 NAAQS (0.070 ppm)		2008 NAAQS (0.075 ppm)	2015 NAAQS (0.070 ppm)
Marginal	From up to*	0.833 15	0.076 0.086	0.071 0.081	3	July 20, 2015	NA
Moderate	From up to*	15 33.333	0.086 0.100	0.081 0.093	6	July 20, 2018	August 3, 2024
Serious	From up to*	33.333 50	0.100 0.113	0.093 0.105	9	July 20, 2021	August 3, 2027
Severe-15	From up to*	50 58.333	0.113 0.119	0.105 0.111	15	July 20, 2027	August 3, 2033
Severe-17	From up to*	58.333 133.333	0.119 0.175	0.111 0.163	17	July 20, 2029	August 3, 2035
Extreme	From up to*	133.333	0.175	0.163	20	July 20, 2032	August 3, 2038

*but not including

2020-2022 Design Values



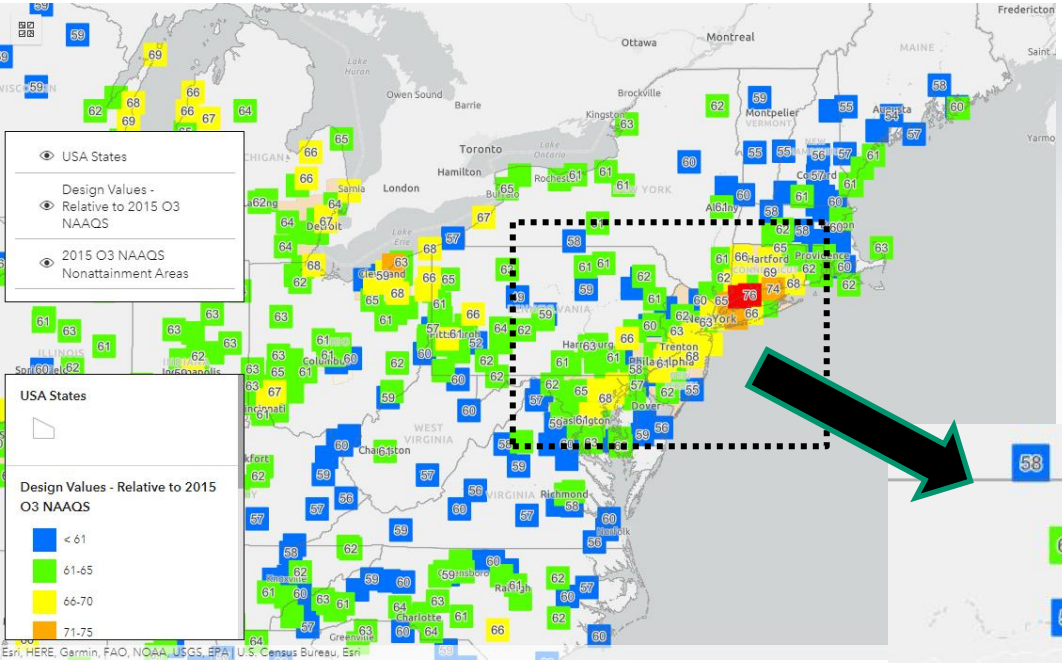
•"2022 Ambient Ozone Concentrations - Relative to the 2008 and 2015 8-Hr Ozone NAAQS" –
•https://experience.arcgis.com/experience/502feb600b32460caee6bbd10f8f4559/page/2015-O3-NAAQS---Prelim-DV

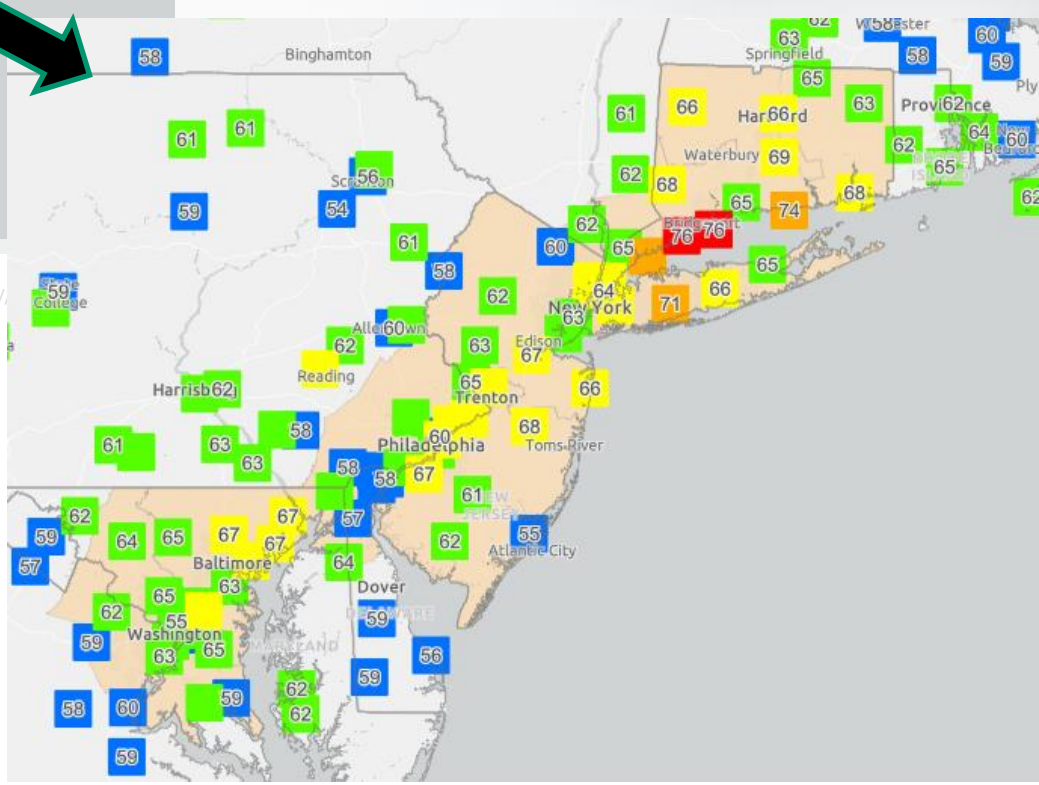


- Several of CT's coastal monitors exceed both the 2008 and 2015 ozone standards

Slide from the OTC's Modeling Committee

Preliminary 2021-23 Design Value





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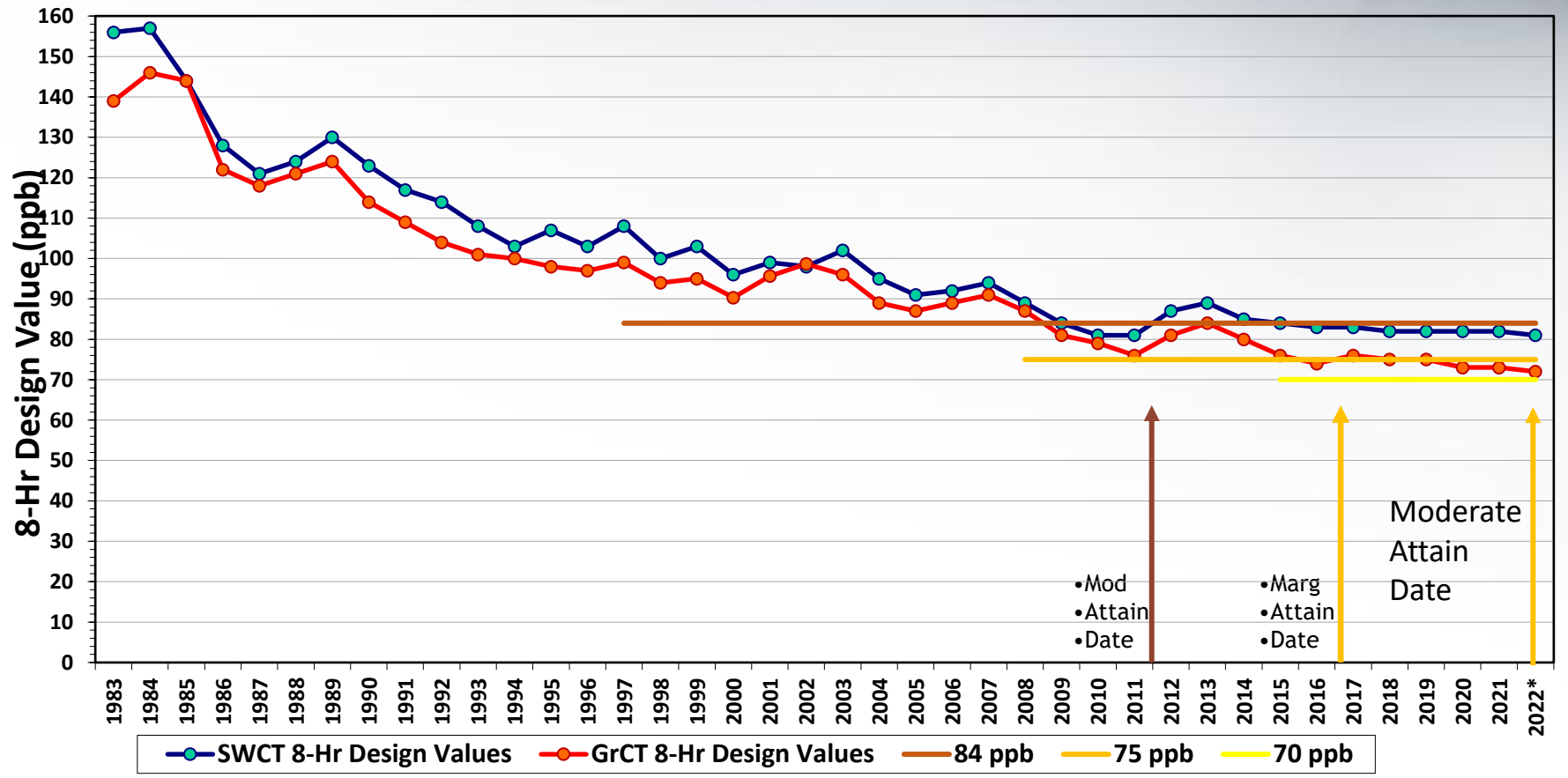
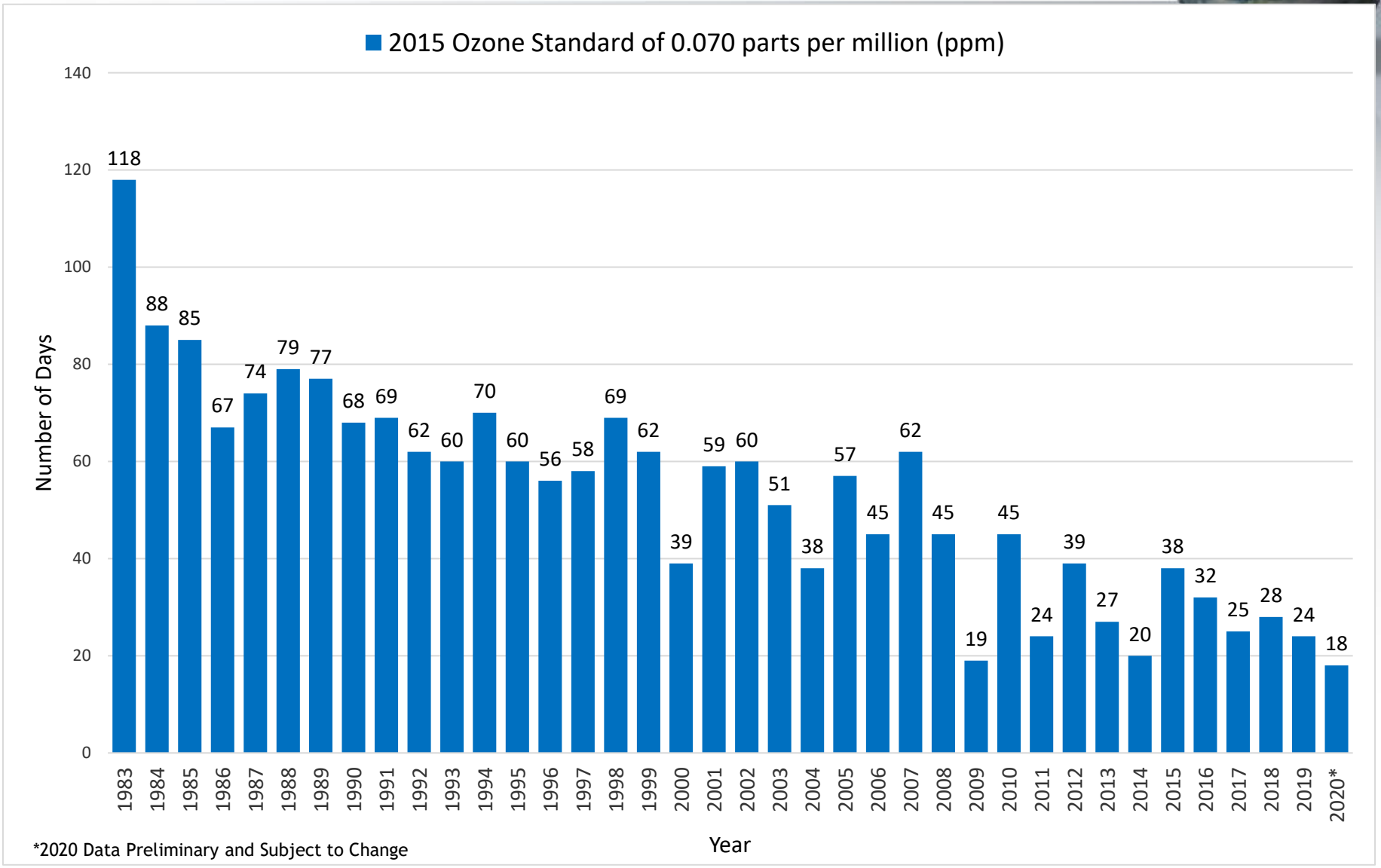
•Data through May 13, 2022; Data from OTC's Modeling Committee

TRENDS IN OZONE DATA



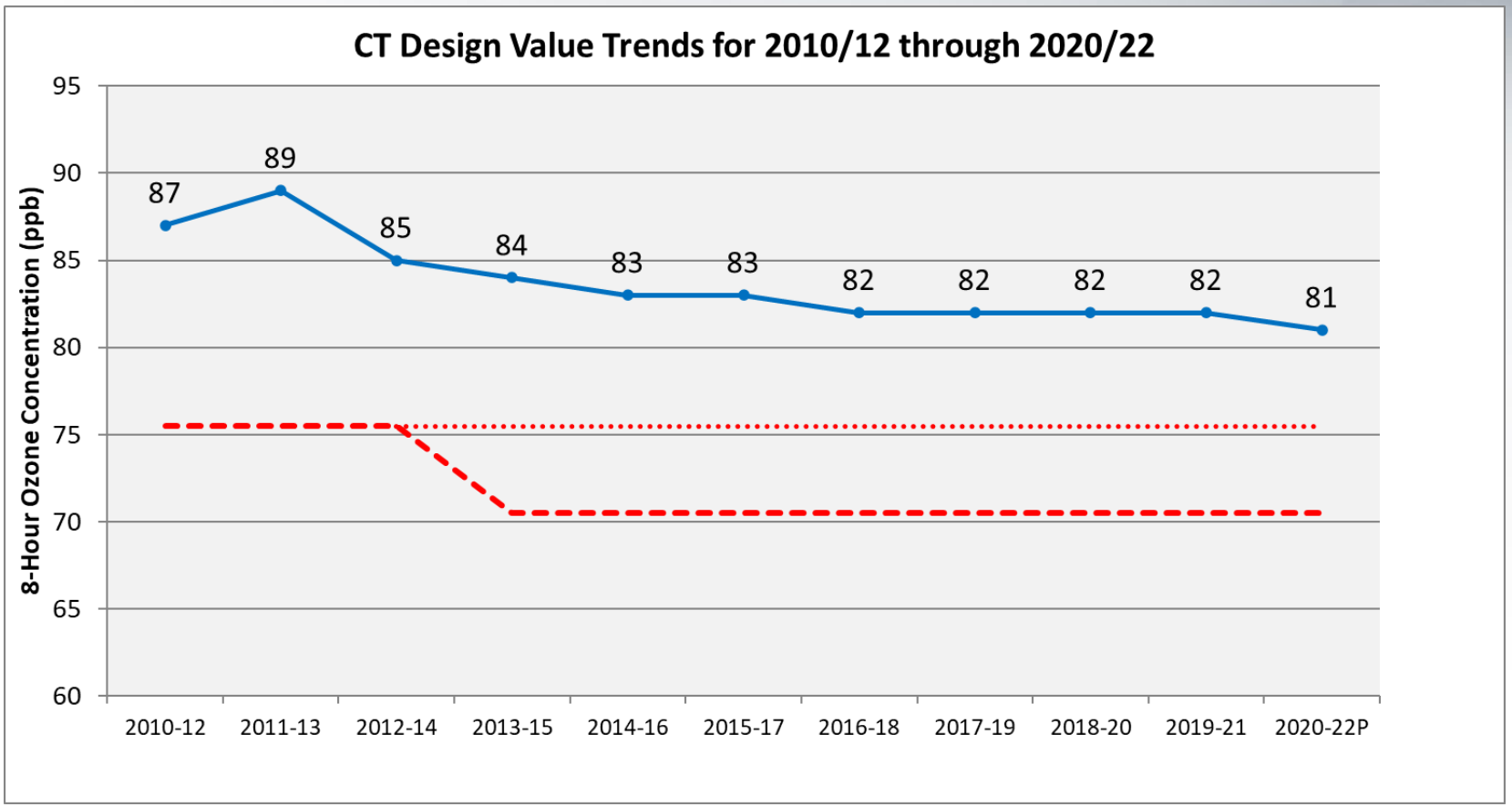
* 2022 Data Preliminary and Subject to Change

8-Hour Ozone Exceedance Days in New England for 2015 NAAQS (70 ppb)



*2020 Data Preliminary and Subject to Change

Ozone levels in Southwest Connecticut have not shown much improvement over the past decade.



2023 Preliminary Air Quality Stats

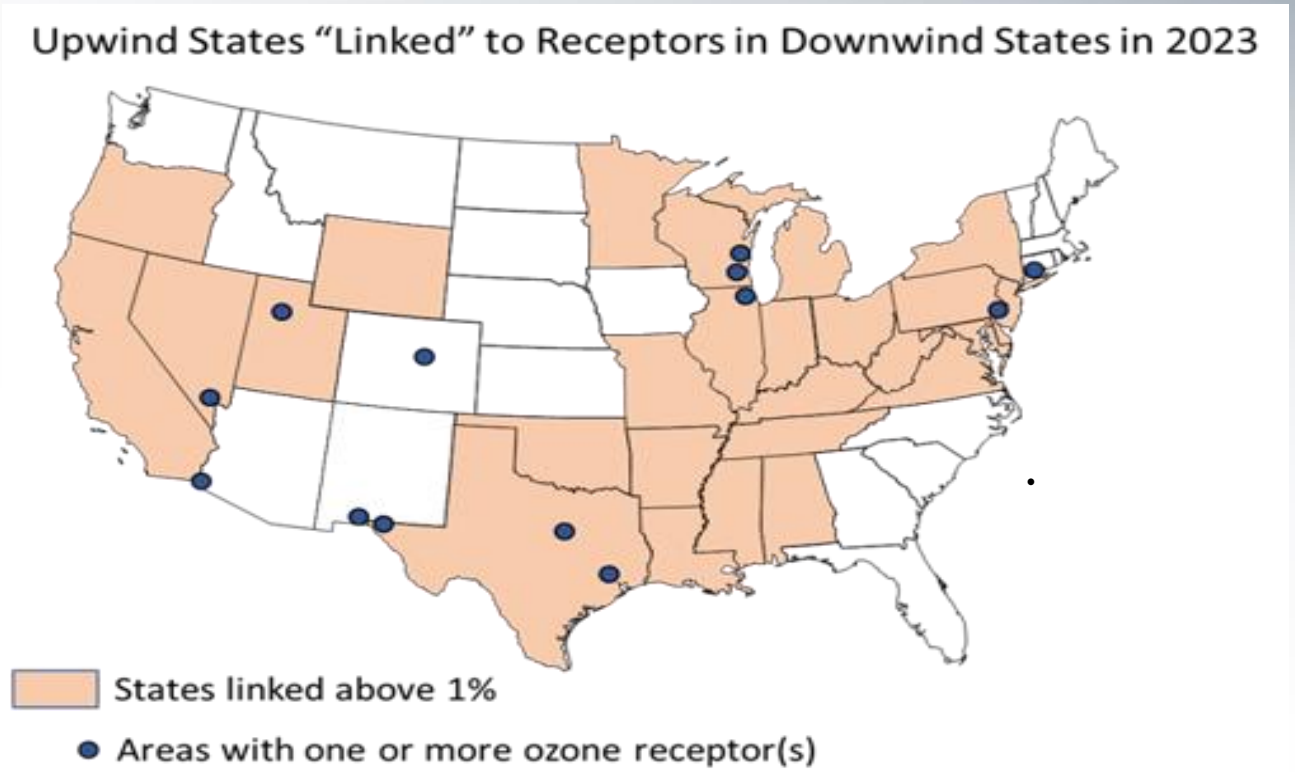
2023 OTR Snap-Shot Summary
--> 193 sites have recorded at least one day of sampling
--> The highest 8-Hr Max is 105ppb found at Bristol in PA
--> 124 site(s) recorded at least one exceedance
--> There has been 209 exceedance(s) recorded this year over 9 day(s)
--> The most exceedance days occurred at Greenwich in CT with a total of 4
--> 12 state(s) recorded at least one exceedance day, with PA seeing the most at 8
--> 6 state(s) saw unhealthy levels (86 ppb or higher)
--> 8 site(s) with preliminary DVs in violation of the 2015 NAAQS
--> The highest preliminary 21-23 DV is 79ppb found at Westport in CT

•Data through June 4, 2023; Slide from OTC's Modeling Committee

2015 Ozone Standard "Good Neighbor" rule

- Upgrades made to transport rule now in place to keep pace with the current, more protective NAAQS
- Updated evaluation of ozone transport using the latest technical analysis
- Final rule identifies 23 states that are linked to downwind air quality problems for purposes of the Good Neighbor provision
- Determines required reductions in NOx emissions
  - 22 states will face requirements for Electric Generating Units (EGUs)
  - 20 states will face requirements for certain industrial source categories (non-EGUs)
- Establishes FIP requirements for states for which EPA intends to disapprove Good Neighbor SIPs or for states which EPA listed on the finding of failure to submit (FFS)

States with NOx control obligations under Good Neighbor rule



- **Step 1:** EPA identified nonattainment and maintenance problems in the following areas shown by the dots
- **Step 2:** EPA identified upwind states that are linked above 1% of the NAAQS (0.70 ppb) to downwind air quality problems.

EGU Ozone Season Emissions Budgets

- Tons per ozone season

State	2023 Budget	2024 Budget	2025 Budget	2026 Budget	2027 Budget	2028 Budget	2029 Budget
NJ	769	769	769	769	769	769	769
NY	3,858	3,858	3,858	3,596	3,333	3,333	3,333
PA	8,918	8,918	8,918	7,896	7,146	7,146	4,816
Sum for other 19 states	195,458	184,673	181,686	138,190	108,448	104,102	99,997
Total	**209,003**	**198,218**	**195,231**	**150,451**	**119,696**	**115,350**	**105,915**

Non-EGU Emissions Standards Required in 23 States

Non-EGU emissions limitations proposed for 20 states: **(states in red linked to CT)**

- Arkansas, California, Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, Nevada, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Texas, Utah, Virginia, West Virginia

Emissions units in the following industries subject to ozone season NOx limits:

- Reciprocating internal combustion engines in ***Pipeline Transportation of Natural Gas***
- Kilns in *Cement and Cement Product Manufacturing*
- Boilers and furnaces in *Iron and Steel Mills and Ferroalloy Manufacturing*
- Furnaces in *Glass and Glass Product Manufacturing*
- **Large boilers in 5 industries**
- **Municipal Waste Combustors**

STATUS OF OTHER EPA KEY NATIONAL RULES

Proposed Rules for GHGs from the Power Sector

- EPA has proposing technology-based standards under CAA section 111, including:
  - Proposal published on May 23, 2023. Comment period open until August 8, 2023.
  - Updates to the New Source Performance Standards (NSPS) for fossil fuel-fired stationary combustion turbines (generally natural gas-fired)
  - Emission guidelines for large, frequently used existing fossil fuel-fired stationary combustion turbines (generally natural gas-fired)
  - Emission guidelines for existing fossil fuel-fired steam generating EGUs (generally coal-fired)
- For more details: https://www.epa.gov/stationary-sources-air-pollution/greenhouse-gas-standards-and-guidelines-fossil-fuel-fired-power

Best System of Emission Reduction (BSER) for New Facilities – CAA 111(b)

- Stationary Combustion Turbines
- 3 Levels of Applicability
  - Low Load (<20% Capacity Factor)
  - Intermediate (Between 20% and 50% Capacity Factor)
  - Base Load (>50% Capacity Factor)
- 3 Phases
  - Phase I - By Date of Promulgation or upon initial startup
  - Phase II – 2032 – 2035
  - Phase III – Beginning in 2038

BSER for Existing Facilities – CAA 111(d)

- Coal Fired Boilers
  - Operating past 2039 – Carbon Capture and Sequestration (CCS)
  - Operations cease before 2040 – Natural Gas Cofiring
  - Routine O&M – retirement before 2032, or enforceable capacity factor of 20%
- Natural Gas and Oil-Fired Steam Boilers
  - Routine O&M
- Natural Gas Turbines
  - Greater than 300 MW and Capacity Factor above 50%
    - CCS or Low GHG Hydrogen co-firing

Public Comment on CAA 111(b) and (d)

Public Hearing on EPA's Proposed Carbon Pollution Standards for Fossil Fuel-Fired Power Plants

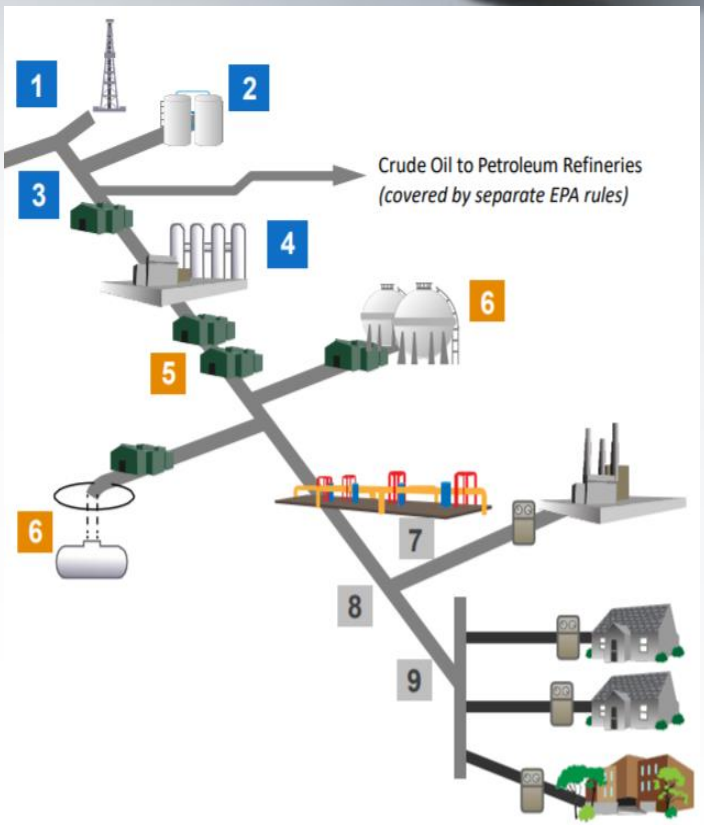
EPA will hold a virtual public hearing on June 13, 14, and 15, 2023, to provide the public the opportunity to present comments and information regarding the Agency's proposal for carbon pollution standards for fossil fuel-fired power plants.

Hearing information:

- Tuesday, June 13, 2023, 11:00 AM – 7:00 PM Eastern Time
- Wednesday, June 14, 2023, 11:00 AM – 7:00 PM Eastern Time
- Thursday, June 15, 11:00 AM - 4:00 PM Eastern Time

CAA 111 Subpart OOOO - Reducing Methane from the Oil and Natural Gas Transmission Network

- Proposed rule issued on November 2021. Covers transmission network for oil & natural gas including compressor stations.
  - Aims to find and fix leaks at new and existing well sites
- A supplemental proposal issued in November 2022
  - Revised program would tie leak monitoring requirements to the types and amount of equipment at a site, rather than to estimate emissions.
  - Compressor stations would be required to conduct monthly audio, visual and olfactory (AVO) monitoring, coupled with quarterly monitoring using optical gas imaging (OGI) or EPA Method 21.
  - Proposal includes deadlines to ensure prompt remediation of leaks for each type of site.
- Final rulemaking anticipated late 2023
  - EPA is proposing to require states to submit their plans to EPA for review within 18 months after the final Emissions Guidelines are published in the Federal Register.
  - States would be required to impose a compliance deadline on existing sources that is no later than 36 months after the state plan is due to EPA.



EPA's Clean Trucks Plan

Comprehensive Clean Trucks Plan to reduce pollution from highway commercial vehicles;

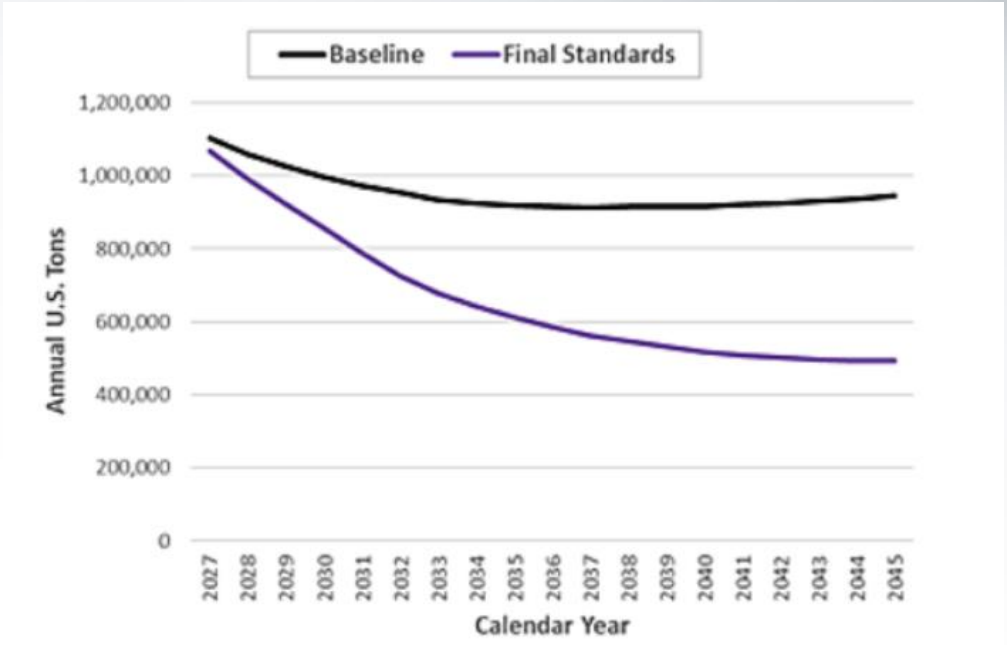
- 3 Major Actions in the Clean Trucks Plan:

1. Heavy-Duty NOx Standards for 2027 and beyond
   - EPA Administrator Regan signed the FRN on December 20, 2022.
   - Published in the Federal Register on January 24, 2023.
2. Heavy-Duty GHG standards for 2027 – 2032 and beyond
   - EPA's HD Phase 3 NPRM published in the Federal Register on April 27th.
   - The 50-day comment period closes on June 16, 2023.
   - Through 2055, EPA projects that the proposed standards would avoid nearly 10 billion tons of CO_2 emissions (equivalent to more than twice the total U.S. CO_2 emissions in 2022).
3. Criteria Pollutant and GHG Standards for Medium-Duty Vehicles 2027-2032 and beyond
   - NPRM published May 5, 2023; 60-day public comment period closes July 5, 2023.
   - Rulemaking covers both light-duty vehicles and medium-duty vehicles (commercial pickups and delivery vans)
   - Rule targets a 56% reduction in average GHG emissions by 2032 (compared to 2026) for light-duty vehicles, and 44% reduction for medium-duty vehicles in this same period.

Heavy-Duty NOx Standard (final)

EPA estimates that by 2045 the rule will prevent the following annually:

- Between 860 and 2,900 fewer premature deaths
- 6,700 fewer hospital admissions and emergency department visits
- 18,000 fewer cases of asthma onset in children
- 3.1 million fewer cases of asthma symptoms and allergic rhinitis symptoms
- 78,000 fewer lost days of work
- 1.1 million fewer lost school days for children



National Heavy-duty Vehicle NOx Emissions (Annual US Tons) for Calendar Years Between 2027 and 2045

AIR TOXICS PROGRAM UPDATES

2020 Major MACT to Area Source Final Rule

Final Rule: Reclassification of Major Sources as Area Sources Under Section 112 of the Clean Air Act (Major MACT to Area- MM2A Rule) Published in *Federal Register o*n November 19, 2020 *(*85 FR 73854)

- Allows major sources of hazardous air pollutants (HAP) to reclassify to area source status *at any time* by limiting its emissions and potential to emit (PTE) HAP to below the major source thresholds (10 tpy of a single HAP and 25 tpy of any combination of HAP)

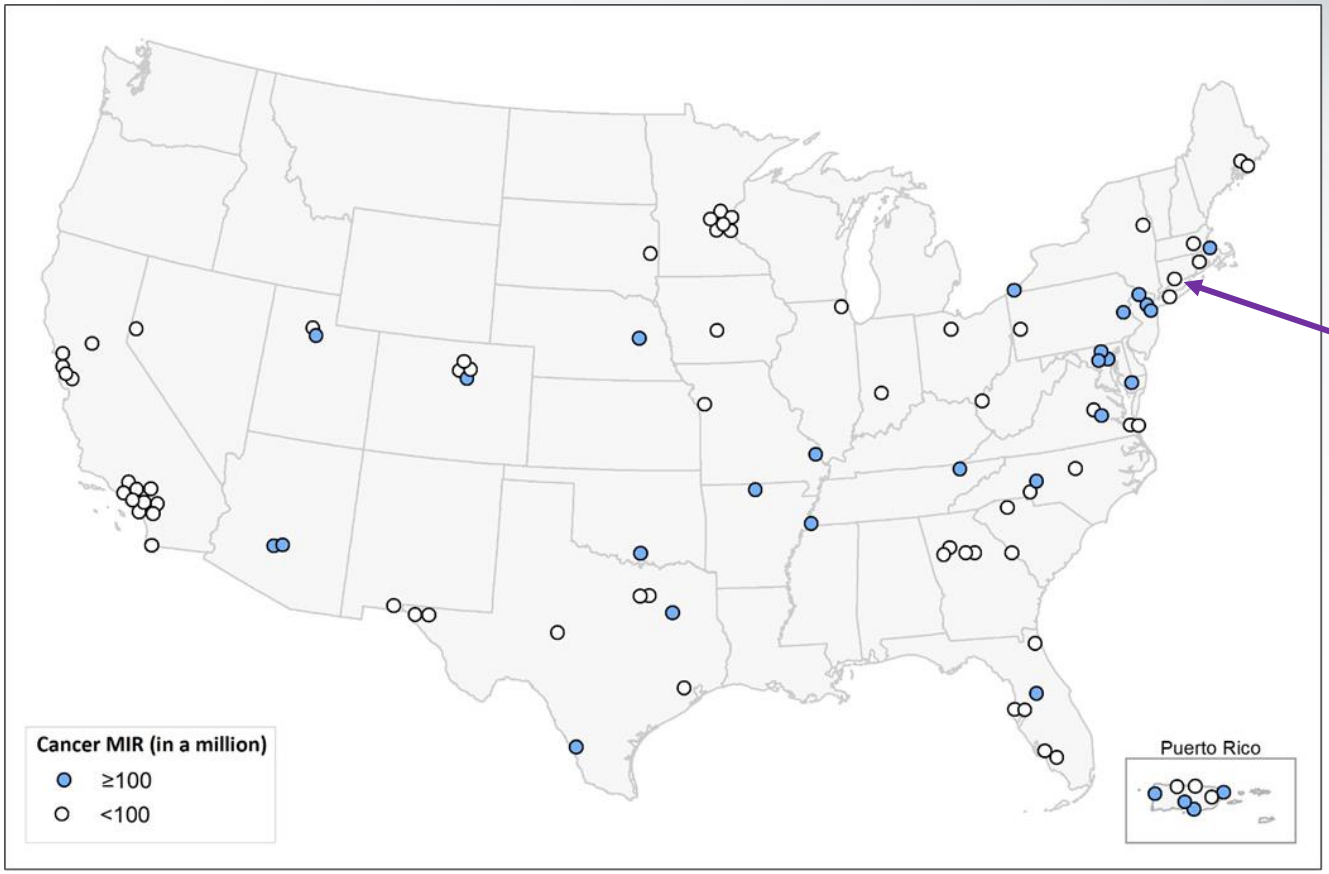
– EPA Identified the MM2A Rule for review under Executive Order 13990
  – Review is underway at this time

Ethylene Oxide (EtO) Regulatory Actions

- **<u>Commercial Sterilizers Proposed Rulemaking</u>:** National Emission Standards for Hazardous Air Pollutants (NESHAP): Ethylene Oxide Emissions Standards for Sterilization Facilities Residual Risk and Technology Review
  - On April 13th, EPA proposed new requirements for 40 CFR Part 63, Subpart O
    - Control devices (18-month timeline), continuous monitoring, and reporting requirements
  - Would reduce EtO emissions from commercial sterilizers by 80%
    - Estimated lifetime cancer risk in surrounding communities < 100-in-1 million for all facilities
  - Comment period extended from June 12th to **June 27th**
- **<u>Occupational and Community Risk Proposed Actions</u>:** Proposed Interim Decision and Draft Risk Assessment Addendum
  - On April 13th, EPA proposed a broad set of new protections under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); the Agency identifies EtO as a pesticide.
  - Estimated occupational cancer risks from EtO to be 1 in 10.
  - Comment period extended from June 12th to **June 27th**
- **<u>Chemical Plants Proposed Rulemaking</u>:** New Source Performance Standards (NSPS) for the Synthetic Organic Chemical Manufacturing Industry and NESHAP for the Synthetic Organic Chemical Manufacturing Industry and Group I & II Polymers and Resins Industry
  - On April 6th, EPA proposed to update 6 NESHAP and 4 NSPS
    - Would substantially reduce nationwide air toxics emissions, including EtO (63%) and chloroprene (74%)
  - Comment period ends on **June 26th**

Ethylene Oxide (EtO) Regulatory Actions

Estimated Lifetime Cancer Risk from Commercial Sterilizer EtO Emissions, May 2022



Covidien LP
North Haven, CT

Estimated lifetime cancer risk
< 100-in-1 million threshold

For more information about these actions: https://www.epa.gov/eto

Amendments to Air Toxics Standards

- **Coal- and Oil-Fired Electric Utility Steam Generating Units**—Revocation of the 2020 Reconsideration and Affirmation of the Appropriate and Necessary Supplemental Finding (Final Rule)
  - Revokes a finding that it is not appropriate and necessary to regulate coal- and oil-fired electric utility steam generating units (EGUs) under CAA section 112, and concludes that it remains appropriate and necessary to regulate HAP emissions from EGUs after considering cost
  - Published in *Federal Register* on March 8, 2023 *(*88 FR 13956)

  Review of the Residual Risk and Technology Review (Proposed Rule)
  - Tightens emissions standard for filterable particulate matter from existing coal-fired power plants by 2/3 and for mercury from existing lignite-fired power plants by 70%
  - Seeks comment on whether the current definition of limited-use liquid oil-fired subcategory remains appropriate, or if a period other than the current 24-month period/a different threshold would be more appropriate given the increased reliance on oil-fired generation during periods of extreme weather
  - Published in *Federal Register* on April 24, 2023 *(*88 FR 24854)

Amendments to Air Toxics Standards

- **Final Rule – NESHAP: Miscellaneous Coating Manufacturing (MCM)** Technology Review (Part 63 Subpart HHHHH)
  - Finalizes amendments to address unregulated emissions from the MCM source category by setting MACT standards for inorganic HAP.
    - Existing sources must demonstrate initial compliance with the PM emissions limit of 0.014 grains per dry standard cubic foot (gr/dscf)
    - New sources must demonstrate initial compliance with the PM emissions limit of 0.0079 gr/dscf
      - Continuous compliance with the emission limits will be demonstrated through control device parameter monitoring coupled with periodic emissions testing
  - Published in *Federal Register* on February 22, 2023 *(*88 FR 10842)

Residual Risk and Technology Reviews Finalized Within the Last Two Years

- 11/18/2021: NESHAP: Flexible Polyurethane Foam Fabrication Operations Residual Risk and Technology Review
  - Adds a numeric emission limit for existing flame lamination units and removes exemptions for periods of startup, shutdown, and malfunction
- 11/19/2021: NESHAP: Carbon Black Production and Cyanide Chemicals Manufacturing Residual Risk and Technology Reviews
  - Adds new emissions standards for major source categories to address HAP emissions not previously covered
- 11/19/2021: NESHAP: Refractory Products Manufacturing Residual Risk and Technology Review
  - No revisions to the emission limits for this source category based on residual risk
- 5/6/2022: NESHAP: Mercury Cell Chlor-Alkali Plants Residual Risk and Technology Review
  - Prohibits mercury emissions from existing mercury cell chlor-alkali plants
- 12/21/2022: Reconsideration of the 2020 NESHAP: Miscellaneous Organic Chemical Manufacturing Residual Risk and Technology Review
  - EPA granted petitions concerning the use of the IRIS value for ethylene oxide in assessing cancer risk, but is making no changes to the risk assessment or related regulatory text

CLIMATE & ENERGY

ENERGY STAR IN NEW ENGLAND

- **Northeast Energy Management Best Practice Network**

Regional network of industrial end-users, utilities, and strategic energy managers brought together with the common goal of saving energy. We recently partnered with EPA Region 2 to expand the network to New York and New Jersey, and we are building out a network steering committee representing key sectors. Visit network webpage here. Email NEMBPN@epa.gov to receive updates.

- **ENERGY STAR Portfolio Manager (PM) tool**

Free, secure, online resource to benchmark energy use in any type of building. Find trainings and resources here.

- **ENERGY STAR Treasure Hunt Campaign**

Conduct treasure hunts to find energy efficiency opportunities in commercial buildings and industrial facilities. Learn more here.

- **Building and Industrial Plant Certifications**

Get recognized for energy efficiency performance. Learn more here.

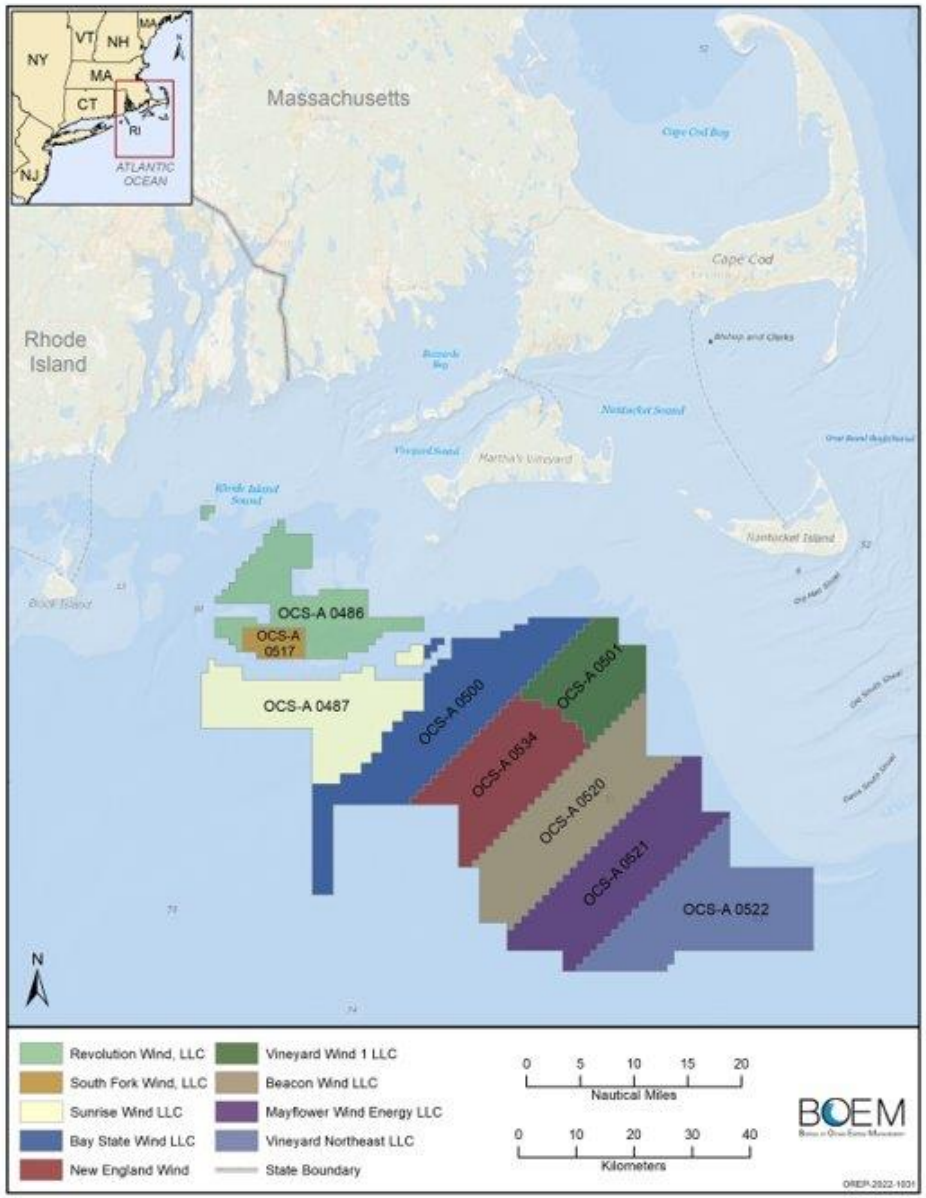
Want to learn more about ENERGY STAR programs? See Resources for Policymakers.

CT 2023 ENERGY STAR PARTNERS

- **The Sponsors of Energize Connecticut℠,Eversource, UI, SCG and CNG,** (Berlin, Conn.) utilized ENERGY STAR partnerships to support the construction of ENERGY STAR certified homes and offer energy savings opportunities to households and commercial businesses. The Sponsors of Energize Connecticut℠ has been a Sustained Excellence winner for 6 years.
- **Xerox Corporation** (Norwalk, Conn.), a work solutions company specializing in print technology, imaging, and data analytics, certified 100% of its portfolio to ENERGY STAR while also certifying some of the first professional imaging products to the new Version 3.2 ENERGY STAR Imaging Equipment specification. Xerox Corporation has been a Sustained Excellence winner for 1 year.
- See press release here.

OFFSHORE WIND PERMITTING

Region 1 Offshore Wind Projects



- **Orsted**
  - South Fork: 132 MW
  - Revolution Wind: 880 MW
  - Sunrise Wind: 1,300 MW
  - Baystate Wind: 2,000 MW
- **Avangrid / Copenhagen Infrastructure Partners**
  - Vineyard Wind 1: 800 MW
  - New England Wind 1: 800 MW
  - New England Wind 2: 1,200 MW
  - Vineyard Northeast: 1,300 MW
- **Shell New Energies / Ocean Winds**
  - SouthCoast Wind: 2,400 MW
- **Equinor Wind US**
  - Beacon Wind: 2,400 MW

Revolution Wind – Emission Summary

- Project Emissions
  - Construction (Worst-Case Annual Scenario)

Pollutant	CO_2e	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	Lead	VOC
Tons per year	302,957	1,039	3,978	137	133	15	0.02	83.6

  - Operations and Maintenance

Pollutant	CO_2e	CO	NO_x	PM_{10}	$PM_{2.5}$	SO_2	Lead	VOC
Tons per year	19,600	65.8	210	8.6	8.3	0.8	<0.01	5.0

- Avoided Emissions Once Operational

Pollutant	CO_2e	NO_x	SO_2
Average Annual Avoided Emissions (TPY)	1,260,213	674	358
Average Lifetime Avoided Emissions (Tons/27.5 yrs.)	35,706,016	19,106	10,144

Pollution Control Requirements

- Visible emissions limit for OCS sources
- Fuel sulfur limits
- Facility-wide emission limits for NOx and VOC and NNSR offset requirements
- Highest tier engine standards for engines on wind turbine generators and offshore substations
- Highest tier engine standards for engines on vessels operating as OCS sources (at the time of deployment)
- Leak rate limits on switchgear that contain SF_6 insulating gases

The Work Ahead

Project Name	Developer	COA	Size (MW)	No. of Turbines	Energy Destination	NOI Submittal	Application Deemed Complete	Public Comment Period Starts	Final Permit Issuance
Revolution Wind	Orsted NA	MA	800	Up to 100	CT & RI	5/1/2022	10/7/2022	3/31/2023	10/7/2023
New England Wind I (Formerly Park City Wind)	Avangrid Renewables, LLC	MA	804	41-62	CT	10/7/2022	2/13/2023	9/13/2023	2/13/2024
New England Wind II (Formerly Commonwealth Wind)	Avangrid Renewables, LLC	MA	1200	64-88	MA	10/7/2022	2/13/2023	9/13/2023	2/13/2024
Sunrise Wind	Orsted NA	MA	1094	Up to 94	NY	8/17/2022	3/21/2023	10/21/2023	3/21/2024
South Coast Wind (Formerly Mayflower Wind)	Shell New Energies US LLC/ Ocean Winds North America LLC	MA	2400	Up to 147	MA	11/23/2022	4/13/2023	11/13/2023	4/13/2024

WRAP UP/QUESTIONS?

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