



June 26, 2014

EPA Docket Center, WJC West (Air Docket)
U.S. Environmental Protection Agency, Mailcode: 2822T
1200 Pennsylvania Ave. NW
Washington, DC 20460
Attention Docket ID No. EPA-HQ-OAR-2013-0809

Re: *Comments of the Connecticut Department of Energy and Environmental Protection on the 2018 Emissions Modeling Platform*

Dear Docket Administrator:

The Connecticut Department of Energy and Environmental Protection (DEEP) is pleased to have the opportunity to comment on the U.S. Environmental Protection Agency's (EPA's) 2018 emissions modeling platform. DEEP notes that the platform, or portions of the data that make up the platform, may be used by the EPA in several contexts, including the development of rules related to the transport of air pollution and the National Ambient Air Quality Standards. Therefore, it is crucial given the importance of transported air pollution in influencing Connecticut's air quality that the data used to inform the air quality model are as accurate as possible. DEEP provides the following comments on five of the areas for which EPA requested comment on the 2018 modeling platform:

1) Emissions values and supporting data for EGUs

Many of DEEP's comments address this area so that the 2018 modeling platform correctly identifies units located in Connecticut and more accurately represents the operation of and emissions from Connecticut units.

Bridgeport Harbor 3, ORIS 568; Montville 5 and 6, ORIS 546; Middletown 4, ORIS 562; and New Haven Harbor 1, ORIS 6156 and Turndown Constraints

The Integrated Planning Model (IPM) projects that Connecticut's remaining coal-fired unit, Bridgeport Harbor 3, will retire by 2018. While it is possible that the Bridgeport Harbor 3 retirement will occur, DEEP is not aware of any retirement announcements regarding this unit. In addition, Bridgeport Harbor 3 has been bid into Forward Capacity Auction (FCA) 8 and is therefore obligated to provide a capacity commitment from June 1, 2017 through May 31, 2018.

Similarly, IPM projects zero emissions in 2018 from four of Connecticut's oil/gas-fired boilers, namely Montville 5 and 6, Middletown 4, and New Haven Harbor 1 (Montville 6 and Middletown 4 are oil-fired only). Again, while it is possible that there will be no emissions from these units, all of the units have been bid into FCA 8 and are therefore obligated to provide a capacity commitment from June 1, 2017 through May 31, 2018.

It is noted in **Section 3.5.3 Turndown** of the *Documentation for EPA Base Case v5.13 Using the Integrated Planning Model* that turndown assumptions are used to prevent coal and oil/gas steam units from operating strictly as peaking units. The turndown assumptions require coal steam units to dispatch no less than 50% of the unit capacity in the five base-and mid-load segments of the load duration curve

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(LDC) in order to dispatch 100% of the unit in the peak load segment of the LDC. Oil/gas steam units are required to dispatch no less than 25% of the unit capacity in the five base- and mid-load segments of the LDC in order to dispatch 100% of the unit capacity in the peak load segment of the LDC. The documentation explains that the turndown constraints were developed through detailed assessments of the historical operating characteristics of the existing fleet of coal steam and oil/gas steam units' capacities.

Data from 2008-2010 show that Montville 5 and 6, Middletown 4 and New Haven Harbor 1 (all burning oil or oil/gas) were all operating at low annual capacity factors (<10%) and were therefore essentially operating as peaking units. EPA's own peaking unit file for the 2011 modeling platform includes Montville 5 and 6, Middletown 4 and New Haven Harbor 1. Data from 2011-2013 show that Bridgeport Harbor 3 (burning coal) had an average annual capacity factor of 13%. It is unlikely that the operation of certain oil- or oil/gas- and coal-fired units as virtual peaking units is limited to Connecticut, and it therefore seems prudent to review and possibly revise existing turndown constraints. **DEEP recommends that the IPM turndown constraints be reviewed, with regard to recent operational data, and possibly revised to adjust for changing market forces.**

Projected NOx/SO2 emission increases at Municipal Waste Combustors and Tire Burner: Covanta Mid-Connecticut, ORIS 54945, units 11-13; Wheelabrator Bridgeport, ORIS 50883, units 1-3; American Ref-Fuel of SE CT, ORIS 10646, BLR1-BLR2; Wheelabrator Lisbon, ORIS 54758, BW1-BW2; Covanta Bristol Energy, ORIS 50648, UNIT1-UNIT2; Covanta Wallingford Energy, ORIS 50664, B101-B103; Exeter Energy, ORIS 50736, units 1-2

IPM projects large, unrealistic increases in nitrogen oxides (NOx) emissions from Connecticut's municipal waste combustors (MWCs) and tire burners from 2011 to 2018. The total projected increase for these units is 1728 tons. All units, with the exception of those at American Ref-Fuel of SE CT and Covanta Wallingford Energy, are projected to exceed permitted NOx limits.

There is also a projected increase of 689 tons of sulfur dioxide (SO2) from the MWCs and tire burners from 2011 to 2018 with Covanta Wallingford Energy's units projected to exceed permitted SO2 limits of 20.22 tpy/unit (see Attachment 1). Aside from the erroneous predictions that units would exceed permitted limits, municipal waste combustor operations are anticipated to decrease, rather than increase, over time due to recycling efforts. The Connecticut legislature recently enacted a 60% target rate for reducing solid waste disposal by increasing source reduction, recycling, and reuse by January 1, 2024.¹ The current reported recycling rate is under 30%. Furthermore, as part of its Reasonably Available Control Technology (RACT) review as required by the 2008 Ozone National Ambient Air Quality Standard Implementation Rule, DEEP will be undergoing a review of current NOx limitations for Connecticut's MWCs, so overall NOx emissions from the MWCs will likely be reduced through that effort. **DEEP recommends that Connecticut's MWC and tire burner projected 2018 emissions be revised, after consultation with DEEP, to reflect permit limitations, anticipated revised NOx RACT requirements, and increasing source reduction, recycling, and reuse.**

¹ <http://search.cga.state.ct.us/2014/ACT/PA/2014PA-00094-R00SB-00357-PA.htm>

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New unit projected by IPM

IPM projects that a 439.2 MW oil-fired combustion turbine (Plant Name NENG_CT_CT_Combustion Turbine, ORIS 83640 in NEEDS v5.13) will start operating in Connecticut in 2015. DEEP is not aware of any combustion turbine of this size and fuel type scheduled to start-up in 2015 or beyond. **DEEP recommends that this unit be removed from NEEDS v5.13 and IPM 2018 projections.**

Correction to Table 3-13

Table 3-13 in Section 3. Power System Operation Assumptions of the *Documentation for EPA Base Case v5.13 Using the Integrated Planning Model* includes information on state power sector regulations included in EPA Base Case v.5.13. **DEEP recommends that the table information for Connecticut be corrected as follows (corrected items are in bold-faced font):**

State/Region	Bill	Emission Type	Emission Specifications	Implementation Status	Notes
Connecticut	Executive Order 19 and Regulations of Connecticut State Agencies (RCSA) section 22a-174-22	NOx	0.15 lbs/MMBtu non-ozone seasonal limit for all fossil units \geq 15 MW	2003	
	Executive Order 19, RCSA section 22a-174-19a and Connecticut General Statutes (CGS) 22a-198	SO ₂	0.33 lbs/MMBtu quarterly rate limit for all fossil units \geq 25 MW (Title IV sources) 0.55 lbs/MMBtu quarterly rate limit for all fossil units \geq 15 MW and <25 MW (non-Title IV sources)		
			0.33 lbs/MMBtu quarterly rate limit for all fossil units \geq 15 MW	2014	
	CGS 22a-199	Hg	For all coal-fired units, meet a Hg emissions rate = 90% reduction of mercury from the measured inlet conditions for the affected unit or meet an emissions rate of \leq 0.6 lb Hg/TBtu	2008	

Energy Efficiency (EE) assumptions in IPM

Section 3.9.8 Energy Efficiency and Renewable Portfolio Standards of the *Documentation for EPA Base Case v5.13 Using the Integrated Planning Model* includes a discussion of how Renewable Portfolio Standard requirements are represented in IPM, but does not appear to include a discussion of how EE requirements are represented in IPM. **DEEP recommends that EPA include a discussion of how EE requirements are represented in IPM in Section 3.9.8 of the Documentation for EPA Base Case v5.13.**

Connecticut peaking units

EPA requests comment on the specific units that are expected to be used as peaking units in the future year and on the nature of the expected 2018 emissions from these units. DEEP provides comment on three categories of peaking units in Connecticut:

A) Simple-cycle oil-fired combustion turbines without Continuous Emissions Monitors (CEMS)

In 2018, IPM projects no emissions from Waterside Power 4, 5 and 7, ORIS 56189; Branford UN10, ORIS 540; Bridgeport Harbor 4, ORIS 568; Cos Cob 10-14, ORIS 542; Devon 10, ORIS 544; Tunnel 10, ORIS 557;

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Franklin Drive UN19, ORIS 561; Middletown 10, ORIS 562; South Meadow 11-14, ORIS 563; Torrington Terminal UN10, ORIS 565; and Norwich 5, ORIS 581. The units are used for peaking purposes during periods of high electrical demand, and it is likely that one or more of the units will operate in 2018. All of the units are bid into FCA-8.

DEEP further observes that EPA's peaking unit file in the 2011 Modeling Platform does not include any of these units. In its 2011 Modeling Platform comments², DEEP provided EIS identifiers matched to ORIS facility/unit ID for Connecticut's combustion turbines without CEMS. DEEP also provided 2011 temporal operations and emissions for most of the combustion turbines without CEMS.

Regarding expected 2018 emissions from Connecticut's simple-cycle oil-fired combustion turbines without CEMS, DEEP recommends that EPA use the 2011 NEI emissions provided in Attachment 1 of DEEP's 2011 Modeling Platform comments for Cos Cob 10-14, 2012 EMIT emissions provided in Attachment 2 of DEEP's 2011 Modeling Platform comments for Waterside Power 4, 5 and 7 and 2011 temporal operations and emissions provided in Attachment 3 of DEEP's 2011 Modeling Platform comments for Branford UN10, Bridgeport Harbor 4, Devon 10, Tunnel 10, Franklin Drive UN19, Middletown 10, South Meadow 11-14, Torrington Terminal UN10 and Norwich 5 (see footnote 2 for DEEP's 2011 Modeling Platform comments) as surrogates for projecting future year emissions.

B) Simple-cycle combustion turbines with CEMS

Regarding expected 2018 emissions from Connecticut's simple-cycle combustion turbines with CEMS (AL Pierce, ORIS 6635, unit AP-1; Devon, ORIS 544, units 11-18; Middletown, ORIS 562, units 12-15; New Haven Harbor ORIS 6156, units NHHS2-NHHS4; Wallingford Energy, ORIS 55517, units CT01-CT05; and Waterbury Generation, ORIS 56629, unit 10), DEEP offers that either ERTAC v2.2 2018 projected emissions or 2018 projected emissions from IPM are plausible projections of future year emissions.

C) Oil-fired boilers and coal-fired boiler

DEEP references the discussion and recommendation in the earlier comment regarding turndown constraints for Bridgeport Harbor 3, Montville 5 and 6, Middletown 4, and New Haven Harbor 1. As unit operations have decreased significantly in recent years, these units may be used as peaking units in 2018.

Regarding expected 2018 emissions from Bridgeport Harbor 3, Montville 5 and 6, Middletown 4 and New Haven Harbor 1, DEEP recommends that EPA use the ERTAC v2.2 2018 projected emissions for Bridgeport Harbor 3, Middletown 4 and Montville 6, and 2011 NEI data for Montville 5 and New Haven Harbor 1 as surrogates for projecting future year emissions. Attachment 2 provides a compilation of possible Connecticut peaking units in 2018 along with references for recommended projected future year emissions.

Mismatches between CAMD's AMPD and NEEDS v5.13

DEEP notes that there are many data mismatches, based on facility name, unit ID, or unit configuration, between Clean Air Market's Division (CAMD) Air Markets Program Data (AMPD) and NEEDS v5.13. Indeed, the reader may note that DEEP's references in this letter to facilities/unit identifiers may not match the corresponding information in NEEDS v5.13, and that is why DEEP provided ORIS Plant Codes

² http://www.ct.gov/deep/lib/deep/air/regulations/comments_other/Connecticut_DEEP_EMP_Comments.pdf

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when referring to facilities/units. DEEP further notes that many of the mismatches occur between simple cycle and combined cycle units. **DEEP recommends including a unit level identifier such as an EIS identifier, or the CAMD Database Unit ID, in both AMPD and NEEDS to facilitate unit matching.** Not only would this improve CEMS temporalization profiles in IPM, but it would also improve comparisons of NEEDS with other databases used for modeling purposes, such as the NEI and ERTAC EGU. In its 2011 Modeling Platform comments, DEEP provided a crosswalk with EIS identifiers/ORIS code/ORIS ID for Connecticut's EGUs and other point sources.

Incorrect ORIS plant codes/facility IDs and missing NOx combustion/post-combustion controls in NEEDS for Devon 15-18, ORIS 544 and Middletown 12-15 ORIS 562

AMPD includes the Facility Name "Devon" and ORISPL 544 for units 15-18 while NEEDS v5.13 includes a Plant Name of GenConn Devon LLC and ORIS Plant Code of 57070. Also, AMPD includes the Facility Name "Middletown" and ORISPL 562 for units 12-15 while NEEDS v5.13 includes a Plant Name of GenConn Middletown LLC and ORIS Plant Code of 57068. **DEEP recommends that the Facility Names and ORISPLs for these units in NEEDS v5.13 be changed to the AMPD Facility Names and ORISPLs.**

NEEDS v5.13 does not include NOx combustion controls and NOx post-combustion controls for Devon 15-18 and Middletown 12-15. Consequently, the NOx emission rates in NEEDS v5.13 are much higher than permitted NOx rates. **DEEP recommends adding "H2O" to the NOx combustion control column and "SCR" to the NOx post-combustion control column of NEEDS v5.13. DEEP further recommends changing the NOx rate for Devon 15-18 and Middletown 12-15 to 0.0092 lbs/MMBtu (gas-fired permit rate)/0.023 lbs/MMBtu (oil-fired permit rate) instead of 0.7315 lbs/MMBtu in NEEDS v5.13.**

AL Pierce, ORIS 6635 NOx combustion controls

DEEP recommends that EPA remove the "DLNB & H2O" entry in the NOx combustion control column in NEEDS v5.13. The unit has a GE OpFlex system for maximizing output and regulating pollutant emissions simultaneously, but does not have DLNB and H2O.

Branford, ORIS 540 NOx combustion controls

DEEP recommends that EPA remove the "H2O" entry in the NOx combustion control column in NEEDS v5.13. The unit is uncontrolled.

Cos Cob ORIS 542 UN10-UN12 SO2 permit rate (lb/MMBtu)

DEEP recommends that EPA change the SO2 permit rate from 0.55 to 0.0015 lb/MMBtu for Cos Cob UN10-UN12 in NEEDS v5.13. UN10-UN12 are limited to the lower SO2 rate as a collateral condition in the permits for UN13-UN14.

Plainfield Renewable Energy

Plainfield Renewable Energy, a 37.5 MW biomass fluidized bed gasification power plant, began operating in 2013. DEEP has added the facility to the NEI, and the plant parameters and identifiers are provided in Attachment 3 of this letter. **DEEP recommends that EPA add Plainfield Renewable Energy to NEEDS.**

Bridgeport Harbor 2, ORIS 546; Norwalk Harbor 1, 2 and 10, ORIS 548

DEEP notes that the oil-fired boiler Bridgeport Harbor 2 is not listed in NEEDS v5.13. Although PSEG Power Connecticut LLC revoked Bridgeport Harbor 2's registration in December 2013 and the unit is no longer operating, **DEEP recommends that EPA include Bridgeport Harbor 2 on the NEEDS**

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5.13v3_Retired_by 2016 tab in NEEDS v5.13. DEEP also recommends that Norwalk Harbor 1, 2, and 10 be moved from the NEEDS 5.13v3_Active tab to the NEEDS 5.13v3_Retired_by 2016 tab as the units were retired in 2013.

Bridgeport Energy, ORIS 55042

DEEP recommends that EPA add "LNB" to the NOx combustion control column in NEEDS v5.13.

Milford Power, ORIS 55126

DEEP recommends that EPA remove "H2O" from and add "LNB" to the NOx combustion control column in NEEDS v5.13.

New Haven Harbor, ORIS 6156, units 2-4

DEEP recommends that EPA remove "DLNB" from the NOx combustion control column (but leave "H2O") and add "SCR" to the NOx post-combustion control column in NEEDS v5.13.

Wallingford Energy LLC, ORIS 55517, units CTG1-CTG5

DEEP recommends that EPA remove "H2O" from and add "LNB" to the NOx combustion control column in NEEDS v5.13.

SO2 permit rate for North Main Street, ORIS 581, unit 5; Bridgeport Station, ORIS 568, unit 4; Torrington Terminal, ORIS 565, UN10; South Meadows, ORIS 563, units 11-14; Middletown, ORIS 562, unit 10; Franklin Drive, ORIS 561, UN19; Tunnel, ORIS 557, unit 10; Branford, ORIS 540, UN10, Devon, ORIS 544, unit 10

DEEP recommends changing the SO2 permit rate from 0.55 lb/MMBtu to 0.33 lb/MMBtu for North Main Street unit 5, Bridgeport Station unit 4, Torrington Terminal UN10, South Meadows units 11-14, Middletown unit 10, Franklin Drive UN19, Tunnel unit 10, Branford UN10, and Devon unit 10 because the applicable regulatory limit in Regulations of Connecticut State Agencies section 22a-174-19a was revised in 2014.

NOx rates for Branford, ORIS 540, UN10; Cos Cob, ORIS 542, UN10-UN14; Devon, ORIS 544, unit 10; Franklin Drive, ORIS 561, UN19; Middletown, ORIS 562, unit 10, and Torrington Terminal, ORIS 565, UN10

It appears that default NOx rates from AMPD are used for Branford UN10, Cos Cob UN10-UN14, Devon unit 10, Franklin Drive UN19, Middletown unit 10 and Torrington Terminal UN10. All of these units have been stack tested within the last five years, and the stack tested NOx rates are substantially lower than the AMPD default NOx rate of 1.2 lbs/MMBtu. DEEP recommends using the most recent NOx stack test rate of 0.616 lb/MMBtu for Branford UN10; 0.152, 0.173, 0.188, 0.153 and 0.188 lb/MMBtu respectively for Cos Cob UN10-UN14; 0.709 lb/MMBtu for Devon unit 10; 0.68 lb/MMBtu for Franklin Drive UN19, 0.606 lb/MMBtu for Middletown unit 10, and 0.707 lb/MMBtu for Torrington Terminal UN10 in NEEDS v5.13.

2) Model inputs and activity data used to develop mobile source emission inventories

EPA requests comment on the mobile source model input data (including both the databases used to create emission factors and the vehicle miles traveled (VMT) and vehicle population activity data used to compute the emissions) used to develop the projected future mobile source emission inventories.

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DEEP has provided updated extended idle run hours based on EPA national estimates and fractional national demand presented in an EPA analysis. DEEP intends to continue working with Virginia, Georgia, the University of North Carolina, MARAMA, EPA OTAQ and EPA OAQPS to support improved extended idle emission estimates. DEEP intends to provide the University of North Carolina coordinates and truck stop data to support efforts to better estimate and support detailed Sparse Matrix Operator Kernel Emissions (SMOKE) grid allocations for these extended idle emissions in support of the 2011 modeling platform. **DEEP recommends that EPA use the latest data that DEEP has provided and the updated methodology as part of the ongoing extended idle data improvement efforts.**

DEEP intends to provide 2018 MOVES inputs in support of the 2011 Modeling Platform. These 2018 MOVES inputs, including VMT, will be loaded into EIS, will not reflect increased diesel sales data, and will be based on current EPA converters upgraded to accommodate current Federal Highway Administration Highway Performance Monitoring System definitions. DEEP has not implemented enhancement for future projections of fuel type or vehicle mix in these inputs and DEEP understands that some improvements may be possible based on Annual Energy Outlook (AEO) projections. **DEEP recommends that EPA use the 2018 MOVES inputs provided by DEEP with augmentation as deemed appropriate (i.e. projected fuel type, vehicle mix) in future modeling efforts.**

DEEP recommends that EPA include documented issues for MOVES and converters in the frequent questions on the MOVES website, as identified in Attachment 4 of this letter, so that stakeholders can make an informed decision on what is needed to properly model emissions using MOVES.

Unfortunately, states are often not aware of these data or the limitations hidden in the MOVES converters and are not aware of data assumptions embedded in the MOVES model itself. DEEP acknowledges that EPA may not act to provide documentation on the 2018 modeling platform timeframe but hopes that EPA will do so at some point in the future.

DEEP recommends that EPA treat diesel sales fractions as year specific data and apply an age distribution to obtain a reasonable estimate of VMT driven by diesel versus gasoline vehicles. Section 4.3.1.1 of EPA's draft technical support document, entitled "VMT and vehicle population", used AEO projections to estimate projection factors for 2018 VMT for light duty truck and light duty passenger vehicles. The EPA methodology uses a direct ratio for diesel sales counts for a base and future year only, which may not be appropriate in all circumstances and is not very accurate. Mobile inputs have applied the age distribution to national diesel sales fractions when local diesel allocation data is not available. The practice of applying the age distribution acknowledges that not every car in 2011 is a 2011 model year and not every car in 2018 is a 2018 model year.

DEEP further recommends that these improved diesel fuel allocations be incorporated into MOVES 2014 default databases. The concept of applying AEO projections to improve MOVES emission estimates and incorporation of this data into the MOVES2014 default database appears to be worthwhile. MOVES2010b defaults appear to be low for 2011, future years and possibly earlier years.

DEEP agrees with EPA's attempts to characterize changes in the fleet using AEO data but has some concerns. **DEEP recommends that EPA develop defined procedures for states to use as a methodology when projecting future year emissions.**

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3) Projection data and methods

EPA seeks comment on the data used to project point and nonpoint source emissions from 2011 to 2018, and on the methods and assumptions used to implement the projections. In particular, EPA seeks comment on its assumptions regarding the manner in which state-specific control programs will be implemented.

Aircraft Emissions Estimates

DEEP believes that the use of 2013 Federal Aviation Administration (FAA) Terminal Area Forecast (TAF) data would provide a more conservative and better estimate of aircraft emissions for Connecticut than that provided by the current 2012 FAA TAF data. DEEP also believes that the EPA methodology is overly complex and does not endorse replacing FAA TAF data with national averages. The EPA methodology does not present a significant emission impact for 2018 activity estimates, but DEEP is concerned that EPA is throwing out reliable FAA TAF data and replacing it with calculated averages. DEEP also raises caution that FAA TAF data should be the basis for projections to other years past 2018 and not the general growth rates estimates generated for bringing 2011 activity to 2018 activity. The restrictions imposed on FAA TAF data for airport projections eliminate good data. The elimination of zero growth FAA TAF data and replacement with a national average does not appear to be warranted. The elimination of FAA TAF data when counts are less than 1000 could be warranted if projected growth rates were not for an explicit year, but the FAA TAF data is year specific and does not need this special treatment. Growth of the inventory activity data does require special treatment when the base year count is zero. ***DEEP recommends that EPA use 2013 FAA TAF data rather than the EPA projection methodology for projecting future year aircraft emissions.***

Non-IPM Point and Non-Point Growth and Control Factors

In Section 4.2 of the draft "Technical Support Document (TSD): Preparation of Emissions Inventories for the Version 6.0, 2011 Emissions Modeling Platform" (February 26, 2014), EPA indicates that:

"In estimating future year emissions, EPA assumed that emissions growth does not track with economic growth for many stationary non-IPM sources. This "no-growth" assumption is based on an examination of historical emissions and economic data. While EPA is working toward improving the projection approach in future emissions platforms, the Agency is still using the no-growth assumption for the 2011 platform unless states provided specific growth factors for 2018."

EPA's draft 2018 base-case inventory uses this no-growth assumption for a variety of non-IPM emission categories, most notably for all stationary source fuel combustion occurring in industrial, commercial/institutional and residential applications, except for residential wood burning. Connecticut worked with other Northeast states, as part of a workgroup organized by the Mid-Atlantic Air Management Association (MARAMA), to examine the appropriateness of EPA's proposed growth factors for developing inventories for use with the Emission Modeling Framework (EMF) in upcoming regional modeling applications for ozone, fine particles and regional haze. In general, Connecticut and most other states agreed that projected growth of non-IPM source emissions could be better approximated using surrogates such as the 2014 Annual Energy Outlook (AEO) regional fuel consumption projections developed by the U.S. Energy Information Administration, state-level employment projections, state-level population projections, or other available data. Many states, including Connecticut, also agreed that it was appropriate to use EPA-developed growth/control factors for several categories (e.g., residential wood burning, gasoline distribution, portable fuel containers, commercial marine vessels and railroad equipment).

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At DEEP's request, MARAMA's contractor (Ed Sabo of SRA International) is submitting a separate comment letter and data files to the docket describing specific Non-IPM Point and Non-Point growth factors, as well as control files for certain state-specific control programs, that DEEP would like EPA to use to calculate 2018 emissions for Connecticut. The files provided by SRA will also include the source of the data and, in some cases, explanatory comments. ***DEEP requests that EPA use these factors when developing the final 2018 inventory.***

DEEP also requests that EPA's final documentation for the 2018 inventory decouple the growth and control portions of each growth/control factor that EPA included in the 2018 inventory proposal. Doing so will ensure greater transparency of EPA's methodology by providing an explicit breakdown of the portion of each factor that is due to growth and the portion that is due to required controls. This information will also assist states with applying the same approach when developing inventories for other years (e.g., 2028 regional haze inventories).

Connecticut Fuel Sulfur Limits

DEEP recently noticed that EPA's 2011 inventory includes sulfur dioxide emission factors for distillate and residual fuel oil used by industrial and commercial/institutional boilers that are incorrect for Connecticut. EPA used a distillate oil emission factor of 0.426 lbs/1000 gallons (approximately 30 ppm sulfur) for SCCs 2102004001 and 2103004001, while the correct emission factor for Connecticut in 2011 should be 42.6 lbs/1000 gallons (approximately 3,000 ppm sulfur). EPA used a residual oil emission factor of 353.25 lbs/1000 gallons (approximately 22,500 ppm sulfur) for SCCs 2102005000 and 2103005000, while the correct emission factor for Connecticut in 2011 should be 142 lbs/1000 gallons (approximately 10,000 ppm). DEEP did not refer to these discrepancies in our comments on the 2011 emission modeling platform. Based on a review of 2011 EPA documentation, it appears that the error on the distillate emission factor may have been applied to multiple states.

DEEP would prefer, if possible, for EPA to make the corrections noted above in the 2011 inventory. However, the control factor files that SRA is submitting to the docket on DEEP's behalf (see above) assume that such corrections to the 2011 data will not occur. ***The SRA control percentages for the applicable SCCs assume the 2011 inventory values remain uncorrected and are set at a level that produces 2018 emissions consistent with sulfur limits that will be in place at that time (i.e., 15 ppm sulfur for distillate oil and 3,000 ppm for residual oil). Those control percentages will not be applicable if EPA decides to correct the 2011 inventory. If EPA does update the 2011 inventory, DEEP will be pleased to provide the updated control file to EPA.***

4) Existing control techniques

EPA seeks comment on whether information on existing controls given in the inventory flat files is incomplete or erroneous. DEEP provided control device codes for the EGU point source emission units in the Attachment 4 tab of its 2011 Modeling Platform comments (see footnote 2 of this letter) and indicated that DEEP intends to submit control device code categories for other sectors of the NEI at a later date (at the end of 2014 or early 2015). Also, in its 2011 Modeling Platform comments, DEEP recommended that EPA provide a control device code for Low Sulfur Content Fuel. ***DEEP requests that EPA implement these requested control device code changes for EGUs.***

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5) Temporal allocation

EPA seeks comment on the allocation of the emission inventories to month, day and hour for all types of emission processes. In particular, the EPA seeks information that could help improve the temporal allocation in 2018 of emissions from several source categories, including EGUs. As mentioned in the comment on Connecticut peaking units, DEEP provided 2011 temporal operations and emissions for most of the non-CEM combustion turbines in its 2011 Modeling Platform comments (see footnote 2 of this letter). ***DEEP recommends that EPA consider these data when temporalizing future year emissions.***

DEEP appreciates the opportunity to comment on this modeling platform. If you have any questions regarding this letter, please do not hesitate to contact Wendy Jacobs at 860-424-3457.

Sincerely,



Gary S. Rose, Director
Engineering & Enforcement Division

ATTACHMENT 1 Connecticut Municipal Waste Combustor 2011 Actual, 2018 projected and permitted NOx/SO2 emissions

Plant Name/Unit ID/ORIS Plant Code	EIS Identifiers	Actual 2011 NOx emissions (tons)	Projected NOx total from IPM v5.13 parsed files for 2018 (tons)	Projected NOx increase from 2011 to 2018 (tons)	Permitted NOx emissions (tpy)	Actual 2011 SO2 emissions (tons)	Projected SO2 total from IPM v5.13 parsed files for 2018 (tons)	Projected SO2 increase from 2011 to 2018 (tons)	Permitted SO2 emissions (tpy)
Covanta Mid-Connecticut 11, ORIS 54945	46362913	260	442	182	420	389	104.6	100.71	457
Covanta Mid-Connecticut 12, ORIS 54945	46362613	267	442	175	420	9.88	104.6	94.72	457
Covanta Mid-Connecticut 13, ORIS 54945	46362713	276	442	166	420	8.8	104.6	95.8	457
Wheelabrator Bridgeport 1, ORIS 50883	46285713	401	578	177	501	16.56	81	64.44	455.6
Wheelabrator Bridgeport 2, ORIS 50883	46285513	413	578	165	501	21.69	81	59.31	455.6
Wheelabrator Bridgeport 3, ORIS 50883	46285613	406	578	172	501	21.99	81	59.01	455.6
American Ref-Fuel of SE CT BLR1, ORIS 10646	46284313	202	223	21	332.9	35.9	40.6	4.7	350
American Ref-Fuel of SE CT BLR2, ORIS 10646	46284413	197	223	26	332.9	24.59	40.6	16.01	350
Wheelabrator Lisbon BW1, ORIS 54758	962013	117	190	73	148	18.92	38.6	19.68	42.45
Wheelabrator Lisbon BW2, ORIS 54758	961813	126	190	64	148	22.03	38.6	16.57	42.45
Covanta Bristol Energy UNIT1, ORIS 50648	46158013	96	272	176	112	10.112	28	17.888	37.9
Covanta Bristol Energy UNIT2, ORIS 50648	46157913	151	305	154	191.7	6.434	28	21.566	37.7
Covanta Wallingford Energy B101, ORIS 50664	46137513	47	61	14	88.7	2.002	32	29.998	20.22
Covanta Wallingford Energy B102, ORIS 50664	46137613	17	76	59	88.7	0.868	32	31.132	20.22
Covanta Wallingford Energy B103, ORIS 50664	46137713	47	76	29	88.7	1.41	32	30.59	20.22
Exeter Energy LP 1-2 (tire burners), ORIS 50736	41346813	70	145	75	124.95	64.9	91.5	26.6	109.27
Total		3093	4821	1728	4419.55	269.976	958.7	688.724	3768.23

ATTACHMENT 2 Possible Connecticut peaking units in 2018

Facility Name	ORIS	Unit ID	EIS Identifier	CAMD Database Unit ID	Expected future emissions
Brainford	540	UN10	107730213	326	See Attachment 3 of footnote 2
Bridgeport Harbor	568	41	46285813	374	See Attachment 3 of footnote 2
Cas Cob	542	10	41011413	327	See Attachment 1 of footnote 2
Cas Cob	542	11	41011313	328	See Attachment 1 of footnote 2
Cas Cob	542	12	41011213	329	See Attachment 1 of footnote 2
Cas Cob	542	13	99525113	90364	See Attachment 1 of footnote 2
Cas Cob	542	14	99528213	90365	See Attachment 1 of footnote 2
Devon	544	10	46138913	330	See Attachment 3 of footnote 2
Franklin Drive	551	UN19	107732013	350	See Attachment 3 of footnote 2
Middletown	562	10	46361313	352	See Attachment 3 of footnote 2
Norwich	581	51	107730113	5093	See Attachment 3 of footnote 2
South Meadow	563	11	46362813	46362813	See Attachment 3 of footnote 2
South Meadow	563	12	46362413	46362413	See Attachment 3 of footnote 2
South Meadow	563	13	46362213	46362213	See Attachment 3 of footnote 2
South Meadow	563	14	46362013	46361913	See Attachment 3 of footnote 2
Torrington Terminal	565	UN10	107732013	370	See Attachment 3 of footnote 2
Tumam	557	10	107730013	349	See Attachment 3 of footnote 2
Waterside Power	56189	41	88748813	89487	See Attachment 2 of footnote 2
Waterside Power	56189	51	88748913	89488	See Attachment 2 of footnote 2
Waterside Power	56189	71	88749013	89718	See Attachment 2 of footnote 2

Simple cycle combustion turbines with CEMS

Facility Name	ORIS	Unit ID	EIS Identifier	CAMD Database Unit ID	ERTAC v2.2 projected 2018 NOx emissions (tons)	ERTAC v2.2 projected 2018 SO2 emissions (tons)	2018 IPM projected NOx emissions (tons)	2018 IPM projected SO2 emissions (tons)
AL Pierce (CMEEC)	6635	AP-1	88754513	90114	2	0	0.108	0
Devon	544	11	46136613	331	1	0	0.779	0
Devon	544	12	46136113	332	1	0	0.747	0
Devon	544	13	46136513	333	1	0	0.772	0
Devon	544	14	46136213	334	1	0	0.903	0
Devon	544	15	99521413	NA	0	0	0.7315	0
Devon	544	16	99521313	NA	0	0	0.7315	0
Devon	544	17	99521713	NA	0	0	0.7315	0
Devon	544	18	99521613	NA	0	0	0.7315	0
Middletown	562	12	99518713	NA	0	0	0.7315	0
Middletown	562	13	99518613	NA	0	0	0.7315	0
Middletown	562	14	99518513	NA	0	0	0.7315	0
Middletown	562	15	99518413	NA	0	0	0.7315	0
New Haven Harbor	6156	NHHSZ	10723813	NA	10	1	0.08	0
New Haven Harbor	6156	NHHS3	107238013	NA	10	1	0.08	0
New Haven Harbor	6156	NHHS4	107238113	NA	10	1	0.011	0
Wallingford Energy	5517	CT01	88753913	4827	1	0	0.01	0
Wallingford Energy	5517	CT02	88754013	4828	1	0	0.012	0
Wallingford Energy	5517	CT03	88754113	4829	2	0	0.01	0
Wallingford Energy	5517	CT04	88754213	4930	2	0	0.012	0
Wallingford Energy	5517	CT05	88754313	4931	2	0	0.012	0
Waterbury Generation	5629	10	99539613	90207	20	0	0.065	0

Oil-fired boilers and coal-fired boiler

Facility Name	ORIS	Unit ID	EIS Identifier	CAMD Database Unit ID	ERTAC v2.2 projected 2018 NOx emissions (tons)	ERTAC v2.2 projected 2018 SO2 emissions (tons)	2011 NEI NOx emissions (tons)	2011 NEI SO2 emissions (tons)
Bridgeport Harbor	568	3	46285413	373	366	NA	NA	NA
Montville	546	5	48258613	343	NA	NA	7.8	11.1
Montville	546	6	48258513	344	NA	NA	NA	NA
Middletown	562	4	46360913	355	15	NA	NA	NA
New Haven Harbor	6156	11	46449513	2815	NA	NA	50.3	67.6

ATTACHMENT 3

Plainfield Renewable Energy LLC

EIS Facility ID: 16734111

T-Town P-Premise C-Client: T145 P0074 C08589

Facility Name: PLAINFIELD RENEWABLE ENERGY LLC

NAICS Code: 221118 - Other Electric Power Generation

EIS Emissions Unit ID: 107797313

PointID: P0049 (CTBAM)

Emissions Unit Description: Biomass Fluidized Bed Gasification Plant

Design Capacity: 523.0 Million BTU per hour

ATTACHMENT 4

Issues with MOVES converters

MOVES Frequent Questions provides only two high level introduction entries for converters that can be used to transition from MOBILE62 to MOVES. There are no MOVES Frequent Questions identifying known issues for converters or available alternatives. EPA can better support states in finding and resolving issues with MOVES input processing by including documented issues for MOVES and converters in MOVES Frequent Questions so that stakeholders can make an informed decision on what is needed to model emissions properly using MOVES. Examples of issues that have not been identified that could impact the 2011 modeling platform are as follows:

DEEP updated the EPA's **vmt-converter-road-veh16-20100209.xls** to align with the 14 HPMS Road Types defined in current FHWA standard. This improved VMT mapping and ramp fraction inputs. This was an improvement that was implemented for Connecticut, but may not have been considered in other states.

Diesel sales data used in the EPA's **vmt-converter-road-veh16-20100209.xls** and **reg-distrib-converter-veh16-20100209.xls** are fixed at 1996 sales percentages, which under estimates diesel populations and VMT for both the base and future years. A proposed draft 16 vehicle VMT converter updated structure has been provided to MOBILE@EPA.gov for consideration. It is anticipated that this converter would provide improved updated results, when provided diesel sales data for 1996 thru 2050. Refinements to diesel sales fractions improve vehicle VMT mapping in the converter but do not improve fuel fractions applied to MOVES calculations. The benefit of this update cannot be quantified until data is provided.

EPA's **vmt-converter-road-veh16-20100209.xls** appears to use a single VMT mix without MOVES road class based localization, but it is not clear what impact this has on HPMSVtypeID VMT allocations. Connecticut and other states noted significantly more passenger vehicle populations than truck populations and reallocated VMT and population to Source Type Population 20 from Source Type Populations 31 – passenger truck and 32 – light commercial truck. DEEP expected some changes in Source Type Populations 31 and 32 inputs when the lightest portion of the duty truck population was reduced. Other than a minor shift between the two source types involved, not much changed. DEEP anticipated a change in some MOVES inputs to account for the elimination of a significant population of the smaller and cleaner vehicles in Source Type Populations 31 and 32, but this concern has not been resolved. Regulatory class assignments within Source Type Populations 31 and 32 are fixed in MOVES and in regulatory guidance via MOBILE62 vehicle mappings. The issue of reallocation between Source Type Populations 20, 31 and 32 also calls into question the appropriate fuel type fractions to assign. Heavier trucks are more often diesel than lighter trucks. Also, it is expected that alternative fuels and electrification would have greater traction in light trucks in the future. Past practices localized VMT data with HPMS counts for the HPMS Road Types mapped to the MOBILE62 facility type, but MOVES now works off a completely different paradigm, which uses the single mix to estimate an appropriate RoadTypeDistribution and VMT for HPMSVtypeID – year. The converter also estimates HourVMTFraction without knowing hourly speeds. EPA has suggested that each state develop its own conversion process. However, states have limited resources and find comfort in using a globally accepted process that is shared by others facing the same challenges. The converter process is complex, and not all changes are an improvement for every state.