

accordance with the other ABT program provisions. In no case could the phase-in compliance demonstration drop below 25% in each of 2012, 2013, and the first 9 months of 2014, except as allowed under the “good faith projection deficit” provision discussed in Section VII.D. Full compliance (100% phase-in) with the Tier 4 standards would need to be demonstrated in the last 3 months of 2014 and thereafter.

In addition, a manufacturer using this reduced phase-in option would not be allowed to generate credits from engines in this power category in 2012, 2013, and the first 9 months of 2014, except for use in averaging within this power category only (no banking or trading, or averaging with engines in other power categories). This restriction would apply throughout this period even if the reduced phase-in option is exercised during only a portion of this period. We believe that this ABT restriction is important to avoid potential abuse of the added flexibility allowance, considering that larger engine categories will be required to demonstrate substantially greater compliance levels with the 0.30 g/bhp-hr NO_x standard several years earlier than engines built under this option. The restriction should be no burden to manufacturers, as only those using the option would be subject to it, and the production of credit-generating engines would be contrary to the option’s purpose.

We are proposing to phase in the Tier 4 NMHC standard with the NO_x standard, as is being done in the highway program. Engines certified to the new NO_x requirement would be expected to certify to the NMHC standard as well. The “phase-out” engines (the 50 percent not certified to the new Tier 4 NO_x and NMHC standards) would continue to be certified to the applicable Tier 3 NMHC+NO_x standard. As discussed in section III.E, we believe that the NMHC standard is readily achievable through the application of PM traps to meet the PM standard, which for most engines does not involve a phase-in. However, in the highway program we chose to phase in the NMHC standard with the NO_x standard for administrative reasons, to simplify the phase-in under the percent-of-production approach taken there, thus avoiding subjecting the “phase-out” engines to separate standards for NMHC and NMHC+NO_x. The same reasoning applies here because, as in the highway program, the previous-tier standards are combined NMHC+NO_x standards.

Because of the tremendous variety of engine sizes represented in the nonroad diesel sector, we are proposing that the

50 percent phase-in requirement be met separately in each of the three power categories for which a phase-in is proposed (75–175 hp, 175–750 hp, and >750 hp).¹²¹ For example, a manufacturer that produces 1000 engines for the 2011 U.S. market in the 175 to 750 hp range would have to demonstrate compliance to the proposed NO_x and NMHC standards on at least 500 of these engines, regardless of how many complying engines the manufacturer produces in other hp categories. (Note, however, that we would allow averaging of emissions across these engine category cutpoints through the use of power-weighted ABT program credits, as provided for in the existing nonroad diesel engine program.) We believe that this restriction reflects the availability of emissions control technology, and is needed to avoid erosion of environmental benefits that might occur if a manufacturer with a diverse product offering were to meet the phase-in with relatively low cost smaller engines, thereby delaying compliance on larger engines with much higher lifetime emissions potential. Even so, the horsepower ranges for these power categories are fairly broad, so this restriction allows ample freedom to manufacturers to structure compliance plans in the most cost-effective manner. We could as well choose to handle this concern by weighting complying engines by horsepower, as we do in the ABT program, but we believe that creating a simple phase-in structure based simply on counting engines, as we did in the highway HDDE rule, avoids unnecessary complexity and functional overlap with ABT.

c. Rationale for Restructured Horsepower Categories

We are proposing to regroup the power categories in the proposed Tier 4 program compared to the previous tiers of standards.¹²² We are doing so because this will more closely match the degree of challenge involved in transferring advanced emissions control technology from highway engines to nonroad engines. For a variety of reasons, highway engines have in the past been equipped with new emission control technologies some years before nonroad

engines. As a result, the nonroad engine platforms that are directly derived from highway engine designs in turn become the lead application point for the migration of emission control technologies into the nonroad sector. Smaller and larger nonroad engines, as well as similar-sized engines that cannot directly use a highway base engine (such as farm tractor engines that are structurally part of the tractor chassis), may then employ these technologies after additional lead time for needed adaptation. This progression has been reflected in EPA standards-setting activity to date, especially in implementation schedules, in which the earliest standards are applied to engines in the most “highway-like” power categories.

Although there is not an abrupt power cutpoint above and below which the highway-derived nonroad engine families do and do not exist, we believe that 75 hp is a more appropriate cutpoint for this purpose than either of the closest previously adopted power category cutpoints of 50 or 100 hp. These two cutpoints were first adopted in a 1994 final rule that chose them in order to establish categories for a staggered implementation schedule designed to spread out development costs (59 FR 31306, June 17, 1994). Nonroad diesels produced today with rated power above 75 hp (up to several hundred hp) are mostly variants of nonroad engine platforms with four or more cylinders and per-cylinder displacements of one liter or more. These in turn are derived from or are similar to heavy-duty highway engine platforms. Even where nonroad engine models above 75 hp are not so directly derived from highway models, they typically share many common characteristics such as displacements of one liter per cylinder or more, direct injection fueling, turbocharging, and, increasingly, electronic fuel injection. These common features provide key building blocks in transferring high-efficiency exhaust emission control technology from highway to similar nonroad diesel engines. We have discussed this matter with relevant engine manufacturers, and we are confident based on these discussions that 75 hp represents an industry consensus on the appropriate cutpoint for this purpose. We invite comment on the 75 hp cutpoint.

We are therefore proposing to regroup power ratings using the 75 hp cutpoint. Some have expressed that this may somewhat complicate the transition from tier to tier and efforts to harmonize with the European Union’s nonroad diesel program (which currently uses

¹²¹ Note proposed exceptions to the 50 percent requirements during the phase-in model years discussed in sections VII.D and VII.E. These deal with differences between a manufacturer’s actual and projected production levels, and with incentives for early or very low emission engine introductions.

¹²² The Tier 1 / 2 / 3 programs make use of 9 categories divided by horsepower: <11, 11–25, 25–50, 50–100, 100–175, 175–300, 300–600, 600–750, and >750 hp.