Low Sulfur Oilheat Fact Sheet

Vermont's supply of home heating oil, a product currently blended with up to 5% biodiesel, is about to become even cleaner and more efficient. On an environmental basis is has become increasingly competitive with all other heating fuels including and especially natural gas, which cannot be desulfurized or blended with liquid biofuels. Beginning on July 1, 2014 the sulfur content will be dramatically reduced for much of the region's supply to 500 parts-per-million (ppm). By July 1, 2018, nearly all of the region's heating oil will be reduced from the current level of approximately 2,500 ppm to a mere 15ppm.[1] The below chart provides the timeline for the six New England states' transition to ultra-low sulfur (ULS) heating oil. Other states in the Northeast including Delaware, New Jersey, New York and Pennsylvania have also approved similar requirements which many market insiders believe will move much of the home heating oil market to 15ppm ahead of state regulatory deadlines (outlined below).

Transition to Ultra-low Sulfur in New England†

State	Current Max.	500ppm	50ppm	15ppm
Connecticut	2,000-3,000ppm	July 1, 2014	-	July 1, 2018
Maine	3,000-5,000ppm	-	July 1, 2016	January 1, 2018
Massachusetts	3,000ppm	July 1, 2014	-	July 1, 2018
New Hampshire	4,000ppm	-	-	-
Rhode Island††	5,000ppm	July 1, 2014	-	July 1, 2018
Vermont	20,000ppm	July 1, 2014	-	July 1, 2018

†State laws or regulations to lower the sulfur content of heating oil: Connecticut (296 C.G.S. §16a-21a and RCSA §22a-174-19b); Maine (38 M.R.S. §603-A); Massachusetts (310 C.M.R. 7.05); and Vermont (10 V.S.A. §585 and APCR §5-221(1)). Many of these States also included requirements that the sulfur content of residual fuels and other distillate fuels be reduced. Note that New Hampshire is the only New England state that has not yet proposed or enacted a requirement to lower sulfur in heating oil.

††The Rhode Island Department of Environmental Management's Office of Air Resources proposed regulations to reduce the sulfur content of heating oil on March 14, 2014. It is expected to be approved sometime this year (see proposed APC Regulation No. 8).

Over the last fifteen years, the U.S. Environmental Protection Agency (EPA) has promulgated, implemented and enforced various regulations to lower the sulfur content of gasoline and most diesel fuel used in motor vehicle, non-road, locomotive and marine (MV-NRLM) engines. As a result, existing gasoline and diesel engines were shown to operate more efficiently. It has also paved the way for the development new generation of ultra-efficient gasoline and diesel engines have come onto the market in recent years. This has saved consumers money, reduced dependence on imported oil, removed potentially harmful emissions and improved air quality.[2]

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[1] That is a decline of an average sulfur content of 0.250% weight by volume to no more than 0.0015%.

[2] The EPA's MV-NRLM regulations did not lower the sulfur content of home heating oil. The EPA has historically viewed heating oil as a regional product utilized largely in the Northeast. Questions have also been raised as to whether or not the EPA has the authority to regulate the sulfur content of heating oil under the Clean Air Act.

These same benefits will be enjoyed by heating oil consumers as the sulfur content of that product is lowered as well. For this reason, at a national oilheat industry summit in Baltimore in 2009 representatives from around the country including local, state, regional and national oilheat associations overwhelmingly embraced state and federal efforts to require the use of ULS heating oil nationwide as soon as possible. Since that time the industry has advocated proposals at the state and local level that would require the phase-in of ULS heating oil throughout the Northeast by 2018 if not sooner.

The benefits of this more efficient, cleaner burning and environmentally secure heating fuel are numerous. First, there are obvious air quality benefits. About 99 percent of burned sulfur becomes SO2, a $PM_{2.5}$ particulate that irritates lungs, contributes to pulmonary disease and creates haze. Transitioning the industry to an exclusively ULS product would eliminate thousands of tons of SO2 emissions and result in cleaner air and widespread health benefits for individuals across the region.

Second, consumers will enjoy considerable cost savings as ULS heating oil can immediately save customers up to 12 cents per gallon thanks to an increased efficiency in existing systems and the reduced need for system maintenance and increased system longevity.[3] As the specification for highway diesel fuel and home heating fuel converge at 15ppm, reduced storage and delivery costs for fuel oil dealers may provide additional savings. Any price differential that might be realized in the transition from high sulfur to low sulfur fuel has been shown to be negligible thanks to these proven cost savings.

Lastly, the widespread use of ULS heating oil and the increasing volume blending of biodiesel will enable the introduction of a new generation of ultra-efficient oil-fired appliances into the North American market. Currently there are only a few oil-fired furnaces and boilers meet a 90 AFUE rating. They are bulky and expensive due to the amount of steel required to withstand the high sulfur content of the fuel. ULS will allow the introduction of inexpensive condensing technologies currently in use in Europe and elsewhere that can increase AFUE ratings by 6.5% and enable a wide variety of competitively-priced appliances with ratings in some cases well above 90 AFUE.[4]

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[3] Source: the National Oilheat Research Alliance, 2009

[4] The Oilheat Manufacturers Association, which represents U.S. manufacturers of oilheat appliances, and Tom Butcher of Brookhaven National Laboratory, “Benefits of Ultra-low Sulfur Heating Oil,” October 7, 2009.