

SULFUR & BIOHEAT REQUIREMENTS FOR No. 2 HEATING OIL IN THE NORTHEAST & MID-ATLANTIC STATES

Send updates to Jim Collura jim.collura@nefi.com 202-441-8857

Updated: 6-29-2017

Page 1 of 6

CHART 1. SUMMARY

LOW SULFUR & BIODIESEL BLENDING REQUIREMENTS IN THE NORTHEAST/MID-ATLANTIC							
All data is listed for No. 2 Fuel Oil only. Compliance dates are July 1 of that year unless otherwise specified. Cities are listed in <i>italics</i> .							
	Previous Sulfur	2012	2014	2015	2016	2017	2018+
New York State	2,500-5,000ppm	15ppm					
<i>New York City (Bioheat)</i>		2% Bio				5% Bio*	
<i>Philadelphia, PA (Sulfur)</i>	2,000ppm			15ppm			
Delaware	3,000-10,000ppm				15ppm		
New Jersey	2,000-3,000ppm		500ppm		15ppm		
Maryland	3,000ppm		2,000ppm		500ppm		
Pennsylvania	2,000-5,000ppm				500ppm		
Massachusetts	3,000ppm		500ppm				15ppm
Rhode Island (Sulfur)	5,000ppm		500ppm				15ppm
Rhode Island (Bioheat)		2% Bio	3% Bio	4% Bio	5% Bio		
Vermont	20,000ppm		500ppm				15ppm
Connecticut	3,000ppm		500ppm				15ppm
Maine	3,000-5,000ppm				15ppm		
New Hampshire	4,000ppm				15ppm		
<i>Washington, DC</i>	10,000ppm				500ppm		15ppm

*New York City will require 5% blends on October 1, 2017 and after a study and report, 10% in 2025, 15% in 2030 and 20% in 2034.

DISCLAIMER: This document provides general information regarding the status of state and local sulfur and bio-blending standards for heating oil and other distillate fuels. It is subject to revision and is not intended to provide guidance on legal or regulatory compliance obligations. Please consult with a qualified legal professional or contact the state association or regulatory agency for more information.

CHART 2. STATE-BY-STATE DETAILS

State	Sulfur	Bio-blend	Waiver Procedures	Important Notes
<p>Connecticut Contact: Chris Herb, CEMA chris@ctema.com Current as of 6/9/2017</p>	<p>Previous: 3,000 PPM July 1, 2014: 500 PPM July 1, 2018: 15 PPM</p>	<p>Requirements of 2011 Bioheat law (below) would have only gone into effect if bordering states had enacted similar laws.</p> <p>July 1, 2011: 2% blend July 1, 2012: 5% Blend July 1, 2015: 10% Blend July 1, 2017: 15% Blend July 1, 2020: 20% Blend</p> <p>Note: In 2017 the state General Assembly considered legislation (S.B.No.777) to move forward with the bio mandate. It was not enacted.</p>	<p>Sulfur Waiver: DEEP Commissioner may suspend for up to 90 days sulfur requirement to address supply shortages. Requests must be submitted in writing to the Bureau of Air Management, Director of Engineering & Enforcement and must include a detailed statement describing the reason for the fuel shortage and the acute nature of the shortage (a fuel shortage may be of a type for firing in a particular emission source or generally throughout the state); a statement that the acute nature of the shortage is the only reason for the request; and a signature of a responsible official as described in RCSA §22a-174-2a(a). The DEEP commissioner shall notify within five days. Can be preempted when a Governor declares that an energy or fuel supply emergency exists.</p> <p>Bioheat Waiver: The Dept. of Consumer Protection can temporarily waive bio- blending requirements after receiving a petition from the Distillate Advisory Board for no less than 30 days and no more than 45 days. The waiver may be renewed if needed. (The state’s Bioheat requirements only go into effect if MA, RI and NYS establish similar requirements).</p>	<p>Per sulfur regulations Table 19b-1:</p> <p>Residual oil (No. 4, 5 and 6 fuel oils; or any bio-blend thereof) July 1, 2014: 10,000 PPM July 1, 2018: 3,000 PPM</p> <p>Aviation fuel (used in a stationary source) July 1, 2014: 3,000 PPM July 1, 2018: No change (3,000PPM)</p> <p>Kerosene July 1, 2014: 400 PPM July 1, 2018: 15 PPM</p> <p>Sulfur law: 296 CGS §16a-21a Sulfur regulations (adoption notice 12/23/2013): RCSA §22a-174-19b Bioheat law: 296 CGS §16a-21b DEEP Guidance document Conditional Waiver (6/25/14)</p>
<p>Delaware Contact: Ellen Valentino, MAPDA ellen@mapda.org Current as of 4/26/2017</p>	<p>Previous for New Castle County: 10,000 PPM State: 3,000 PPM July 1, 2016: 15 PPM</p>	<p>None.</p>	<p>Unknown.</p>	<p>Residual fuel July 1, 2016: 5,000 PPM</p> <p>“Other Fuel” July 1, 2016: 10,000 PPM</p> <p>Sulfur regulations: 7 Del.C. §1108</p>
<p>District of Columbia Contact: Ellen Valentino, MAPDA ellen@mapda.org Current as of 4/26/2017</p>	<p>Previous: 10,000 PPM July 1, 2016: 500 PPM July 1, 2018: 15 PPM</p>	<p>None.</p>	<p>Sulfur Waiver: Any temporary suspension or increase in sulfur content issued for highway or off-road diesel fuel by the U.S. EPA shall also apply to fuel oil in the District of Columbia. However, it will only last as long as the duration set forth by EPA and the sulfur content for No. 2 and lighter fuels may not exceed 500ppm. Fuel oil that is intended for purchase, sale, offering, storage, or use outside of DC would be exempt from the rule (see proposed rule Sections 801.5, 801.6 and 801.7).</p>	<p>Sulfur Rule: Establishes new sulfur standards for Nos. 2, 4 and 5 fuel oil and related storage, reporting and fuel testing requirements. 801.9 also imposes new product transfer and recordkeeping requirements for both fuel companies and non-residential users. (See 62 DCR 14839)</p> <p>No. 4 Fuel Oil July 1, 2016: 2,500PPM</p> <p>No. 5 and Heavier Fuel Oils July 1, 2016: Banned (no known users in DC)</p>

DISCLAIMER: This document provides general information regarding the status of state and local sulfur and bio-blending standards for heating oil and other distillate fuels. It is subject to revision and is not intended to provide guidance on legal or regulatory compliance obligations. Please consult with a qualified legal professional or contact the state association or regulatory agency for more information.

SULFUR & BIOHEAT REQUIREMENTS FOR No. 2 HEATING OIL IN THE NORTHEAST & MID-ATLANTIC STATES

Updated: 6-29-2017

Send updates to Jim Collura jim.collura@nefi.com 202-441-8857

Page 3 of 6

<p>Maine Contact: Jamie Py, MEMA Jamie@MaineEnergyMarketers.com Updated 6/8/2017 with information on residual fuel oil sulfur transition and exemption for manufacturing.</p>	<p>Current: 3,000-5,000 PPM July 1, 2016: 50 PPM <i>(Repealed on 5/10/15)</i> July 1, 2018: 15 PPM*</p>	<p>None. A study mandated by the state on April 2011 did not recommend a bio mandate but suggested coordination nationally and regionally on related policies moving forward.</p>	<p>Unknown. Sulfur regulation exempts distillate fuel that is used in manufacturing.</p>	<p>May 10, 2015: HP416 (Pub.L.66 LD 603) was enacted that eliminates 50 PPM on July 1, 2016 and moves 15 PPM "distillate fuel" state-wide from Jan. 1st to July 1st, 2018.</p> <p>Residual Fuel Oil Before July 1, 2018: 20,000 PPM in Central Maine, Downeast, Aroostook County, NW Maine Air Quality Control Region (AQCR) & Metro-Portland AQR (outside the Portland Peninsula AQCR); and 15,000 PPM in Portland Peninsula Air Quality Control Region. July 1, 2018: 5,000 PPM for above regions.</p> <p>Sulfur law: 38 MRS §603-A</p>
<p>Maryland Contact: Ellen Valentino, MAPDA ellen@mapda.org Updated Nov. 13, 2014 Current as of 4/26/2017</p>	<p>Previous: 3,000 PPM Nov. 1, 2014: 2,000 PPM July 1, 2016: 500 PPM</p>	<p>July 1, 2008: At least 50% of the oilheat equipment in use in state buildings is required to use at least a 5% biofuel blend. There is also a tax credit for the use of Bioheat fuels (see "important notes" on the right).</p>	<p>Unknown.</p>	<p>Sulfur Regulations: COMAR 03.03.05.04</p> <p>Bioheat Law: Md. STATE FINANCE AND PROCUREMENT Code Ann. § 14-408(c)</p> <p>Bioheat Tax Credit: Individuals & businesses may claim a tax credit of 3 cpg for 5% Bioheat blend, up to the lesser of \$500 or state income taxes for the year. The credit is available for tax years beginning on or after Jan. 1, 2008, but before Jan. 1, 2018, and remains effective for 10 years, through June 30, 2018. See: Md. TAX-GENERAL Code Ann. § 10-727 (Summary)</p>
<p>Massachusetts Contact: Michael Ferrante, MEMA mferrante@massoilheat.org Updated 6/8/2017 with information on residual oil sulfur transition.</p>	<p>Previous: 3,000 PPM July 1, 2014: 500 PPM July 1, 2018: 15 PPM</p>	<p>Requirements of 2008 Bioheat law (below) have been delayed indefinitely.</p> <p>July 1, 2010: 2% Blend July 1, 2011: 3% Blend July 1, 2012: 4% Blend July 1, 2013: 5% Blend</p> <p>Other: State regulators are currently considering an expansion of renewable thermal energy credits to include biofuel-blended heating oil.</p>	<p>Sulfur waiver: While there is no formal process under either the statute or existing regulations, the Governor has general authority to declare statewide emergencies. In the event of a supply shortage or other emergency, it is believed he will likely consult with state regulators and neighboring governors regarding possible suspension of sulfur requirements. MEMA has asked for additional guidance from DEP regarding the formalities or requesting such a waiver and other issues pertaining to the state's HO sulfur reduction regulations.</p> <p>Bioheat Waiver: No explicit waiver authority was provided in the underlying statute. The law does allow delay of implementation due to "lack of supply, lack of blending facilities or unreasonable cost" (as mentioned, it has indeed been delayed and has neither been implemented nor enforced).</p>	<p>Residual Oil Oct. 2, 1970: 5,000 PPM in Arlington, Belmont, Boston, Brookline, Cambridge, Chelsea, Everett, Malden, Medford, Newton Somerville, Waltham, and Watertown. June 23, 1975: 22,000 PPM in Berkshire APCD Prior to July 1, 2014: 22,000 PPM in Merrimack Valley APCD (10,000 PPM in Lawrence, Andover, North Andover and Methuen) July 1, 2014 – June 30, 2018: 10,000 PPM in Merrimack Valley APCD Before July 1, 2018: 10,000 PPM in rest of state July 1, 2018: 5,000 PPM statewide except Berkshire APCD</p> <p>Sulfur regulations: 310 CMR 7.05 Bioheat law: MGL ch.94 §249H.5(3) Note: DEP Guidance and a Conditional Waiver were issued prior to the July 1, 2014 compliance date but are no longer available online.</p>

DISCLAIMER: This document provides general information regarding the status of state and local sulfur and bio-blending standards for heating oil and other distillate fuels. It is subject to revision and is not intended to provide guidance on legal or regulatory compliance obligations. Please consult with a qualified legal professional or contact the state association or regulatory agency for more information.

SULFUR & BIOHEAT REQUIREMENTS FOR No. 2 HEATING OIL IN THE NORTHEAST & MID-ATLANTIC STATES

Send updates to Jim Collura jim.collura@nefi.com 202-441-8857

Updated: 6-29-2017

Page 4 of 6

<p>New Hampshire Contact: Bob Scully, OHCNH RJSculley@nhoilheat.com Current as of 6/8/2017</p>	<p>Current: 4,000 PPM July 1, 2018: 15 PPM</p>	<p>None.</p>	<p>Sulfur Waiver: The governor may allow temporary use of non-conforming fuels if there is a demonstrated need to do so based on an acute shortage of supply.</p>	<p>No. 4 Oil July 1, 2018: 2,500 PPM No. 5 or 6 Oil July 1, 2018: 5,000 PPM Sulfur Law: N.H. Rev. Stat. Ann. §125-C:10-d</p>
<p>New Jersey Contact: Eric DeGesero, FMANJ edegesero@fmanj.org Updated May 5, 2016 (Corrected sulfur specifications for No. 5, 6 and heavier fuels)</p>	<p>Previous: 2,000-3,000 PPM July 1, 2014: 500 PPM July 1, 2016: 15 PPM</p>	<p>None. Bioheat legislation (S-2268) was introduced on July 18, 2013 but was not approved by the state legislature.</p>	<p>Unknown.</p>	<p>No. 4 Fuel Oil July 1, 2014: 2,500 PPM No. 5, No. 6 and Heavier Fuel Oil July 1, 2014: 5,000 PPM (zones 1, 2, 3 & 5) July 1, 2014: 3,000 PPM (zones 4 & 6) Sulfur Law: N.J.A.C. 7:27-9.2</p>
<p>New York State Contact: Michael Trunzo, NYSEC michael.trunzo@srclawoffices.com (Updated 6/29/2017 with a revised explanation of the bioheat tax credit and passage of a blending requirement in the state legislature.)</p>	<p>Previous: 2,500-5,000 July 1, 2012: 15 PPM</p>	<p>None. Blending requirements exist for New York City, however (see NYC Section of this chart, below).</p>	<p>Sulfur Waiver: The governor may suspend sulfur requirements by executive order and at any time based on the determination, after consulting with NYSERDA that compliance is not feasible due to lack of adequate supply.</p>	<p>Bioheat Tax Credit: New York state residents that use biodiesel-blended heating oil are offered a "Clean Heating Fuel Tax Credit." The credit, currently renewed through 12/31/2020, offers one cent for each percent (%) of biodiesel blended into heating oil. The fuel must be used for space or water heating and maxes out at 20 cents per gallon. Starting with the 2017 tax year, blends of less than 6% are no longer eligible (see N.Y. Tax Law §210-B(25)). This change was made in anticipation of the passage of a 5% biodiesel blending requirement by the state legislature (see below) and avoids the concerns that ultimately led to the veto of similar legislation (A.07906) on January 10, 2014.</p> <p>Update - Current Bioheat Legislation: On June 21, 2017, the state legislature approved a bill (S.05422-A, A.06954-A) requiring a 5% biodiesel-blend for heating oil in Nassau, Suffolk and Westchester counties and New York City*. The bill would go into effect on July 1, 2018. The region of New York state affected by this bill constitutes 70% of its total heating oil market. It was approved by the state legislature on June 21, 2017 and awaits Gov. Cuomo's signature.</p> <p><i>*Note: New York City already enacted a 5% blend requirement that goes into effect on Oct. 1, 2017.</i></p> <p>Sulfur law: ENV §19-0325</p>

DISCLAIMER: This document provides general information regarding the status of state and local sulfur and bio-blending standards for heating oil and other distillate fuels. It is subject to revision and is not intended to provide guidance on legal or regulatory compliance obligations. Please consult with a qualified legal professional or contact the state association or regulatory agency for more information.

SULFUR & BIOHEAT REQUIREMENTS FOR No. 2 HEATING OIL IN THE NORTHEAST & MID-ATLANTIC STATES

Send updates to Jim Collura jim.collura@nefi.com 202-441-8857

Updated: 6-29-2017

Page 5 of 6

<p>New York City Contact: Rocco Lacertosa, NYOHA rlacertosa@nyoha.org Updated 6/8/2017 to include new bio-blending and sulfur requirements.</p>	<p>No. 2 Fuel Oil: 15 PPM as per state law. No. 4 Fuel Oil: 1,500 PPM Residual Fuel*: 3,000 PPM</p> <p><i>*Residual Fuel Oil is defined as No. 5 and 6 Fuel Oil. See Admin. Code §24-104.</i></p>	<p>Oct. 1, 2012: 2% Blend (Applies to No. 2, 4 & 6)</p> <p>Intro.0642 enacted on Oct. 18, 2016 requires:</p> <p>Oct. 1, 2017: 5% blend Oct. 1, 2025: 10% blend Oct. 1, 2030: 15% blend Oct. 1, 2034: 20% blend</p> <p>Additional requirements exist for city buildings.</p>	<p>Bioheat Waiver: Commissioner may issue three-month waivers for a particular type of boiler or fuel due to (1) insufficient supply, (2) price is 15% more or in preceding calendar year is 8% more than pure petroleum-based fuel, (3) use would void warranty or cause compatibility issues that cannot be fixed or cost 15%+ of replacement costs of a new compatible boiler, or (4) there is no applicable ASTM or other standard to govern biofuel spec for purposes of receiving bids and enforcing contracts. (Additional details and requirements found at §24-168(c))</p> <p>Sulfur Waiver: Commissioner may waive for three months (may be renewed in writing) sulfur requirements for No. 4 Fuel Oil due to insufficient supply but it may not exceed 3,000 PPM during waiver period.</p>	<p>Other Requirements (from NYC Admin. Code) Oct. 1, 2012: 2% blend required for residual fuel & No. 4 Fuel Oil (§24-168.1(b)(1)(iii)) Oct. 1, 2017: 5% bio-blend required for residual fuel and No. 4 Fuel Oil (§24-168.1(b)(1)(iii)) Jan. 1, 2020: Residual fuel may not be burned in a boiler (§24-168(c)) Jan. 1, 2030: No. 4 Fuel Oil may not be burned in a boiler (§24-168(d))</p> <p>Sulfur Law: NYC Admin. Code §24-169 Bioheat Law: NYC Admin. Code §24-168.1</p> <p>Note: Review and report on status of the bioheat law is required before the move to 10% bioheat. By 2020, law requires consultation with stakeholders on compatibility issues and to implement recommendations. Requires a formal report by Sept. 30, 2023 on whether "sufficient quantity of biodiesel is expected to be available."</p>
<p>Pennsylvania Contact: John Kulik joviku@aol.com Current as of 4/21/2017</p>	<p>Previous: 2,000-5,000 PPM*</p> <p>July 1, 2016: 500 PPM</p> <p><i>*varies by in-state region.</i></p>	<p>None.</p>	<p>Sulfur Waiver: The DEQ may suspend or increase maximum sulfur content if it (A) receives a written request that includes the subject air basin, the reason that the fuel is not "reasonably available," and the duration of time for which the waiver is sought along with relevant justifications; (B) determines there is insufficient supply due to events that could not have been "reasonably foreseen or prevented" and are not due to a "lack of prudent planning" by the distributor; or (C) request is approved in writing prior to the transfer of noncompliant fuel oil into or with the air basin. The waiver to suspend or increase the allowable sulfur content is limited to 60 days.</p>	<p>No. 4 Fuel Oil July 1, 2016: 2,500 PPM</p> <p>No. 5, No. 6 and heavier Fuel Oil July 1, 2016: 5,000 PPM</p> <p>For complete details: Sulfur regulations: 25 Pa. Code §123.22</p> <p>The DEP published a notice (Pa.B. Doc. No. 16-829) on outlining a transition policy for the July 1, 2016 sulfur reductions.</p>
<p>Philadelphia (City) Contact: John Kulik joviku@aol.com Current as of 4/21/2017</p>	<p>Previous: 2,000 PPM</p> <p>July 1, 2015: 15 PPM</p>	<p>None.</p>	<p>Unknown.</p>	<p>No. 4 Fuel Oil July 1, 2015: 2,500 PPM</p> <p>No. 5, No. 6 and Heavier Fuel Oil July 1, 2015: 5,000 PPM</p> <p>Sulfur Regulations: City Code §3-207 and Air Management Regulation III Control of Sulfur Compounds (AMR III), amended by City Council Bills No. 140510 on July 15, 2014 and No.150500-A on June 18, 2015. On October 22, 2016, City published notice 46 Pa.B. 6704 to revise state SIIP amendments to sulfur content in fuels.</p>

DISCLAIMER: This document provides general information regarding the status of state and local sulfur and bio-blending standards for heating oil and other distillate fuels. It is subject to revision and is not intended to provide guidance on legal or regulatory compliance obligations. Please consult with a qualified legal professional or contact the state association or regulatory agency for more information.

SULFUR & BIOHEAT REQUIREMENTS FOR No. 2 HEATING OIL IN THE NORTHEAST & MID-ATLANTIC STATES

Send updates to Jim Collura jim.collura@nefi.com 202-441-8857

Updated: 6-29-2017

Page 6 of 6

<p>Rhode Island Roberta Fagan, OHIRI roberta@ohi.necoxmail.com Current as of 6/7/2017</p>	<p>Previous: 5,000 PPM July 1, 2014: 500 PPM July 1, 2018: 15 PPM</p>	<p>July 1, 2014: 2% Blend July 1, 2015: 3% Blend July 1, 2016: 4% Blend July 1, 2017: 5% Blend</p>	<p>Sulfur Waivers: The Director may, upon application, defer compliance where it is not possible because of breakdowns or malfunction of equipment, acts of God, other unavoidable casualties or for good cause shown; provided that the order shall not defer compliance for more than three months. The Director shall notify the Administrator within five business days after issuing an order deferring compliance with subsection 8.2.1 (see subsection 8.7).</p> <p>Bioheat Waiver: The Governor may suspend the requirements if it is determined that the physical availability of bio-based heating oil is inadequate "at commercially reasonable prices to meet the needs of the residential, commercial, or industrial uses in this state and the inadequate availability constitutes an emergency, provided that the governor, shall specify in writing, the period of time the suspension shall be in effect."</p>	<p>Residual oil (No. 4, 5 and 6 fuel oil) July 1, 2018: 5,000 PPM</p> <p>Sulfur regulations: APC Regulation No. 8 Bioheat law: 23 RIGL §23-23.7</p>
<p>Vermont Matt Cota, VFDA matt@vermontfuel.com Current as of 6/8/2017</p>	<p>Previous: 20,000 PPM July 1, 2014: 500 PPM July 1, 2018: 15 PPM</p>	<p>Requirements of Bioheat law (below) would have only gone into effect if bordering states had enacted similar laws.</p> <p>July 1, 2012: 3% Blend July 1, 2015: 5% Blend July 1, 2016: 7% Blend</p>	<p>Bioheat & Sulfur Waivers: The Governor, by executive order, may suspend implementation and enforcement of the sulfur or biodiesel blending requirements if it is determined, after consulting with the DEC Secretary and Public Services Commissioner, that the mandate is not feasible due to an inadequate supply of the required fuel.</p>	<p>No. 4 Residual oil July 1, 2018: 2,500 PPM</p> <p>No. 5 & No. 6 Residual oil July 1, 2018: 5,000 PPM</p> <p>Sulfur & Bioheat Law: 10 VSA §585 Sulfur Regulations: VT APCR §5-221(1)</p>

DISCLAIMER: This document provides general information regarding the status of state and local sulfur and bio-blending standards for heating oil and other distillate fuels. It is subject to revision and is not intended to provide guidance on legal or regulatory compliance obligations. Please consult with a qualified legal professional or contact the state association or regulatory agency for more information.