

distributing heating oil as a separate fuel grade to install a second diesel storage tank to handle this 500 ppm nonroad fuel. These bulk plants currently handle only high-sulfur fuel and hence would need a second tank to continue their current practice of selling fuel into the heating oil market in the winter and into the nonroad market in the summer.<sup>277</sup> We believe that some of these bulk plants would convert their existing diesel tank to 500 ppm fuel in order to avoid the expense of installing an additional tank. However, to provide a conservatively high estimate we assumed that 10 percent of the approximately 10,000 bulk plants in the U.S. (1,000) would install a second tank in order to handle both 500 ppm NRLM diesel fuel and heating oil. The cost of an additional storage tank at a bulk plant is estimated at \$90,000 and the cost of de-manifolding their delivery truck at \$10,000.<sup>278</sup> If all 1,000 bulk plants were to install a new tank, the total one-time capitol cost would be \$100,000,000. Amortizing the capital costs over 20 years, results in a estimated cost for tankage at such bulk plants of 0.1 cent per gallon of affected NRLM diesel fuel supplied. Although the impact on the overall cost of the proposed program is small, the cost to those bulk plant operators who need to put in a separate storage tank may represent a substantial investment. Thus, as discussed in section IV.F., we believe many of these bulk plants could make other arrangements to continue servicing both heating oil and NRLM markets.

Due to the end of the highway program temporary compliance option (TCO) in 2010 and the disappearance of high-sulfur diesel fuel from much of the fuel distribution system due to the implementation of this proposed rule, we expect that storage tanks at many bulk plants which were previously devoted to 500 ppm TCO highway fuel and high-sulfur fuel would become available for dyed 15 ppm nonroad diesel service. Based on this assessment, we do not expect that a significant number of bulk plants would need to install an additional storage tank in order to provide dyed and undyed 15 ppm diesel fuel to their customers beginning in 2010 (the proposed implementation date for the 15 ppm

nonroad standard).<sup>279</sup> There could potentially be some additional costs related to the need for new tankage in some areas not already carrying 500 ppm fuel under the temporary compliance option of the highway diesel program and which continue to carry high sulfur fuel. However, we expect them to minimal relative to the above 0.1 cent per gallon cost. Thus, we estimate that the total cost of additional storage tanks that would result from the adoption of this proposal would be 0.1 cent per gallon of affected off-highway diesel engine fuel supplied.

Three, the proposed requirement that high sulfur heating oil be marked between 2007 and 2010 and that locomotive and marine diesel fuel be marked from 2010 until 2014 would increase the cost of distributing these fuels slightly. Based on input from marker manufacturers, we estimate that marking these fuels would cost no more than 0.2 cent per gallon and could cost considerably less. There should be no capital cost associated with this requirement, as we are proposing to remove the current requirement that refiners dye all high sulfur distillate at the refinery. The current dyeing equipment should work equally well for the marker. Because heating oil is being marked to prevent its use in NRLM engines, we have spread the cost for this marker over NRLM diesel fuel. Thus, from a regulatory point of view, the heating oil marker would increase the cost of NRLM diesel fuel between 2007 and 2010 by 0.16 cent per gallon. We attribute the cost of marking 500 ppm locomotive and marine diesel fuel directly to this fuel, so the marker cost is simply 0.2 cent per gallon of locomotive and marine diesel fuel between 2010 and 2014.

We do not project any additional downgrade of 15 ppm diesel fuel would result from the proposed fuel program. In our analysis of the 15 ppm highway fuel program, we also projected additional distribution costs due to the need to downgrade more volume of highway diesel fuel to a lower value product. This is a consequence of the large difference between the sulfur content of 15 ppm fuel and other distillate products, like high sulfur diesel fuel, heating oil and jet fuel.<sup>280</sup> We do not project that these costs would

increase with this proposed rule. Highway diesel fuel meeting a 15 ppm cap will already be being distributed in all major pipeline and terminal networks. Thus, we expect that 15 ppm nonroad fuel would be added to batches of 15 ppm already being distributed. In this situation, the total interface volume needing to be downgraded would not increase. At the same time, we are not projecting that interface volume would decrease, as high sulfur fuels, such as jet fuel, would still be in the system.

Thus, overall, we estimate that the total additional distribution would be 0.3 cent per gallon of nonroad, locomotive and marine fuel during the first step of the proposed program (from 2007 through 2010). We project that distribution costs would increase to 0.4 cent gallon for 500 ppm locomotive and marine diesel fuel from 2010 to 2014, but decrease to 0.2 cent per gallon thereafter. Finally, we project that distribution costs for 15 ppm nonroad diesel fuel would be 0.2 cent gallon.

#### 4. How EPA's Projected Costs Compare to Other Available Estimates

We used two different methods for evaluating how well our cost estimates reflect the true costs for complying with the two step nonroad fuel program. The first method compared our costs with the incremental market price of diesel fuel meeting a 15 or 500 ppm standard. The second method compared our cost estimate to that from an engineering analysis analogous to the one we performed.

Beginning with market prices, highway diesel fuel meeting a 500 ppm sulfur cap has been marketed in the U.S. for almost ten years. Over the five year period from 1995–1999, its national average price has exceeded that of high sulfur diesel fuel by about 2.4 cent per gallon (see chapter 7 of the Draft RIA). While fuel prices are a often a function of market forces which might not reflect the cost of producing the fuel, the comparison of the price difference over a fairly long period such as 5 years would tend to reduce the effect of the market on the prices and more closely reflect the cost of complying with the 500 ppm cap standard. Thus, we feel that this is a sound basis for evaluating our cost estimate. This price difference is essentially the same as our estimated cost for refining and distributing 500 ppm non-highway diesel fuel, thus the price difference for producing and distributing 500 ppm highway fuel corroborates our cost analysis.

Some 15 ppm diesel fuel is marketed today. However, it is either being produced in very limited quantities using equipment designed to meet less

<sup>277</sup> See section IV.E.9. of this proposal and chapter 5 of the RIA for additional discussion of the potential impacts of the proposed sulfur standards on the distribution system.

<sup>278</sup> This estimated cost includes the addition of a separate delivery system on the tank truck.

<sup>279</sup> See section IV of today's preamble for additional discussion of our rationale for this conclusion.

<sup>280</sup> Off-highway diesel fuel sulfur content is currently unregulated and is approximately 3,400 ppm on average. The maximum allowed sulfur content of heating oil is 5,000 ppm. The maximum allowed sulfur content of kerosene (and jet fuel) is 3,000 ppm.