

in the process of being developed by the State of Alaska for implementing the 2007 highway diesel fuel program. EPA can revisit this issue when it takes action on Alaska's plan for implementation of the highway sulfur requirements, allowing for coordination of the nonroad and highway fuel requirements. The specifics of our proposal for diesel fuel sold in Alaska are described in more detail in section IV.D.1. below. In addition, these proposed 500 and 15 ppm sulfur caps would not apply to diesel fuel sold in three Pacific U.S. territories, as described in more detail in section IV.D.2. below.

The early credits and other special provisions create the probability that high sulfur NRLM diesel fuel would be produced and sold after June 1, 2007, and that 500 ppm nonroad diesel fuel would be produced and sold after June 1, 2010. Under the proposal, fuel distributors would be responsible for ensuring the necessary product segregations and that statements on product transfer documents and fuel product labels are consistent with the corresponding fuel quality. The specific requirements for both fuel distributors and end-users are described in detail in section VIII.

d. Cetane Index or Aromatics Standard

Currently, in addition to containing no more than 500 ppm sulfur, EPA requires that highway diesel fuel meet a minimum cetane index level of 40 or, as an alternative contain no more than 35 volume percent aromatics. We are proposing today to extend this cetane index/aromatics content specification to NRLM diesel fuel. Extension of these content specifications would reduce NO_x and PM emissions from the current nonroad equipment fleet slightly, providing associated public health and welfare benefits.

Low diesel fuel cetane levels are associated with increases in NO_x and PM emissions in current nonroad diesel engines. Thus, we expect that this cetane index specification would lead to a reduction in these emissions from the existing fleet. Because the vast majority of current NRLM diesel fuel already meets this specification, the NO_x and PM emission reductions would be small. Also, the impact of cetane on NO_x and PM emissions appears to be very weak or nonexistent for diesel engines equipped with EGR. Thus, the positive emission impact of this specification would likely decrease over time as these engines gradually dominate the in-use fleet.

ASTM already applies a cetane number specification of 40 to NRLM

diesel fuel, which in general is more stringent than the similar 40 cetane index specification. Because of this, the vast majority of current NRLM diesel fuel already meets the EPA cetane index/aromatics specification for highway diesel fuel. Thus, the proposed requirement would have an actual impact only on a limited number of refiners and there would be little overall cost associated with producing fuel to meet the proposed cetane/aromatic requirement. In fact, as discussed in section 5.9 of the draft RIA, complying with the sulfur standards proposed today is expected to result in a small cetane increase, leaving little or no further control to meet the standard.

In addition, we expect that if all NRLM fuel met the cetane index or aromatics specification as proposed, refiners would benefit from the ability to fungibly (mixed together) distribute highway and NRLM diesel fuels of like sulfur content. For that fraction of fuel that today does not meet this specification, the proposed requirement would eliminate the need to separately distribute fuels of different cetane/aromatics specifications that would otherwise need to occur. Requiring NRLM diesel fuel to meet this cetane index specification would thus give fuel distributors certainty in being able to combine shipments of highway and NRLM diesel fuels. Overall, we believe that the economic benefits from more efficient fuel distribution would likely exceed the cost of refining the small volume of NRLM diesel fuel that might not currently meet the cetane index or aromatics content specification.

We request comment on the costs and benefits of our proposal to extend the cetane index and alternative aromatics standard applicable to highway diesel fuel to NRLM diesel fuel.

B. Program Design and Structure

In addition to the proposed content standards and their timing, the program must be designed and structured carefully to achieve the overall principles of this proposed nonroad diesel fuel program. The health and welfare benefits and the need for widespread availability of 15 ppm highway diesel fuel must be maintained. This will only happen if the program is designed such that the amount of low sulfur fuel expected to be produced under the highway diesel program is in fact produced. Likewise, the benefits of the low sulfur diesel program proposed today will only be achieved if the program is designed such that the volume of diesel fuel consumed by NRLM engines is matched by the production and distribution of at least

the same volume of diesel fuel produced to the appropriate low sulfur levels. At the same time, promoting the efficiency of the distribution system calls for fungible distribution of physically similar products, and minimizing the need for segregation of products in the distribution system.

1. Background

Prior to the highway diesel sulfur standard that took effect in 1993, most number 2 distillate fuel was produced to essentially the same specifications, shipped fungibly, and used interchangeably for highway diesel engines, nonroad diesel engines, locomotive and marine diesel engines and heating oil applications. Beginning in 1993, highway diesel fuel was required to meet a 500 ppm sulfur cap and was segregated from other distillate fuels as it left the refinery by the use of a visible level of dye solvent red 164 in all non-highway distillate.²³⁴ At about the same time, the IRS similarly required non-highway diesel fuel to be dyed red to a much higher concentration prior to retail sale to distinguish it from highway diesel fuel for excise tax purposes. Dyed non-highway fuel is exempt from this tax. This splitting of the distillate pool necessitated changes in the distribution system to ship and store the now distinct products separately. In some parts of the country where the costs to segregate non-highway diesel fuel from highway diesel fuel could not be justified, both fuels have been produced to the highway specifications.²³⁵

This proposal would set new specifications for nonroad, locomotive, and marine diesel fuel. However, currently there is no grade of diesel fuel which is produced and marketed as a distinguishable grade for NRLM uses. It is typically produced and shipped fungibly with other distillate used for heating oil purposes, and it is all dyed red in accordance with EPA and IRS regulations. Therefore, in order to control the sulfur content of NRLM, but

²³⁴ Non-highway distillate for the purposes of this proposal refers to all diesel fuel and distillate used for nonroad, locomotive, marine and heating oil purposes; in other words, all number 1 or number 2 distillate other than that used for highway purposes, and excluding jet fuels.

²³⁵ Diesel fuel produced to highway specifications but used for non-highway purposes is referred to as "spill-over." It leaves the refinery gate and is fungibly distributed as if it were highway diesel fuel, and is typically dyed at a point later in the distribution system. Once it is dyed it is no longer available for use in highway vehicles, and is not part of the supply of highway fuel. Based on the most recent EIA data, roughly 15 percent of fuel produced to highway specifications is spillover, representing nearly a third of non-highway consumption.