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BIOHEAT LAWS, REGULATIONS, AND POLICIES: IMPEDIMENTS AND SOLUTIONS IN THE NORTHEAST UNITED STATES

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This report is designed to provide a summary and general overview of relevant laws, regulations, and policies. This report does not constitute legal advice.

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1 EXECUTIVE SUMMARY

There appear to be few laws, regulations, and policies in the Northeast that pose any serious obstacles to the distribution, use, or sale of "bioheat" (a B5 blend of heating oil and biodiesel). A survey of laws and regulations in 11 states and 4 cities, followed by interviews with more than 40 experts, revealed potential impediments that can largely be resolved by clarifying or modifying definitions or by waiving fees. In some particular instances, impediments could be resolved by educating state and local officials, modifying road tax laws to avoid taxing biodiesel that will be blended with heating oil, or streamlining permitting processes. Laws and policies might also provide remedies for some of the non-policy obstacles – such as costs and infrastructure – that experts identified as being among the most significant impediments to bioheat.

Indeed, states and municipalities are increasingly implementing laws, regulations, and executive orders that are favorable to bioheat. The prospects for a cleaner-burning, more environmentally beneficial heating oil like bioheat in the Northeast generally look good.

2 INTRODUCTION AND METHODOLOGY

2.1 What is Bioheat?

Bioheat is a blend of conventional heating oil (ASTM D396) and biodiesel (ASTM D6751), a renewable fuel made from vegetable oils, fats, and recycled cooking oils. For the purposes of this report, bioheat specifically refers to 95 percent petroleum fuel and 5 percent pure biodiesel – in other words, heating oil at a "B5" blend.

Because of its biodiesel component, bioheat is marketed as a fuel that may reduce U.S. dependence on foreign oil, improve price stability, and lessen the environmental and health impacts of conventional petroleum heating oil.

2.2 Objective of the Project

The objective of this project was to identify state and municipal laws, regulations, and policies related to heating oil and/or heating systems that may act as potential impediments to the distribution, use, or sale of bioheat in the Northeast and then to identify potential ways to overcome these hurdles. In particular, this project aimed to identify obstacles that are (1) common to all or most of the states examined, (2) unique to particular states, and (3) common to the cities examined. A secondary objective was to take note of any laws or policies uncovered during research that might prove to be favorable to bioheat.

2.3 Approach Used to Identify Potential Hurdles

This project examined the laws, regulations, and policies of 11 Northeast states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont) and four major cities (Baltimore, Boston, New York, and Philadelphia).

This project employed two major methods for gathering information:

- Review of codes and other laws in legal databases, oil heat industry websites, state and municipal websites, and physical resources (not available in electronic format) from libraries. This research focused primarily on identifying impediments to bioheat in each relevant jurisdiction.
- Interviews with more than 40 experts from the oil heat industry, municipal and state governments, and non-governmental organizations. This research gathered information on both potential impediments and potential solutions.

2.4 Scope of this Report

Some important caveats concerning the hurdles and solutions identified in this report must be noted.

First, this report focuses on the *legal and policy* obstacles to bioheat, mentioning only briefly some of the other important factors at play, such as infrastructure challenges.

Second, the legal and policy obstacles included herein were largely identified in May and early June 2007, so laws, policies, or regulations enacted or revised subsequently generally are not included.

Third, the legal and policy obstacles identified in this report should provide a good sense of the types of potential impediments that exist, but it is possible that not *all* such impediments in every state or city are described in this report. In other words, while this report should reflect the types of possible impediments to bioheat, it may not be exhaustive.

Fourth, the policy solutions recommended in this report are offered without consideration of any political or legislative difficulties that such solutions may face. The logic or efficacy of a policy modification does not necessarily correlate with the political or legislative ease of getting that modification passed and implemented.

Finally, all *potential* policy hurdles uncovered in the research are included in this report, even if some of them are not *currently* impeding the distribution, use, or sale of bioheat in the relevant jurisdictions. While current officials may be interpreting or enforcing the laws in ways that pose no obstacle to bioheat, the laws themselves do create the potential for problems, and all it takes is one official to interpret things differently for a problem to exist.

3 OVERVIEW AND ANALYSIS OF FINDINGS

3.1 Potential Law & Policy Impediments

This project revealed a range of laws, regulations, and policies that may act as potential impediments to bioheat.

***Common to the region*:**

- *NFPA codes and ASTM standards:* Most states have incorporated the National Fire Protection Association (NFPA) codes into their state fire codes, including the Standard for the Installation of Oil Burning Equipment (NFPA 31) and the Uniform Fire Code

(NFPA 1). The NFPA codes, as well as numerous state laws, reference the American Society for Testing and Materials (ASTM) standards for home heating oil. Experts identified these codes and standards as relatively important policy obstacles.

ASTM D396 is the current standard for home heating oil (No. 2) currently accepted for use with UL-listed burners and other heating equipment. At this point, bioheat is not defined as an ASTM D396 home heating fuel, and many state laws – particularly fire codes and oil burning equipment regulations – incorporate the ASTM standards (either directly or via the NFPA codes) and do not otherwise explicitly permit the use of bioheat with home heating equipment. Accordingly, use of bioheat may be forestalled until action is taken to update the ASTM standards or to update state codes to explicitly permit use of bioheat.

Additionally, several states – including Connecticut, Massachusetts, and Rhode Island – have adopted specific editions of the ASTM standards (i.e., from particular years), which means that even if the ASTM standards are revised to include bioheat, those states will still have the old standards on the books and so will have to change their laws.

- *Laws, regulations, and policies containing ambiguous language relating to fuel oil:* Many states' laws and regulations were drafted without a product like bioheat in mind and thus are unclear about whether they would apply to bioheat, generally due to language referring solely to "number 2 home heating oil" or some other phrase that might or might not cover bioheat. For instance, the Maine State Planning Act requires "primary storage facilities" and "primary suppliers" of "petroleum products" to report their inventories to the State Planning Office. While bioheat would seem to be a petroleum product, the statute defines "petroleum product" to mean "propane; gasoline; unleaded gasoline; gasohol; kerosene; # 2 heating oil; diesel fuel; kerosene-based jet fuel; aviation gasoline; # 4, # 5 and # 6 residual oil for utility and nonutility uses; and Bunker C oil" – none of which encompass bioheat. Not only are the reporting requirements for bioheat therefore ambiguous, but the statute in this case also provides for criminal penalties for failure to report. Similar ambiguities surface in a wide range of state laws, from New Jersey's Petroleum Products Gross Receipts Tax to Rhode Island's Air Toxics regulation. The resulting confusion as to possible applications and requirements for bioheat may create a disincentive to adoption.

- *Fees for storage tank registration:* Most states charge fees to register additional above-ground and underground storage tanks. If vendors need to install an additional tank to hold bioheat – as few vendors in the country are selling only bioheat – it is possible that the additional fees could be a small disincentive, though not a particularly meaningful one given the small size of the fees (and the much more pressing issue of inadequate storage space). On the other hand, policy action to minimize or waive these fees could serve as a small positive incentive for bioheat.

***Particular laws in individual states*:**

- Several states have laws that may present issues for bioheat. Some such laws involve officials vested with a great deal of discretion, while others involve policies that need to be tweaked to clarify their application to bioheat. In particular, experts pointed to three issues as being significant obstacles in some, but not all, states:
    - *State motor fuel taxes:* Motor fuel taxes in states such as Rhode Island and New Hampshire may place bioheat at a disadvantage relative to conventional heating oil. Conventional heating oil (No. 2 fuel) is exempt from road taxes and is dyed red to distinguish it from taxed motor vehicle fuel. For bioheat, however, dealers receive shipments of pure biodiesel (B100) that they blend on-site with conventional heating oil, and the trucks transporting the B100 pay the same road taxes in some states as if all of the B100 were going to be used as a motor fuel. Because of this tax disparity, bioheat may be more expensive than and thus at a disadvantage to its conventional counterpart. While refunds may exist for fuel used for heating, the refund process may be burdensome or poorly targeted, such as by allowing only the end user (i.e., the home heating oil customer) to get the tax reimbursement. (Tax officials may also be confused or suspicious about bioheat because of its slightly distinct coloring compared with conventional No. 2 fuel oil, which is dyed a precise color of red to distinguish it from motor fuel oil and thus exempt it from federal and state road taxes.)
    - *Permitting for terminals and storage tanks holding bioheat and biodiesel:* Experts pointed to the long permitting processes for tanks (regardless of whether they hold conventional heating oil or biodiesel blends) in some states as a significant disincentive for potential carriers of bioheat, since vendors who would need to add an additional tank in order to carry bioheat might not want to deal with the lengthy process. For example, Maryland's permitting process is fairly lengthy, with oil operations permits taking 90 days and portions of the permitting process for terminals taking 180 days. Experts also noted that state permit staff may have little familiarity with bioheat and its impact on heating equipment, which may cause unnecessary delays in permitting.
    - *Air toxics regulations:* Experts noted as a potential problem regulations for hazardous air contaminants in states such as New Hampshire and Vermont, since these states exempt from the regulations only "virgin petroleum" fuels. This means that regular heating oil would be exempt, whereas bioheat would not, subjecting users of bioheat to various (sometimes daunting) regulatory requirements.

***City regulations*:**

- Laws, regulations, and policies in the four major Northeast cities generally do not pose significant potential impediments to bioheat, as many of the laws and regulations relating to oil heating and storage are made on the state level.
- The few municipal policies that are relevant (and that are not positive incentives) suffer from the same sort of ambiguous language and ASTM hurdles found in state laws and

regulations. For instance, the Baltimore and Philadelphia Fire Codes both reference the International Code Council's International Fire Code, which, like NFPA 31, states that "the grade of fuel used in a burner shall be that for which the burner is approved." Without ASTM incorporation of bioheat, such approval remains lacking. As another example, the New York City Building Code contains a section on fuel oil equipment, but the definition of "fuel oil" is limited to ""hydrocarbon oils ... marketed under the following commercial grades: range oil or no. 1 fuel oil; diesel oil or no. 2 fuel oil; no. 4 fuel oil; no. 5 fuel oil; no. 6 fuel oil", creating ambiguity as to the equipment requirements for bioheat.

3.2 Recommendations for Mitigation of Law & Policy Impediments

Based on interviews with experts throughout the region and review of the relevant laws, this report recommends a range of actions for mitigating the potential impediments to bioheat. These recommendations, which are also detailed in the matrix below in response to particular laws and regulations, include the following:

- Amend ASTM D396 to include blends of up to five percent biodiesel. (Efforts to amend this standard are under way, and experts expect ASTM to agree on the amendment by the end of 2007.) Additionally, it may be necessary to amend current state laws that refer to ASTM D396 for a particular year's edition (e.g. ASTM D396-69, for 1969).
- Pass legislation that makes heating oil with five percent blends of biodiesel equivalent to No. 2 home heating oil, affecting all relevant state law.
- Pass legislation that provides some sort of waiver of storage tank fees for tanks storing bioheat.
- In certain states, amend motor fuel tax refund policies to allow blenders/distributors to get the refund for whatever biodiesel they blend with dyed, tax-exempt fuel.
- In certain states, pass legislation that decreases the turnaround period to no more than 30 days for storage tanks that will hold bioheat. Also, provide training on bioheat for permitting staff so as to increase their familiarity with bioheat and reduce any unnecessary delays.
- Continue or expand campaigns to educate local and state authorities who may unknowingly discriminate against the use of bioheat only because they are not familiar with the product and its (negligible) effects on heating equipment. Such authorities include regulatory boards that oversee standards for fuels and equipment, environmental regulators, fire and safety officials, and tax officials.

3.3 Laws Favorable to Bioheat

Increasingly, states (and municipalities) are implementing laws, regulations, and executive orders that provide incentives for renewable energy. Some of these policies even specifically encourage the use of bioheat, such as a Massachusetts executive order setting bioheat usage targets for state agencies. A sampling of such policies is included in the matrix below.

3.4 Impediments to Bioheat Outside of Law & Policy

Nearly all of the experts interviewed for this report recognized several non-legal factors – such as cost of bioheat, availability of biodiesel, lack of storage space, and availability and cost of infrastructure – as very important impediments to expanded use of bioheat in the region. Since these impediments are not caused by state laws or policies, they are not examined in this report.

However, it is worth noting that at least some of these impediments probably can be *addressed* by law and policy. For example, state legislatures can provide incentives (or mandates) for infrastructure improvements or can provide subsidies or refunds to reduce various costs.

3.5 Prospects for Bioheat in the Northeast

According to the experts interviewed for this report, the prospects for bioheat in the Northeast are good. For oil heat vendors and associations, bioheat represents a cleaner product that can help them compete with natural gas for residential and commercial heating. Vendors and associations believe that bioheat will be popular in light of the nation's move towards greener products and American-grown fuels. Bioheat also offers reduced sulfur content in home heating oil, which means cleaner burning and fewer service calls.

Interviewees from all states and sectors see a generally positive future for bioheat, especially with the expected amendment of ASTM D396, which will alleviate some legal barriers and quell many concerns of oil heat vendors and equipment manufacturers. Experts say that manufacturers have been slow to warm to the idea of allowing their warrantees to cover bioheat-fueled appliances because they were unsure of the potential negative impacts from this alternative fuel. Recently, however, a major manufacturer, R.W. Beckett, announced that its warrantees will cover Beckett burner equipment that uses heating oil containing blends of up to five percent biodiesel. Beckett's written statement and the company's efforts to inform the public and the industry about bioheat are a significant step towards greater acceptance and use of the product in the region.

4 MATRIX OF FINDINGS

The matrix on the following pages describes in detail some of the relevant laws, regulations, and policies in the focus jurisdictions. The matrix first describes issues common to the Northeast and then reviews issues of concern in particular states and the four cities. There are also some examples of potentially beneficial policies.

For each law, regulation, and policy, the matrix contains the citation, the implementing agency, the relevant content, the implications for bioheat, and potential solutions to any impediments.

LAWS, REGULATIONS, AND POLICIES AFFECTING THE DISTRIBUTION, USE, OR SALE OF BIOHEAT IN THE NORTHEAST

STATE / CITY	LAW, CITATION, & AGENCY	CONTENT	IMPLICATIONS	SOLUTIONS
LAWS, REGULATIONS, AND POLICIES COMMON IN THE REGION				
Incorporation of NFPA codes (NFPA 1 and 31) or ASTM standard D396				
CT	**Sale of Petroleum Products Gross Earnings Tax** Conn. Gen Stat. Ann. §§ 12-587 to 12-609 *Commissioner of Revenue Services*	Sets gross earnings tax on the initial sale of products delivered in CT that contain or are made from petroleum or a petroleum derivative. § 12-587(2)(B) exempts from the gross earnings tax the first sale of "the product designated by the American Society for Testing and Materials as 'Specification for Heating Oil D396-69', commonly known as number 2 heating oil, to be used exclusively for heating purposes..." and § 12-587(2)(K) also exempts "a commercial heating oil blend containing not less than ten per cent of alternative fuels derived from agricultural produce, food waste, waste vegetable oil or municipal solid waste, including, but not limited to, biodiesel or low sulfur dyed diesel fuel."	§ 12-587(2)(B) does not seem to cover bioheat, even if the ASTM D396 standard is updated, as this law specifies an older version of the standard. § 12-587(2)(K) does not seem to cover bioheat, as the biodiesel percentage (B5) is less than 10%. So B5 would apparently be subject to the tax, while regular heating oil would not.	Amend ASTM D396 to include bioheat, and revise the statute to tie it to the most current version of the ASTM D396 standard (i.e., every time the standard is updated). Alternatively (or additionally): • Revise state law to make bioheat equivalent to "number 2 heating oil". • Revise § 12-587(2)(K) to exempt B5 blends.
CT	**Oil Burning Equipment Code** CT ADC § 29-317-3a **Connecticut State Fire Safety Code - Part V. Maintenance and Operational Issues** Conn. Agencies Regs. §§ 29-292-22e to -25e *Department of Public Safety*	Sets out fire prevention standards for oil burning equipment, pursuant to C.G.S. § 29-317. Adopts the National Fire Protection Association (NFPA) Standard for the Installation of Oil Burning Equipment, NFPA 31-1992. Adopts Uniform Fire Code of the National Fire Protection Association, Standard 1 (NFPA 1), 2003 edition	NFPA 31 states that "The grade of fuel oil used in an oil burner shall be that for which the burner is approved and as stipulated by the manufacturer." NFPA 31 also defines "fuel oil" as "any hydrocarbon oil as specified by ASTM D396, Standard Specification for Fuel Oils, or the Canadian Government Specification Board, 3-GP-2e, Heating Fuel Oil, and having a minimum flash point of 38°C (100°F)." Currently, ASTM D396 does not include bioheat. NFPA 1 stipulates that heating equipment must follow NFPA 31 and again states that "The grade of fuel oil used in an oil burner shall be that for which the burner is approved and as stipulated by the manufacturer."	Amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat. Also, encourage manufacturers to stipulate the acceptability of using B5 blends. (NFPA 31 itself is set to be revised in Fall 2009.)

STATE / CITY	LAW, CITATION, & AGENCY	CONTENT	IMPLICATIONS	SOLUTIONS
DE	**Requirements for Approved Portable Oil-Fueled Heaters** 16 Del.C. § 7308 *State Fire Prevention Commission*	§ 7308(1)(b) states "Approved portable oil-fueled heaters must have labeling affixed thereto such as to caution and inform concerning … use of only suitable fuel for the heater." § 7308(4) states "Approved portable oil-fueled heaters must have an automatic safety shut-off device or inherent design feature which eliminates fire hazards in the event of tip over and otherwise conform with the standards set forth in National Fire Protection Association (NFPA) No. 31"	Consumers may be reluctant to use bioheat if it is not listed as a "suitable fuel" on the heater label. NFPA 31 states that "The grade of fuel oil used in an oil burner shall be that for which the burner is approved and as stipulated by the manufacturer." NFPA 31 also defines "fuel oil" as "any hydrocarbon oil as specified by ASTM D396, Standard Specification for Fuel Oils, or the Canadian Government Specification Board, 3-GP-2e, Heating Fuel Oil, and having a minimum flash point of 38°C (100°F)." Currently, ASTM D396 does not include bioheat.	Amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat. Also, encourage manufacturers to stipulate the acceptability of using B5 blends. (NFPA 31 itself is set to be revised in Fall 2009.)
DE	**State Fire Protection Regulations, Part II** http://statefiremarshal.delaware.gov/codes/part2/part2.pdf *Fire Prevention Commission*	A-6-2.4: "Any flammable and combustible liquid and gas site that falls within the scope of a specific NFPA code, as adopted and/or modified by these Regulations, shall be subject to additional requirements, for water supplies, including, but not limited to" NFPA 31, Standard for the Installation of Oil Burning Equipment.	Although focusing on water supplies, A-6-2.4 incorporates NFPA 31. NFPA 31 states that "The grade of fuel oil used in an oil burner shall be that for which the burner is approved and as stipulated by the manufacturer." NFPA 31 also defines "fuel oil" as "any hydrocarbon oil as specified by ASTM D396, Standard Specification for Fuel Oils, or the Canadian Government Specification Board, 3-GP-2e, Heating Fuel Oil, and having a minimum flash point of 38°C (100°F)." Currently, ASTM D396 does not include bioheat.	Amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat. Also, encourage manufacturers to stipulate the acceptability of using B5 blends. (NFPA 31 itself is set to be revised in Fall 2009.)
MA	**Air Pollution - Industry Performance Standards** 310 Mass. Code Regs. 7.26(30) to (37) *Department of Environmental Protection*	Limits the fuel content and emissions of boilers installed on or after September 14, 2001, with a heat input rating equal to or greater than 10,000,000 Btu per hour but less than 40,000,000 Btu per hour. (33)(a)(1) states that "only natural gas and distillate fuel oil may be used ... [in burners regulated under these provisions]" (31) defines "distillate fuel oil" to mean "fuel oil that complies with the specifications for fuel oil numbers 1 or 2 as defined by the American Society for Testing and Materials in ASTM D396-98, "Standard Specification for Fuel Oil" dated September 1998 and has a sulfur content not to exceed 0.05% by weight."	ASTM D396 is the current standard for home heating oil (No. 2) currently accepted for use with UL approved burners and other heating equipment. At this point, bioheat is not defined as an ASTM D396 home heating fuel. Even if the ASTM D396 standard is updated, this regulation specifies an older version of the standard.	Amend ASTM D396 to include bioheat, and revise the statute to tie it to the most current version of the ASTM D396 standard (i.e., every time the standard is updated). Alternatively (or additionally), revise state law to make bioheat equivalent to "fuel oil number 2".

STATE / CITY	LAW, CITATION, & AGENCY	CONTENT	IMPLICATIONS	SOLUTIONS
MA	**Oil Burning Equipment; Tanks & Containers** 527 Mass. Code Regs. § 4.00 527 Mass. Code Regs. § 9.01 et seq. *Board of Fire Prevention*	Sets standards for the installation of oil burning equipment principally intended to produce heat and for the design, construction, installation, testing, and maintenance of tanks and containers. §§ 4.02 and 9.02 define Fuel Oil as "Any hydrocarbon oil as specified by ASTM standard D396-90, Specification for Fuel Oils."	ASTM D396 is the current standard for home heating oil (No. 2) currently accepted for use with UL approved burners and other heating equipment. At this point, bioheat is not defined as an ASTM D396 home heating fuel. Even if the ASTM D396 standard is updated, this regulation specifies an older version of the standard.	Amend ASTM D396 to include bioheat, and revise the statute to tie it to the most current version of the ASTM D396 standard (i.e., every time the standard is updated). Alternatively (or additionally), revise the definition of "fuel oil" to include bioheat.
MD	**Oil Pollution and Tank Management** MD Envir. 26.10.01.12 *and* 26.10.02.06 *Department of the Environment*	Standards for above-ground and underground storage tanks. Incorporates NFPA 31 (1997).	NFPA 31 states that "The grade of fuel oil used in an oil burner shall be that for which the burner is approved and as stipulated by the manufacturer." As noted above, NFPA 31 cites to ASTM D396, which currently does not encompass bioheat.	Amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat. Also, encourage manufacturers to stipulate the acceptability of using B5 blends. (NFPA 31 itself is set to be revised in Fall 2009.) *Note: While not written policy, interviews revealed that this department considers bioheat as a conventional fuel and sees no problem with the NFPA codes in relation to bioheat.*
ME	**Oil and Solid Fuel Board Regulations** 32 Me. Rev. Stat. Ann. § 2311 et seq. *and* 02-381 Me. Code. R. §1 et seq. *Oil & Solid Fuel Board*	The law provides authority to the Oil and Solid Fuel Board to regulate installation of oil or solid fuel burning equipment. § 2313 prohibits installation of oil or solid fuel burning equipment "unless the installation complies with all standards and regulations adopted by the board." The regulations set forth the standards for installation of oil and solid fuel burning equipment, chimneys, fireplaces and vents. The Board has adopted NFPA 31 (2001), and § 9-3 makes it "unlawful for any person, firm, or corporation to erect, construct, alter, repair, or install oil burning equipment regulated by these rules and standards, or cause same to be done, in conflict with or in violation of any of the provisions of these rules"	NFPA 31, through its reference to ASTM D396, does not consider bioheat to be a conventional, compliant fuel (see CT and DE above). The OSFB has threatened to take the licenses of technicians who install a new boiler knowing it will use a non-conforming fuel, such as bioheat. A non-written agreement has been reached to allow technicians to work on heating equipment that uses bioheat, but technicians must mark that equipment as using a non-conforming fuel.	Amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat. Also, encourage manufacturers to stipulate the acceptability of using B5 blends. (NFPA 31 itself is set to be revised in Fall 2009.)
ME	**Fire Prevention Code** 16-219-3 Me. Code R. *Office of State Fire Marshal*	Incorporates by reference some but not all of NFPA 1, Uniform Fire Code, 2003 edition.	NFPA 1 stipulates that heating equipment must follow NFPA 31 and that "The grade of fuel oil used in an oil burner shall be that for which the burner is approved and as stipulated by the manufacturer." As noted above, NFPA 31 cites to ASTM D396, which currently does not encompass bioheat.	Amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat. Also, encourage manufacturers to stipulate the acceptability of using B5 blends. (NFPA 31 itself is set to be revised in Fall 2009.)

STATE / CITY	LAW, CITATION, & AGENCY	CONTENT	IMPLICATIONS	SOLUTIONS
NH	**State Fire Code** N.H. Code Admin. R. Saf-C 6001.01 et seq. *State Fire Marshal*	Saf-C 6011.01 requires that "All persons installing, causing to be installed or modifying, repairing or maintaining oil burning equipment shall comply with the requirements of NFPA 31 as adopted under part Saf-C 6012." Saf-C 6012.01 adopts as a rule NFPA 31, "Standard for the Installation of Oil Burning Equipment", 2001 edition.	NFPA 31 states that "The grade of fuel oil used in an oil burner shall be that for which the burner is approved and as stipulated by the manufacturer." As noted above, NFPA 31 cites to ASTM D396, which currently does not encompass bioheat.	Amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat. Also, encourage manufacturers to stipulate the acceptability of using B5 blends. (NFPA 31 itself is set to be revised in Fall 2009.)
VT	**2005 Vermont Fire & Building Safety Code** http://www.dps.state.vt.us/fire/05firecodeadopted.pdf *Commissioner of Public Safety*	Adopts NFPA 1, Uniform Fire Code, 2003 edition, with minor changes	NFPA 1 stipulates that heating equipment must follow NFPA 31, and that "The grade of fuel oil used in an oil burner shall be that for which the burner is approved and as stipulated by the manufacturer." As noted above, NFPA 31 cites to ASTM D396, which currently does not encompass bioheat.	Amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat. Also, encourage manufacturers to stipulate the acceptability of using B5 blends. (NFPA 31 itself is set to be revised in Fall 2009.)
Laws, regulations, and policies containing ambiguous language relating to fuel oil (home heating oil)				
MA	**Fire Prevention** Mass. Gen. Laws. Ann. ch. 148 § 1 et seq. *Board of Fire Prevention*	§ 38C requires owners of underground storage tanks to notify the state. Tanks " used for storing heating oil for consumptive purposes where stored" are exempted	Heating oil is not defined, so unclear if it covers B5 vendors. Ambiguity could be a disincentive.	Clarify definition of "heating oil" to make clear it includes bioheat.
MA	**Implementation of M.G.L. c. 111F, Employee And Community "Right To Know"** 310 Mass. Code Regs. 33.01 *Department of Environmental Protection*	§ 33.04(1) requires an employer "who manufactures, uses, processes or stores any hazardous or toxic substances in any workplace" to file a completed copy of each material safety data sheet (MSDS) for each such substance. § 33.08(2)(e) exempts from this filing requirement "fuel oils number 1, 2, 4, 5, and 6, natural gas, kerosene, petroleum, or propane, where used for space heating or power generation purposes, such that employees are not exposed to fumes or combustion by-products..."	It is unclear whether this exemption would apply to B5, since it is not number 2 fuel oil nor is it purely petroleum. Thus, employers using B5 might need to start filing under §33.04.	Clarify by adding language to state law that will equate bioheat with No. 2 fuel oil. Alternatively (or additionally), add bioheat to the exemptions in § 33.08(2)(e).
ME	**Low Sulfur Fuel Regulation** 06-096-l06 Me. Code. R. et seq. *Department of Environmental Protection*	Establishes the maximum sulfur content of fossil fuels (between 1.5 and 2.5% by weight) allowed to be burned in various air quality control regions in the state and imposes recordkeeping & monitoring requirements on persons who distribute, import or blend fossil fuels in Maine and on fuel burning sources in Maine: "Any person achieving compliance by means of blending fuels shall file with the Commissioner quarterly reports indicating the respective fuel volumes, sulfur contents and heat contents." "Any source achieving compliance using fuel blending involving one or more noncompliance grade fuel shall demonstrate compliance in accordance with the provisions of 40 CFR Part 75" (Sampling/ Continuous Emissions Monitoring)	It is not clear that this regulation applies to bioheat since persons would not be "achieving compliance by means of blending" biodiesel and heating oil (presumably, they would have achieved compliance anyway). However, this regulation could be interpreted otherwise, leading to potentially burdensome reporting and monitoring requirements if such "blending" applies to bioheat.	Clarify to determine whether bioheat is included under this regulation.

STATE / CITY	LAW, CITATION, & AGENCY	CONTENT	IMPLICATIONS	SOLUTIONS
ME	**Petroleum Market Share Act** 10 Me. Rev. Stat. Ann. § 1672 et seq. *Attorney General*	Among other things, sets out reporting requirements for wholesalers of "home heating oil" and motor fuel oil. "Home heating oil" is defined as "# 2 fuel oil sold for heating residential, industrial or commercial space or water." § 1672 (3).	Unclear whether this applies to B5 since it is not "#2 fuel oil", and ambiguity could dissuade merchants.	Clarify by adding language to state law that will equate bioheat with "#2 fuel oil". Alternatively (or additionally), add bioheat to the definition of "home heating oil" in § 1672(3).
ME	**Maine State Planning Act** 5 M.R.S.A. §3301 et seq. *State Planning Office*	Among other things, requires reporting by "primary storage facilities" and "primary suppliers" of their inventories of "petroleum products" to the State Planning Office. § 3307-C. "'Petroleum products' means propane; gasoline; unleaded gasoline; gasohol; kerosene; # 2 heating oil; diesel fuel; kerosene-based jet fuel; aviation gasoline; # 4, # 5 and # 6 residual oil for utility and nonutility uses; and Bunker C oil." § 3307-C(1)(A).	Unclear whether this section covers bioheat since it is not "#2 heating oil". § 3307-C provides for criminal penalties for failure to report. Ambiguity about such reporting requirements could be a disincentive to adoption.	Clarify by adding language to state law that will equate bioheat with "#2 heating oil". Alternatively (or additionally), add bioheat to the definition of "petroleum products" in § 3307-C(1)(A).
NH	**Petroleum Inventories** N.H. Rev. Stat. Ann. § 339-D:1 *Governor's Council on Energy*	Gives authority to director of the governor's council on energy to require inventory reporting by any "person owning or leasing petroleum product primary storage facilities". § 339-D:3 "'Petroleum product' means propane, gasoline, unleaded gasoline, kerosene, #2 heating oil, diesel fuel, kerosene base jet fuel and #4, 5 and 6 residual oil for utility and non-utility uses". § 339-D:1.	Unclear whether this section covers bioheat since it is not "#2 heating oil". Ambiguity about such reporting requirements could be a disincentive to adoption.	Clarify by adding language to state law that will equate bioheat with "#2 heating oil". Alternatively (or additionally), add bioheat to the definition of "petroleum product" in § 339-D:1.
NH	**Underground Storage Facilities** **&** **Control of Aboveground Petroleum Storage Facilities** N.H. Code Admin. R. Env-Wm 1401.01 et seq., 1402.01 et seq. *Department of Environmental Services, Division of Waste Management*	Sets requirements for underground storage tanks and for design, registration, installation, operation, maintenance, and monitoring of above-ground petroleum storage facilities. 1401.01, 1402.01 1401.01 exempts "Underground storage tank facilities that are used solely for residential heating use" and "facilities having no tank with a storage capacity of more than 1,100 gallons and which are used solely for the storage of heating oil for on-premises use" 1402.02 exempts "Any tank system(s), with a combined oil storage capacity of 1,320 gallons or less, containing heating oil used only for on-premise heating of structures". "'Heating oil' means petroleum that is: (1) No. 1, No. 2, No. 4-light, No. 4-heavy, No. 5-light, No. 5- heavy, or No. 6 technical grade of fuel oil, and that is not a 'used oil' as defined in Env-Wm 110.01(c)(135); and ... (3) Used as a substitute for one of the fuels listed in (1) ... above." 1402.03 (q). (1401.03 contains a similar definition of heating oil as "petroleum")	Unclear whether these sections cover B5 tanks that are not underground residential tanks. "Heating oil" is defined as "petroleum", and B5 is not purely petroleum. 1402.03 (q)(3) suggests that substitutes for traditional grades of oil are exempt, but this section is still connected to the word "petroleum" So, it is possible that tanks using B5 would be subject to the rules under this chapter (though not residential underground tanks) while tanks using traditional heating oil are not. Either way, the ambiguity could be a disincentive.	Clarify by adding language to state law that will equate bioheat with No. 2 heating oil. Alternatively (or additionally), revise 1402.03 and 1401.03 to include bioheat, which is not purely petroleum.
NJ	**Petroleum Products Gross Receipts Tax** N.J.S.A. § 54:15B *Division of Taxation in the Department of the Treasury*	Imposes a tax on the gross receipts derived or gallons sold from the first sale of petroleum products made to points in New Jersey. § 54:15B-3 "'Petroleum products" means refined products made from crude petroleum and its fractionation products, through straight distillation of crude oil or through redistillation of unfinished derivatives, but shall not mean the products commonly known as number 2 heating oil, number 4 heating oil, number 6 heating oil, kerosene and propane gas to be used exclusively for residential use." § 54:15B-2	Unclear whether this tax applies to bioheat since it is not "number 2 heating oil". If the tax does apply to bioheat, that would put it at a disadvantage to untaxed conventional heating oil. Either way, the ambiguity could be a disincentive.	Clarify by adding language to state law that will equate bioheat with "number 2 heating oil". Alternatively (or additionally), revise the definition of "petroleum products" to specifically exclude bioheat from the tax.

STATE / CITY	LAW, CITATION, & AGENCY	CONTENT	IMPLICATIONS	SOLUTIONS
NJ	**Sulfur in Fuels; Control and Prohibition of Air Pollution from Oxides of Nitrogen** N.J.A.C. § 7:27-9.1 et seq.; N.J.A.C. § 7:27-19.1 et seq. *Department of Environmental Protection*	Sets the maximum amount of sulfur in fuels and nitrous oxide (NOx) emissions. For example, for "No. 2 & lighter" fuel oil, sulfur maximums are 0.2% or 0.3% sulfur by weight (depending on county). § 7:27-9.2. For industrial/commercial/institutional boilers using "# 2 fuel oil", the maximum NOx emission rate is 0.12 pounds per million BTU. § 7:27-19.7.	Unclear what the standards are for bioheat, since it is not ""No.2" fuel oil (although the sulfur regulation also provides classifications by viscosity). The ambiguity could be a disincentive.	Clarify by adding language to state law that will equate bioheat with No. 2 fuel oil. Alternatively (or additionally), add clear bioheat standards into these provisions (at least for NOx).
RI	**Burning of Alternative Fuels** Air Pollution Control Regulation No. 20 (amended 7/19/07) *Dept of Environmental Management*	Prohibits burning of alternative fuels without first obtaining written approval from DEM (§ 20.3), and approval requires submission of lab analyses, air sampling, record-keeping, etc. (§ 20.4 et seq.) ""Alternative fuel" means any materials, other than fuel oil, natural gas, coal or wood residue that is burned for the purpose of creating useful heat. Types of alternative fuels include, but are not limited to waste oil and hazardous waste. This definition does not include refuse derived fuel (RDF)." (§ 20.1.1) ""Waste oil" means used or spent oil of any kind, including but not limited to those oils from automotive, industrial, aviation and other source categories." (§ 20.1.4) This regulation applies to any person burning alternative fuels in fuel burning equipment with a heat input capacity of one million Btu per hour or greater. (§ 20.2) (The old version of this (pre- July 19, 2007) defined "fuel oil" as "any virgin distillate oil, virgin residual oil or a blend of these" (old § 20.1.4). The revised version contains no definition of "fuel oil".)	Unclear whether bioheat is exempted as "fuel oil" from the definition of "alternative fuel", since "fuel oil" is no longer defined (it is not clear that bioheat would have satisfied the old definition). Also unclear whether one could interpret "waste oil" from "other source categories" to include biodiesel made from used vegetable oil – the examples given suggest petroleum, but the definition itself is not so limited. Bioheat (at least as used in large units) might thus be subject to the various requirements. Either way, the ambiguity could be a disincentive.	Clarify by adding language to state law that will define "fuel oil" so it includes bioheat. Alternatively (or additionally): • Revise the definition of "alternative fuel" in § 20.1.1 to specifically exclude bioheat. • Revise the definition of "waste oil" in § 20.1.4 to make clear that it excludes used vegetable oils as used to produce biodiesel.
RI	**Air Toxics** Air Pollution Control Regulation No. 22 (amended 7/19/07) *Dept of Environmental Management*	Prohibits " construction, installation, or modification of any stationary source which has the potential to increase emissions of a listed toxic air contaminant by an amount greater than the Minimum Quantity for that contaminant specified in Table III of this regulation without first obtaining an approved permit " from the Director. (§ 22.3.1) This regulation applies to "any stationary source that emits a listed toxic air contaminant", unless exempted. (§ 22.2.1) Exemptions include "fuel burning equipment where the emission of listed toxic air contaminants is solely from the combustion of fuel oil, propane or natural gas" except for "new major fuel-burning sources and major fuel-burning modifications that begin operation after April 27, 2004" (major fuel-burning sources that began operation prior to April 27, 2004 shall be subject to this regulation on and after April 27, 2009). (§ 22.2.2(c)) ***(cont'd next page)***	Unclear whether bioheat is exempted as "fuel oil" under § 22.2.2 or elsewhere in this regulation, since "fuel oil" is no longer defined (it is not clear that bioheat would have satisfied the old definition). Also unclear whether use of bioheat counts as a modification under § 22.1.11, since "alternative fuel" is not defined in this regulation (although even if it was, most manufacturers have not specified that bioheat is permitted in their equipment). At a minimum, the ambiguity could be a disincentive.	Clarify by adding language to state law that will define "fuel oil" so it includes bioheat. Alternatively (or additionally), amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat, enabling bioheat to be considered an "alternative fuel" that the equipment is permitted to use (and thus not a modification). For the same reasons, also encourage manufacturers to stipulate the acceptability of using B5 blends.

STATE / CITY	LAW, CITATION, & AGENCY	CONTENT	IMPLICATIONS	SOLUTIONS
		"Modification" is defined as "any physical or operational change to any machine, equipment, device, article or facility which may result in an increased emission rate to the atmosphere of any air contaminant", although " use of an alternative fuel or raw material" is not considered a modification "if the machine, equipment, device, article or facility was designed and permitted to accommodate that alternative use." (§ 22.1.11) "Major fuel-burning modification" is defined as "any physical change or change in the method of operation of a major fuel-burning source that would result in a net emission increase … of air pollutants from the combustion of fuel oil, propane, natural gas, or a combination of those fuels" above specified levels. (§ 22.1.9) "Major fuel-burning source" is defined as "any stationary source that emits or has the potential to emit … air pollutants from the combustion of fuel oil, propane, natural gas, or a combination of those fuels" above specified levels. (§ 22.1.10) (The old version of this (pre- July 19, 2007) defined "fuel oil" as "any virgin distillate oil, virgin residual oil or a blend of these" (old § 22.1.7). The revised version contains no definition of "fuel oil".)		
RI	**Control of Nitrogen Oxide Emissions** Air Pollution Control Regulation No. 27 *Dept of Environmental Management*	Limits "emissions of nitrogen oxides from stationary sources", § 27.7.1, which have or ever have had, since 1 January 1990, the potential to emit 50 tons of nitrogen oxides (NOx) per year from all pollutant-emitting equipment or activities. § 27.2.1 Industrial - Commercial - Institutional boilers fired with natural gas or distillate oil, with a heat input capacity of 50 million Btu per hour or greater, cannot have NOx emissions greater than 0.12 lbs per million Btu. § 27.4.2 Such boilers (§ 27.4.2) shall obtain a certification from the fuel supplier for each shipment of distillate oil that the oil complies with the specification for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78 "Standard Specification for Fuel Oils" § 27.6.4	Unclear what NOx limits apply to burners using bioheat since "distillate oil" is not defined and the certification provisions demand numbers 1 or 2. As noted earlier, at this point, bioheat is not defined as an ASTM D396 home heating fuel. Even if the ASTM D396 standard is updated, this regulation specifies an older version of the standard. So it is unclear how industrial, commercial, and institutional boilers using bioheat could get certification from suppliers. The ambiguity could be a disincentive.	Amend ASTM D396 to include bioheat, and revise the regulation to tie it to the most current version of the ASTM D396 standard (i.e., every time the standard is updated). Additionally, clarify NOx standards for burners using bioheat and/or define "distillate oil" to include bioheat.
RI	**Rules and Regulations For Underground Storage Facilities Used For Petroleum Products and Hazardous Materials** DEM-OWM-UST06-05 *Dept. of Env'l Management - Office of Waste Management*	Sets requirements and fees for underground storage tanks storing petroleum products. The regulations do not apply to "Tanks less than or equal to 1,100 gallons in capacity used for storing No. 2 heating oil and serving a one, two or three family dwelling" § 3.03(B)(1) "No. 2 heating oil" is defined as "a distillate oil, commonly referred to as home heating oil". § 5.50	Unclear whether residential tanks using bioheat would be exempted since bioheat is not "No. 2 heating oil". Such tanks might therefore be subject to the requirements. At a minimum, the ambiguity could be a disincentive.	Clarify by adding language to state law that will equate bioheat with "No. 2 heating oil". Alternatively (or additionally), revise the exemption in § 3.03(B)(1) to explicitly include bioheat as well.

STATE / CITY	LAW, CITATION, & AGENCY	CONTENT	IMPLICATIONS	SOLUTIONS
VT	**Petroleum Inventories; Reporting Requirements** Vt. Stat. Ann. Tit. 9 § 4111 et seq. *Vermont Department of Public Safety*	§ 4113(a) gives authority to the commissioner to " promulgate regulations which require any person owning or leasing primary storage facilities within the state to report to the commissioner data concerning storage, inventory and product receipts." ""Primary storage facility" or "facility" means any facility or terminal with a capacity of 50,000 gallons or more which receives petroleum products by ship, barge, pipeline, truck or rail, for holding within the state." § 4111(3) ""Petroleum product" means propane, gasoline, unleaded gasoline, kerosene, number two heating oil, diesel fuel, kerosene base jet fuel, and number four, five and six residual oil for utility and nonutility uses." § 4111(2)	Unclear whether inventories would be required for bioheat, since it does not appear to fit in the definition of "petroleum product" (as it is not "number two heating oil").	Clarify by adding language to state law that will equate bioheat with "number two heating oil". Alternatively (or additionally), revise the definition of "petroleum product" in § 4111(2) to explicitly include bioheat.
Fees for storage tank registration				
DE	**Underground Storage Tank Act** 7 Del.C. § 7401-7419 *Department of Natural Resources and Environmental Control*	§ 7418 declares that "all owners/operators of underground storage tanks shall pay to the Department an annual per tank registration fee of $50 on or before February 1 of each calendar year." Under § 7404, these rules do not apply to tanks " containing heating fuels of 1,100 gallons or less which are used for consumptive purposes on the premises where stored."	If vendors need to install an extra tank, one for regular heating oil and one for bioheat, the additional fees might be a small disincentive (and minimizing or waiving the fee could be a small positive incentive). Residential users would not likely need to pay a tank registration fee.	Pass legislation that provides some sort of waiver of storage tank fees for tanks storing bioheat.
DE	**Above Ground Storage Tank Act** 7 Del.C. § 7401A-7416A *Department of Natural Resources and Environmental Control*	§ 7413A(a) requires a registration fee for above-ground storage tanks of $300 (12,499-39,999 gal) - $750 (> 40,000) per year. § 7404A exempts "aboveground storage tanks of 1,100 gallons or less in capacity used solely to store heating fuel for consumptive use on the premises where stored."	If vendors need to install an extra tank, one for regular heating oil and one for bioheat, the additional fees might be a small disincentive (and minimizing or waiving the fee could be a small positive incentive). Residential users would not likely need to pay a tank registration fee.	Pass legislation that provides some sort of waiver of storage tank fees for tanks storing bioheat.
ME	**Underground Oil Storage Facilities and Ground Water** 38 Me. Rev. Stat. Ann. § 561 et seq. *Department of Environmental Protection*	Among other things, establishes fees for underground storage tanks: § 563 requires the owners and operators of " underground oil storage facilities" (except single family homeowners) to register every tank at their site and pay an annual fee of $35 for each tank.	If vendors need to install an extra tank, one for regular heating oil and one for bioheat, the additional fees might be a small disincentive (and minimizing or waiving the fee could be a small positive incentive). Some residential users would not need to pay a tank registration fee.	Pass legislation that provides some sort of waiver of storage tank fees for tanks storing bioheat.
NJ	**Water Pollution Control** N.J.S.A. 58:10A-22 *Department of Environmental Protection*	Provides for registration, monitoring, and testing of underground storage tanks, but exempts "Tanks used to store heating oil for on-site consumption in a nonresidential building with a capacity of 2,000 gallons or less" and "Tanks used to store heating oil for on-site consumption in a residential building". $100 initial registration fee, $300 fee for new tank installation.	If vendors need to install an extra tank, one for regular heat ing oil and one for bioheat, the additional fees might be a small disincentive (and minimizing or waiving the fee could be a small positive incentive). Residential users would not need to pay a tank registration fee.	Pass legislation that provides some sort of waiver of storage tank fees for tanks storing bioheat.

STATE / CITY	LAW, CITATION, & AGENCY	CONTENT	IMPLICATIONS	SOLUTIONS
NY	**Control of the Bulk Storage of Petroleum** Environmental Conservation Law § 17-1001 to 17-1017 *Department of Environmental Conservation*	Facilities must be re-registered every five years. Registration fees vary from $100 to $500 per facility, depending on capacity.	If vendors need to install an extra tank, one for regular heating oil and one for bioheat, the additional fees might be a small disincentive (and minimizing or waiving the fee could be a small positive incentive).	Pass legislation that provides some sort of waiver of storage tank fees for tanks storing bioheat .
PA	**Annual Registration Fees for Above -ground Storage Tanks** 35 P.S. § 6021.302, 304 *Department of Environmental Protection*	"Annual registration fees to be paid by owners of aboveground storage tanks are hereby established as follows: (i) Three hundred dollars for each aboveground storage tank with a capacity of more than 50,000 gallons. (ii) One hundred twenty-five dollars for each aboveground storage tank with a capacity of more than 5,000 gallons and less than or equal to 50,000 gallons. (iii) Fifty dollars for each aboveground storage tank with a capacity of up to or equal to 5,000 gallons." Also $20 permit application fee.	If vendors need to install an extra tank, one for regular heating oil and one for bioheat, the additional fees might be a small disincentive (and minimizing or waiving the fee could be a small positive incentive).	Pass legislation that provides some sort of waiver of storage tank fees for tanks storing bioheat .
PA	**Annual Registration Fee for Underground Storage Tanks** 35 P.S. § 6021.502, 504 *Department of Environmental Protection*	Annual fee of $50 for each underground storage tank. $20 permit application fee to install, construct, modify, operate or remove from service all or part of an underground storage tank facility	If vendors need to install an extra tank, one for regular heating oil and one for bioheat, the additional fees might be a small disincentive (and minimizing or waiving the fee could be a small positive incentive).	Pass legislation that provides some sort of waiver of storage tank fees for tanks storing bioheat .
VT	**Underground And Aboveground Liquid Storage Tanks** Vt. Stat. Ann. Tit. 10 §§ 1921 to 1944 Environmental Protection Rules - Chapter 8, § 8-302(3) *Vermont Agency of Natural Resources*	§ 1943(a) requires each owner of a " category one tank used for storage of petroleum products [to] remit to the secretary on October 1 of each year ... $200.00 per tank, which shall be deposited to the petroleum cleanup fund", and § 8-302(3) sets an annual permitting fee of $32.00 per "category one" tank. "Category one tank" means an underground storage tank, but not "fuel oil storage tanks used for on-premises heating purposes"	If vendors need to install an extra tank, one for regular heating oil and one for bioheat, the additional fees might be a small disincentive (and minimizing or waiving the fee could be a small positive incentive). Residential users would not need to pay a tank fee (used on-premises).	Pass legislation that provides some sort of waiver of storage tank fees for tanks storing bioheat .
INDIVIDUAL STATE LAWS, REGULATIONS, AND POLICIES THAT MAY PRESENT SPECIAL CONCERNS				
CT	**Energy Utilization and Conservation** Conn. Gen Stat. Ann. §§16a-35k to 16a-99 *Commissioner of Social Services*	§ 16a-41a(b) sets up a program to purchase number two home heating oil at a reduced rate for low-income households. The implementing regs, Conn. Agencies Regs. § 16a-41-1 et seq. have been repealed and not been replaced. Various sections of this chapter state a general legislative policy of increasing utilization of "renewable energy resources", including requiring "maximum practicable use of renewable sources of energy" in buildings owned or leased by the state, § 16a-38(i). In particular, " where technically feasible, renewable sources of energy shall be used for space heating and cooling, domestic hot water and other applications". § 16a-38a(b) (2).	Unclear whether bioheat would qualify for inclusion in the low-income program since it is not "number two home heating oil", but presumably not.	Revise statute to include bioheat in the low-income program, which would seem to fit with the policy expressed in the chapter.

STATE / CITY	LAW, CITATION, & AGENCY	CONTENT	IMPLICATIONS	SOLUTIONS
CT	**Boiler Design, Construction, Installation, Repair, Use And Operation** Conn. Agencies Regs. § 29-232-1et seq. *Department of Public Safety*	Nothing in the regulations poses a clear obstacle to bioheat, but § 29-232-49 provides that " Any condition not covered by these regulations which, in the opinion of the inspector, affects the continuing safety operation of the boiler shall be resolved by the commissioner who may require correction according to the requirements for new installation."	Could potentially pose a hurdle if a boiler inspector thinks use of B5 might affect the boiler.	Make sure that boiler inspectors are educated about and on board with the use of B5.
CT	**Regulation of fuel oil burners** Conn. Gen. Stat. Ann. § 29-316 *Department of Public Safety*	§29-316 provide that "The warden or burgesses of a borough, the selectmen of a town, the common council of a city or the commissioners of a fire district may enact rules and regulations for the installation of fuel oil burners, equipment therefore and fuel oil storage tanks."	Municipal regulations enacted pursuant to this section might act as an obstacle to the use of bioheat.	Educate local officials about bioheat.
MA	**Air Pollution Control** 310 Mass. Code Regs. 7.05 *Department of Environmental Protection*	§ 7.05(4) states: "No person owning, leasing or controlling a fuel utilization facility shall cause, suffer, allow or permit the use therein of any fuel additive except in accordance with the manufacturer's recommended specifications." Under § 7.01, "fuel utilization facility" is defined as "any furnace(s), fuel burning equipment, boiler(s), space heaters or any appurtenance thereto used for the burning of fuels, for the emission of products of combustion, or in connection with any process which generates heat and emits products of combustion, but does not mean a motor vehicle or an incinerator...", while "fuel additive" is defined as "any substance which is not a natural component of the fuel to which it may be added or in conjunction with which it may be used."	Taken together, these provisions seem to prohibit the addition of biodiesel to heating oil "except in accordance with the manufacturer's recommended specifications."	Revise the definition of "fuel additive" in § 7.01 to exclude biodeisel blends of up to 5% in heating oil. Alternatively (or additionally): • Encourage manufacturers to include B5 blends in the recommended specifications. • Amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat, which will be reflected in manufacturer specifications.
MD	**Aboveground and Underground Storage Tank and Terminals Permits** http://www.mde.state.md.us/Permits/WasteManagementPermits/index.asp *Oil Control Program*	2.06 OIL OPERATIONS PERMIT: "Any person who stores 10,000 gallons or more of non-edible oil in above ground tanks, who stores 1,000 gallons or more of used oil, who transports oil in or out of Maryland or who operates an oil transfer facility must obtain this permit. …Standard turnaround time: 90 days." 2.10 SURFACE WATER DISCHARGE PERMIT FOR OIL TERMINALS: "oil terminal facilities that discharge stormwater or hydrostatic test water to State surface waters" and that are "receiving oil by pipeline or marine transfer and which have greater than 5 million gallons storage capacity" must apply. "Standard turnaround time: 180 days." 2.11 GROUND WATER DISCHARGE PERMIT FOR OIL TERMINALS: "oil terminal facilities that discharge stormwater or hydrostatic test water to State groundwaters" and that are "receiving oil by pipeline or marine transfer and which have greater than 5 million gallons storage capacity" must apply for a groundwater discharge permit …150 days."	Since the turnaround time for these permits (90, 180, and 150 days, respectively) is long, vendors may not want to go through it in order to add an additional tank to hold bioheat.	Reduce permitting time to no more than 30 days if tank will be used for the storage of pure biodiesel (B100) or biodiesel blends (B2-B99).

STATE / CITY	LAW, CITATION, & AGENCY	CONTENT	IMPLICATIONS	SOLUTIONS
ME	**Regulation of Mobile Home Parks, Restrictions on the purchase of fuel oil or bottled gas** 10 Me. Rev. Stat. Ann. § 9095 *Manufactured Housing Board*	Restricts mobile home park owners or operators with respect to their fuel oil charging practices: "No mobile home park owner or operator who provides ... a centralized distribution system may charge residents more than the average retail price charged by other retail distributors for fuel oil or bottled gas in the county in which the mobile home park is located."	May impede utilization of B5 where B5 is more expensive than other fuel oil.	Revise the law to state: "charged by other retail distributors for that type of fuel oil."
NH	**Motor Vehicle Road Toll Law** NH Rev. Stat. Ann. 259:58; 260:30-47 *Division of Motor Vehicles*	259:58 Motor Fuel: "'Motor fuel' shall mean all products used in an internal combustion engine for the generation of power to propel motor vehicles or mechanical contrivances on or over the ways of this state." 260:32 Levy of Tolls and Exemptions. "There is hereby imposed a road toll of $.18 per gallon upon the sale of each gallon of motor fuel sold by distributors thereof. The road toll shall be collected by the distributor from the purchaser and remitted to the state in the manner hereinafter set forth." 260:47 Refunds. "I. Any person who shall use any motor fuel, upon which the road toll has been paid to the state of New Hampshire, shall be entitled to a refund to the extent of the amount paid, under the following conditions: (a) The fuel was used in any other way than generating power in an internal combustion engine while traveling on the ways…"	This road toll apparently applies to biodiesel since it can be used as a motor fuel. The toll is inapplicable to conventional heating oil. Because of this tax disparity, bioheat may be more expensive than and thus at a disadvantage to its conventional counterpart. Refunds are apparently given only to end users, which is unwieldy.	Allow distributors or vendors to claim the refund for the toll. The end user can then receive the refund in the form of lower prices of bioheat, which may be easier for the consumer and thus more beneficial to the bioheat market.
NH	**Regulated Toxic Air Pollutants** N.H. Code Admin. R. Env-A 1401.01 et seq. *Department of Environmental Services*	Designed to prevent, control, abate and limit the emissions of toxic air pollutants into the ambient air (1401.01). Applies to "the owner or operator of any new, modified, or existing stationary source or device that emits a regulated toxic air pollutant into the ambient air", and the only stationary fuel-combustion exemptions are for coal, natural gas, untreated wood, or "virgin petroleum products". (1402.01(b))	Pure heating oil would count as a "virgin petroleum product" and would thus be exempt from the air toxics regulations, whereas this would not be the case for bioheat, placing bioheat at a potential disadvantage (any business using bioheat would need to be prepared to demonstrate compliance with air toxics limits).	Revise the regulation to expand the exemption to include bioheat.
NJ	**Labeling portable heating oil burners** N.J.S.A. 2C:40-8 *Dept of Community Affairs*	"A portable, oil-burning heating device shall not be sold, offered for sale, or used in this State unless a label is affixed to the device cautioning and informing the user concerning...b. The type of fuel that should be used in the device."	Consumers might not use bioheat in portable heaters unless it is listed on the label.	Work with manufacturers of portable oil-burning heaters to get bioheat on the label.
PA	**Plan Approval Requirements for Sources of Air Pollution** 25 Pa. Code § 127.11-14 *Department of Environmental Protection*	Requires persons constructing or modifying an air contamination source to get approval from DEP by submitting a detailed application concerning air pollution control measures. § 127.14 contains exemptions for: " (2) Combustion units rated at 2.5 million or less Btus per hour of heat input. (3) Combustion units with a rated capacity of less than 10 million Btu per hour of heat input fueled by natural gas supplied by a public utility, liquefied petroleum gas or by commercial fuel oils which are No. 2 or lighter—viscosity less than or equal to	If the source is a combustion unit less than 10 million BTU and other exemptions do not apply, it seems that bioheat would not qualify as a "commercial fuel oil" under this definition, and thus may not be exempt from the air pollution control requirements	Revise state law to ensure that bioheat is included in the exemptions in §127.14.

STATE / CITY	LAW, CITATION, & AGENCY	CONTENT	IMPLICATIONS	SOLUTIONS
		5.82 C St—and which meet the sulfur content requirements of § 123.22 (relating to combustion units). … For the purpose of this section, commercial fuel oil shall be virgin oil which has no reprocessed, recycled or waste material added. (4) Sources used in residential premises designed to house four or less families. (5) Space heaters which heat by direct heat transfer. … (8) Other sources and classes of sources determined to be of minor significance by the Department."		
RI	**Motor Fuel Tax** RI ST § 31-36-1 et seq. *Division of Taxation*	§ 31-36-7: "Every distributor shall, on or before the twentieth (20th) day of each month, … pay … to the administrator tax at the rate of thirty cents ($.30) per gallon on all taxable gallons of fuel sold or used in this state." § 31-36-1: "'Fuels' includes gasoline, benzol, naphtha, and other volatile and inflammable liquids (other than lubricating oils, diesel fuel for the propulsion of marine craft, fuels used for the propulsion of airplanes, oils used for heating purposes, manufactured and organically produced biodiesel fuels that results in employment in Rhode Island at a manufacturing facility for organically produced biodiesel fuel), used or suitable for use for operating or propelling motor vehicles with internal combustion engines…"	Although some B100 will be used for blending into bioheat, some will be used for motor fuel. Anyone transporting biodiesel into RI and not operating a rack or licensed as a supplier will be required to pay the state (and federal) road tax. (Only organically produced and locally manufactured biodiesel is excluded from the definition of "fuels" that may be taxed.) The tax is inapplicable to conventional heating oil. Because of this tax disparity, bioheat may be more expensive than and thus at a disadvantage to its conventional counterpart. The refund section of the law (§ 31-36-15) contains no relevant provisions for bioheat users or distributors.	At a minimum, create a clear and simple mechanism in § 31-36-15 ("Refunds of motor fuel tax") whereby distributors could get a refund for the biodiesel used to make fuel sold for heating purposes.
RI	**Businesses and Professions: Electricians** RI ST § 5-6-1 et seq., § 28-27-5.3. *Division of Professional Regulation, Department of Labor and Training*	§ 5-6-2(a)(1) requires a license for working on appliances generating heat § 5-6-11(a) limits licensing ("Certificate F") of oil burner-persons to working on and repairing electric wiring and equipment "located in or on oil burners burning fuel oil no heavier than No. 2, and other equipment serviced by oil burner contractors, to the extent only as is necessary to service, maintain and repair those oil burners and equipment." § 28-27-5.3. Oil burner-person's limited license (same language)	May require special license for working on bioheat.	Revise state law to make sure that bioheat counts as No. 2 "fuel oil." Alternatively (or additionally), revise § 5-6-11(a) to enable certification of oil burner-persons working on equipment burning bioheat.
VT	**Control of Hazardous Air Contaminants** Vt. Air Pollution Control Regulations § 5-261 *Vermont Department of Environmental Conservation*	Prohibits emissions of hazardous air contaminants except in conformity with this section, which mandates control technology and other requirements. Exempted from these requirements are "all fuel burning equipment which combusts virgin liquid or gaseous fuel." (§ 5-261(1)(c)(ii))	Pure heating oil would count as a "virgin liquid" fuel and would thus be exempt from the hazardous air contaminants regulations, whereas this would not be the case for bioheat, placing bioheat at a potential disadvantage.	Revise the regulation to expand the exemption to include bioheat.

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EXAMPLES OF LAWS, REGULATIONS, AND POLICIES POTENTIALLY FAVORABLE TO THE DISTRIBUTION, USE, OR SALE OF BIOHEAT				
DE	**Delaware Energy Act, Green Energy Fund** 29 Del.C. § 8057 *State Energy Office*	"Program of environmental incentive grants and loans for the development, promotion and support of energy efficiency programs and renewable or alternative energy technology" Goals include "Fost ering use of energy efficient, renewable and environmentally friendly energy technologies throughout the State in the residential, commercial, industrial, public and agricultural sectors" and "Creating market incentives for the pursuit of renewable energy resources by energy providers in the State". Provides grants for renewable energy technologies, which are defined in 8502 to include "Biodiesel manufacturing facilities"	Could encourage production of biodiesel for bioheat.	N/A
MA	**"Leading By Example – Clean Energy and Efficient Buildings" Executive Order** Executive Order No. 484 (2007) *Governor*	I. Energy Targets for Agency Buildings: "All Commonwealth agencies as a whole and, to the greatest extent feasible individually, shall meet the following t argets:...Utilize bio heat products with a minimum blend of 3% bio based materials for all heating applications that use #2 fuel starting with the winter of 2007-2008, and 10% bio heat blend by 2012." V. Biofuels: "To achieve the 3% bioheat goal of this Order, agencies shall commence the purchase of this fuel as of October 1, 2007 for all facilities that use #2 heating oil, or as soon as available through statewide contracts. To facilitate agency use of this fuel, EOEEA and OSD shall conduct inform ational and training sessions prior to October 1, 2007 to address any questions and report on the result of the bioheat pilot conducted during the winter of 2006-2007. Additionally, OSD is hereby directed to establish a heating fuel contract that specifies biofuel for oil heating products specified by this Order. Furthermore, I direct EOEEA and OSD to work with cities and towns to inform them of this new policy and encourage them to utilize bioheat. Pending availability, performance and cost, EOEEA and OSD shall review annually the use of bioheat and develop recommendations for increasing the bioheat goals in this Order to a minimum of 10% by 2012."	Should encourage use of bioheat	N/A
NJ	**State College Contracts** N.J.S.A. 18A:64-79 *Department of High er Education*	"A State college may only enter a contract exceeding 36 consecutive months for the: a. Supplying of fuel and oil for heating and other purposes and utilities for any term not exceeding in the aggregate five years…n. Purchase of alternative energy or the purchase or lease of alternative energy services or equipment for conservation or cost saving purposes for a term not exceeding 10 years."	If bioheat counts as an "alternative energy", state colleges may prefer it over conventional heating oil since it can be sold on a 10-year contract, whereas conventional can only be sold on a 5-year contract	N/A

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NY	**Executive Order No. 142: George E. Pataki** 9 NYCRR 5.142 *Governor's Office*	NYSERDA shall … develop a plan pursuant to which state agencies and public authorities shall purchase, allocate, distribute and utilize bio-diesel heating oil for use in state agency and public authority buildings that currently utilize oil, as specified in the table below. The percentage of diesel shall be a blended equivalent which results in an overall consumption of B100 as set forth below. Calendar Year B100 Percentage 2007 0.5% 2008 1.0% 2009 2.0% 2010 3.0% 2011 4.0% 2012 5.0%	Should encourage use of bioheat	N/A
MUNICIPAL LAWS, REGULATIONS, AND POLICIES				
Boston	**Executive Order of Mayor Thomas M. Menino An Order Relative to Climate Action in Boston** April 13, 2007	Requires all existing municipal properties to be evaluated for the feasibility of using bio-energy, and "projects with substantial reductions in greenhouse gas emissions and a high return on investment shall receive priority consideration in the City's capital planning process". Requires all new municipal construction to be LEED-Silver	Could potentially pose an advantage for bioheat in contracts with the city	N/A
Baltimore	**Building, Fire, and Related Codes of Baltimore City** http://cityservices.baltimorecity.gov/charterandcodes/Code/Art%2000%20-%20Bldg,%20Fire.pdf *Dept of Housing and Community Development*	Adopts a range of International Code Council codes, such as the International Mechanical Code and the International Fire Code.	The ICC codes have similar language to NFPA. So, for instance, the International Fire Code 603.1.4 states: "The grade of fuel used in a burner shall be that for which the burner is approved."	Amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat. Also, encourage manufacturers to stipulate the acceptability of using B5 blends.
New York City	**New York city air pollution control code** NYC Code § 24-101 to -190 *City Commissioner of Environmental Protection*	§ 24-167 prohibits "use of equipment or apparatus for a purpose or in a manner which causes it to function improperly or not in accordance with its design." § 24-168 (a) prohibits " use of a kind or grade of fuel in fuel burning equipment which is not designed to burn that kind or grade of fuel." § 24-178 provides for civil penalties to be assessed under the code § 24-169(a) restricts sulfur content of fuel oil grade no. 2 as classified by ASTM	Unclear if using bioheat in equipment designed solely for regular heating oil might run afoul of 167, 168, and 178. Currently, ASTM D396 does not include bioheat, so it is not clear what sulfur restrictions would apply to bioheat.	Amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat. Also, encourage manufacturers to stipulate the acceptability of using B5 blends. Additionally, revise § 24-169(a) to account for bioheat.

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New York City	**NYC Building Code** NYC Code § 27-101 et seq.; § 27-827-832 *Department of Buildings*	§ 27-180(c) requires a permit "for the installation or alteration of . . . fuel burning and fuel oil storage equipment." § 27-182(c)(1) requires applications for such permits to be accompanied by detailed plans. "Alteration" is defined under this chapter as "[a]ny addition, or change or modification of a building, or the service equipment thereof, that affects safety or health" § 27-232 § 27-827 defines "fuel oil" as "hydrocarbon oils … marketed under the following commercial grades: range oil or no. 1 fuel oil; diesel oil or no. 2 fuel oil; no. 4 fuel oil; no. 5 fuel oil; no. 6 fuel oil." The succeeding sections have requirements for fuel oil equipment.	The 100s section of the code could be an impediment if an official sees the switch to bioheat as posing safety concerns. The 800s section of the code creates ambiguity in terms of the equipment requirements for bioheat storage, since bioheat does not meet the definition of "fuel oil".	Educate officials on bioheat. Additionally, revise the building code sections on fuel oil equipment to account for bioheat.
Philadelphia	**Sale of Fuel Oil** Philadelphia Code 3-207 *Air Pollution Control Board*	Sets sulfur content for commercial fuel oils (0.2% for No. 2 and lighter). (The code also contains standards by viscosity.) 3-102 defines "fuel oil" as "A liquid or liquefiable petroleum product burned for lighting or for the generation of heat or power and derived directly or indirectly from crude oil."	Ambiguous as to the sulfur standards for bioheat.	Clarify the standards for bioheat.
Philadelphia	**Philadelphia Fire Code** Philadelphia Code, Subcode F *Board of Safety and Fire Prevention*	Adopts the International Code Council's International Fire Code.	The ICC codes have similar language to NFPA. So, for instance, the International Fire Code 603.1.4 states: "The grade of fuel used in a burner shall be that for which the burner is approved."	Amend ASTM D396 to include blends of up to 5 percent biodiesel. Once ASTM D396 is updated to include bioheat, oil burners approved for use with ASTM D396 should be approved for use with bioheat. Also, encourage manufacturers to stipulate the acceptability of using B5 blends.

APPENDIX: INTERVIEW LIST

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