

CHAPTER 11: Small-Business Flexibility Analysis

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CHAPTER 11: Small-Business Flexibility Analysis

This chapter discusses our Initial Regulatory Flexibility Analysis (IRFA) which evaluates the potential impacts of the proposed standards on small entities. The Regulatory Flexibility Act, as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Pursuant to this requirement, we have prepared an IRFA for the proposed rule. Throughout the process of developing the IRFA, we conducted outreach and held meetings with representatives from the various small entities that could be affected by the rulemaking to gain feedback, including recommendations, on how to reduce the impact of the rule on these entities. The small business recommendations stated here reflect the comments of the small entity representatives (SERs) and members of the Small Business Advocacy Review Panel (SBAR Panel, or ‘the Panel’).

11.1 Overview of the Regulatory Flexibility Act

In accordance with section 609(b) of the Regulatory Flexibility Act, we convened an SBAR Panel before conducting the IRFA. A summary of the Panel’s recommendations is presented in the preamble of this proposed rulemaking. Further, a detailed discussion of the Panel’s advice and recommendations is found in the Final Panel Report contained in the docket for this proposed rulemaking.

Section 609(b) of the Regulatory Flexibility Act further directs the Panel to report on the comments of small entity representatives and make findings on issues related to identified elements of the IRFA under section 603 of the Regulatory Flexibility Act. Key elements of an IRFA are:

- a description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;
- projected reporting, record keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirements and the type of professional skills necessary for preparation of the report or record;
- an identification to the extent practicable, of all other relevant Federal rules which may duplicate, overlap, or conflict with the proposed rule;
- any significant alternatives to the proposed rule which accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities.

The Regulatory Flexibility Act was amended by SBREFA to ensure that concerns regarding small entities are adequately considered during the development of new regulations that affect those entities. Although we are not required by the Clean Air Act to provide special treatment to

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small businesses, the Regulatory Flexibility Act requires us to carefully consider the economic impacts that our rules will have on small entities. The recommendations made by the Panel may serve to help lessen these economic impacts on small entities when consistent with Clean Air Act requirements.

11.2 Need for the Rulemaking and Rulemaking Objectives

A detailed discussion on the need for and objectives of this proposed rule are located in the preamble to the proposed rule. As previously stated, controlling emissions from nonroad engines and equipment, in conjunction with diesel fuel quality controls, has important public health and welfare benefits. With the advent of more stringent controls on highway vehicles and their fuels, emissions from nonroad sources, unless controlled, will contribute significantly more harmful pollution than on-highway sources.

Section 213(a)(3) of the Clean Air Act requires EPA to regulate NO_x emissions from nonroad engines and vehicles upon an EPA determination that nonroad engines contribute to emissions in a nonattainment area. In part, section 213(a)(3) authorizes EPA to promulgate standards for designated pollutants (including NO_x) that require the greatest degree of emission reduction achievable from application of technology to nonroad engines (or vehicles) while giving “appropriate consideration to the cost of applying such technology within the period of time available to manufacturers and to noise, energy, and safety factors associated with the application of such technology.” Section 213(a)(4) applies to all pollutants not specifically identified in section 213(a)(3), and authorizes EPA to promulgate “appropriate” standards for such pollutants, taking into account “costs, noise, safety, and energy factors associated with the application of technology which the Administrator determines will be available” for those engines (or vehicles). Controls on PM implement this provision.

Section 211(c)(1) authorizes EPA to regulate fuels if any emission product of the fuel causes or contributes to air pollution that may endanger public health or welfare, or that may impair the performance of emission control technology on engines and vehicles. We believe that the opportunity for cost-effective emission reductions on a large scale appears to exist.

11.3 Definition and Description of Small Entities

Small entities include small businesses, small organizations, and small governmental jurisdictions. For the purposes of assessing the impacts of the proposed rule on small entities, a small entity is defined as: (1) a small business that meets the definition for business based on the Small Business Administration’s (SBA) size standards (see Table 11-1); (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field. Table 11-1 provides an overview of the primary SBA small business categories potentially affected by this regulation.

Table 11-1
Small Business Definitions

Industry	Defined as small entity by SBA if:	Major SIC Codes ^a
Engine manufacturers	Less than 1,000 employees	Major Group 35
Equipment manufacturers: - construction equipment - industrial truck manufacturers (i.e., forklifts) - all other nonroad equipment manufacturers	Less than 750 employees Less than 750 employees Less than 500 employees	Major Group 35 Major Group 35 Major Group 35
Fuel refiners	Less than 1500 employees ^b	2911
Fuel distributors	<varies>	<varies>

^a Standard Industrial Classification

^b We have included in past fuels rulemakings a provision that, in order to qualify for the small refiner flexibilities, a refiner must also have a company-wide crude refining capacity of no greater than 155,000 barrels per calendar day. We have included this criterion in the small refiner definition for a nonroad diesel sulfur program as well.

11.3.1 Description of Nonroad Diesel Engine and Equipment Manufacturers

To assess how many engine and equipment manufacturers would directly be affected by the proposed rule which may meet these small entity criteria, we first created a database consisting of firms listed in the Power Systems Research database and compared this with the list of companies from the analysis performed for the 1998 nonroad rulemaking along with membership lists from trade organizations. We then found sales and employment data for the parent companies of these firms using databases such as the Thomas Register and Dun and Bradstreet. Due to the wide variety in the types of equipment which use nonroad diesel engines, there are numerous SIC codes in which the equipment manufacturers report their sales, though the majority of the firms are listed under the SIC major group 35xx- *Industrial and Commercial Machinery and Computer Equipment*.

11.3.2 Description of the Nonroad Diesel Fuel Industry

The analysis that we developed for the refining industry is built on analysis that was performed for the gasoline and highway diesel sulfur programs in recent years. Information about the characteristics of refiners comes from sources including the Energy Information Administration within the U.S. Department of Energy, and from oil industry literature. Our current assessment is that the refining industry is located primarily in SIC 2911. In both the gasoline sulfur and highway diesel sulfur rules, we applied specific small refiner flexibilities to refiners that have no more than 1500 employees and no greater than 155,000 barrels per calendar day crude capacity. For transporters, distributors, and marketers of nonroad diesel fuel, trade groups are the key sources thus far for information about this industry. This industry sector includes several types of businesses that fall into several different SBA small entity criteria; our assessment is that the vast majority of these entities are small.

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11.4 Summary of Small Entities to Which the Rulemaking Will Apply

The following sections discuss the small entities - namely nonroad diesel engine manufacturers, nonroad diesel equipment manufacturers, and nonroad fuel refiners and fuel marketers/distributors - directly regulated by this proposed rule. Also, Table 11-2 lists our assessment of the number of small entities that will be directly affected by this rulemaking.

Table 11-2
Number of Small Entities To Which the Nonroad Diesel Rule Will Apply

Industry	Defined as small entity by SBA if:	Number of Affected Entities
Engine manufacturers	Less than 1,000 employees	4 ^a
Equipment manufacturers	(see criteria in Table 11-1)	335 ^a
Fuel refiners	Less than 1500 employees	26
Fuel distributors	<varies>	see discussion below

^a The numbers of affected entities for these categories are taken from the total number of companies that were used in our screening analysis (i.e., companies with publicly available employee and sales data).

11.4.1 Nonroad Diesel Engine Manufacturers

We conducted a preliminary industry profile to identify the engine and equipment manufacturers that are in the nonroad diesel sector. We identified more than 1,000 businesses that fit this description; however, due to a lack of publicly available sales or employment data, some of these entities could not be confirmed for consideration in the analysis.

Using information from the preliminary industry profile, we identified a total of 61 engine manufacturers. The top 10 engine manufacturers comprise over 80 percent of the total market, while the other 51 companies make up the remaining percentage.^A Of the 61 manufacturers, four fit the SBA definition of a small entity. These four manufacturers were Anadolu Motors, Farymann Diesel GmbH, Lister-Petter Group, and V & L Tools (parent company of Wisconsin Motors LLC, formerly 'Wis-Con Total Power'). These businesses comprise approximately 8 percent of the total engine sales for the year 2000.

Wisconsin Motors produces diesel engines for a small niche market and served as a Small Entity Representative (SER) during the Small Business Advocacy Review Panel process, speaking to the needs of small engine manufacturers.

^A All sales information used for this analysis was 2000 data.

11.4.2 Nonroad Diesel Equipment Manufacturers

The proposed rule may result in equipment manufacturers incurring increased costs as a result of the need to make changes to their equipment to accommodate changes to the engine size and the addition of an aftertreatment package. The vast majority of equipment manufacturers are not integrated companies, meaning that they do not make the engines they install. Thus, most equipment manufacturers are largely dependent on engine manufacturers for the availability of pre-production information about the new engines and for a sufficient supply of the engines once production begins. Equipment manufacturers that are small businesses may, in general, face a disproportionate degree of hardship in adapting to these types of changes in design and increased costs of new, cleaner engines.

To determine the number of equipment manufacturers, we also used the industry profile that was conducted. From this, we identified more than 700 manufacturers with sales and/or employment data that could be included in the screening analysis. These businesses included manufacturers in the construction, agricultural, and outdoor power equipment (mainly, lawn and garden equipment) sectors of the nonroad diesel market. The equipment produced by these manufacturers ranged from small (sub-25 hp walk-behind equipment) to large (in excess of 750 hp, such as mining and construction equipment). Of the manufacturers with available sales *and* employment data (approximately 500 manufacturers), small equipment manufacturers represent 68 percent of total equipment manufacturers (and these manufacturers account for 11 percent of nonroad diesel equipment industry sales). Thus, the majority of the small entities that could potentially experience a significant impact as a result of this rulemaking are in the nonroad equipment manufacturing sector.

11.4.3 Nonroad Diesel Fuel Refiners

Our current assessment is that 26 refiners (collectively owning 33 refineries) meet SBA's definition of a small business for the refining industry. The 33 refineries appear to meet both of the employee number and production volume criteria mentioned above, out of a total of approximately 91 nonroad refineries. These small refiners currently produce approximately 6 percent of the total high-sulfur diesel fuel. It should be noted that because of the dynamics in the refining industry (e.g., mergers and acquisitions), the actual number of refiners that ultimately qualify for small refiner status under a future nonroad diesel sulfur program could be different from this initial estimate.

11.4.4 Nonroad Diesel Fuel Distributors and Marketers

The industry that transports, distributes, and markets nonroad diesel fuel encompasses a wide range of businesses, including bulk terminals, bulk plants, fuel oil dealers, and diesel fuel trucking operations, and totals thousands of entities that have some role in this activity. More than 90 percent of these entities would meet small entity criteria. Common carrier pipeline companies are also a part of the distribution system; 10 of them are small businesses.

11.5 Related Federal Rules

The proposed certification fees rule, through the Agency's Certification and Compliance Division, may be in place by the time this rule is being implemented, and EPA took this potential cost into consideration when assessing the effects that this rule may have on small businesses.

The fuel regulations that we expect to propose would be similar in many respects to the existing sulfur standard for highway diesel fuel. We are not aware of any area where the regulations under consideration would directly duplicate or overlap with the existing federal, state, or local regulations; however, several small refiners will also be subject to the gasoline sulfur and highway diesel sulfur control requirements, as well as air toxics requirements.

More stringent nonroad diesel sulfur standards may require some refiners to obtain permits from state and local air pollution control agencies under the Clean Air Act's New Source Review program prior to constructing the desulfurization equipment needed to meet the standards.

The Internal Revenue Service has an existing rule that levies taxes on highway diesel fuel only. The rule requires that nonroad diesel (untaxed) fuel be dyed so that regulators and customers will know which type of fuel is which.

11.6 Projected Reporting, Recordkeeping, and Other Compliance Requirements

As with any emission control program, the Agency must have the assurance that the regulated entities will meet the emissions standards and all related provisions. For engine and equipment manufacturers, EPA proposes to continue the reporting, recordkeeping, and compliance requirements prescribed for these categories in 40 CFR part 89. Key among these are certification requirements and provisions related to reporting of production, emissions information, use of transition provisions, etc.

For any fuel control program, EPA must have the assurance that fuel produced by refiners meets the applicable standard, and that the fuel continues to meet the standard as it passes downstream through the distribution system to the ultimate end user. This is particularly important in the case of diesel fuel, where the aftertreatment technologies expected to be used to meet the engine standards under consideration are highly sensitive to sulfur. The recordkeeping, reporting and compliance provisions of the proposed rule are fairly consistent with those currently in place for other fuel programs, including the current 15 ppm highway diesel regulation. For example, recordkeeping involves the use of product transfer documents, which are already required under the 15 ppm highway diesel sulfur rule.

11.7 Projected Economic Effects of the Proposed Rulemaking

The projected costs of the rulemaking on a per engine basis were independent of the size of the engine or equipment manufacturer. A full discussion of these costs, and the corresponding methodology, is located in Chapter 6 of this Draft RIA. Of the 710 entities with publicly available sales data, our screening analysis found that the average total annual compliance costs would be \$33,000 per small entity and \$4.42 million per large entity. Further, a cost-to-sales ratio test, a ratio of the estimated annualized compliance costs to the value of sales per company, was performed for these entities.^B We found that approximately 4 percent (13 companies) of small entities in the engine and equipment manufacturing industry were affected between 1 and 3 percent of sales (i.e., the estimated costs of compliance with the proposed rule would be greater than 1 percent, but less than 3 percent, of their sales). 1 percent (4 companies) of small entities were affected at greater than 3 percent. In all, 17 of the 518 potentially affected small engine and equipment manufacturers are estimated to have compliance costs that could exceed 1 percent of their sales.

Based on our outreach, fact-finding, and analysis of the potential impacts of our regulations on small businesses, the Panel concluded that small refiners in general would likely experience a significant and disproportionate financial hardship in reaching the objectives of the proposed nonroad diesel fuel sulfur program. One indication of this disproportionate hardship for small refiners is the relatively high cost per gallon projected for producing nonroad diesel fuel under the proposed program. Refinery modeling (of all refineries), indicates significantly higher refining costs for small refiners. Specifically, we project that without special provisions, refining costs for small refiners on average would be about 5.5 cents per gallon compared to about 4.0 cents per gallon for non-small refiners. Chapter 7 of this Draft RIA further discusses the estimated costs of production and distribution of low sulfur fuels.

The majority of the fuel-related cost of the proposal is refining-related, with only 15-25 percent of the costs being distribution-related. The proposed allowance that highway and off-highway diesel engine fuel meeting the same sulfur specification can be shipped fungibly until it leaves the terminal obviates the need for additional storage tankage in this segment of the distribution system.^C The proposed rule would also allow 500 ppm off-highway diesel engine fuel to be mixed with high-sulfur diesel fuel once the fuels are dyed to meet IRS requirements. This provision would ease the last part of the distribution of high-sulfur nonroad, locomotive, and marine (NRLM) diesel fuel.

^B The cost-to-sales ratio test assumes that control costs are completely absorbed by each entity and does not account for or consider interaction between manufacturers/producers and consumers in a market context.

^C Including the refinery, pipeline, marine tanker, and barge segments of the distribution system.

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For a complete discussion of the economic impacts of the proposed rulemaking, see Chapter 10, the economic impact analysis chapter, of this Draft RIA.

11.8 Regulatory Alternatives

The Panel's findings and discussions are based on the information that was available during the term of the Panel and issues that were raised by the SERs during the outreach meetings and in their written comments. It was agreed that EPA should consider the issues raised by the SERs (and issues raised in the course of the Panel) and that EPA should consider the comments on flexibility alternatives that would help to mitigate any negative impacts on small businesses. Alternatives discussed throughout the Panel process include those offered in the development of the upcoming rule. Though some of the recommended flexibilities may be appropriate to apply to all entities affected by the rulemaking, the Panel's discussions and recommendations are focused mainly on the impacts, and ways to mitigate adverse impacts, on small businesses. A summary of the Panel's recommendations, along with those provisions that we are actually proposing in this action, are detailed below. A full discussion of the regulatory alternatives and hardship provisions discussed and recommended by the Panel, all written comments received from SERs, and summaries of the two outreach meetings that were held with the SERs can be found in the SBREFA Final Panel Report.¹ In addition, all of the flexibilities (or 'transition provisions') that were proposed in the rulemaking for small businesses, as well as those for all entities that may be affected by the rulemaking, are described in the preamble to the proposed rule.

11.8.1 Small Engine Manufacturers

The Panel developed a wide range of regulatory alternatives to mitigate the impacts of the rulemaking on small businesses, and recommended that we propose and seek comment on the flexibilities. Described below are the flexibility options recommended by the Panel, along with alternatives that were suggested by some individual Panel members, and our proposed regulatory alternatives.

11.8.1.1 Flexibility Alternatives for Small Engine Manufacturers

11.8.1.1.1 SBAR Panel Recommendations

Based on the recommendations of the Panel, the transition flexibilities that were under consideration were dependent upon what approach, or approaches, we proposed for the rulemaking. Further, each manufacturer would be limited to 2,500 units per year (to allow for some market growth). The proposed transition provisions are:

1. For an approach with two phases of standards the Panel recommended that:
 - an engine manufacturer could skip the first phase and comply on time with the second; or,

- a manufacturer could delay compliance with each phase of standards for up to two years.
- 2. For an approach that entails only one phase of standards, the manufacturer could opt to delay compliance. The Panel recommended that the length of the delay be a three-year period; the Panel also recommended that we take comment on whether this delay period should be two, three, or four years. Each delay would be pollutant-specific (i.e., the delay would apply to each pollutant as it is phased in).

All Panel members believed that the aforementioned options would offer an opportunity to reduce the burden on small manufacturers while at the same time meeting the regulatory goals of the Agency. Further, we believe that these options will not put small manufacturers at a significant disadvantage as they will be in compliance with the Tier 4 standards in the long run and the flexibility options will give them more lead time to comply.

11.8.1.1.2 EPA's Proposed Regulatory Alternatives

We feel that a complete exemption from the upcoming standards (even assuming that such an exemption could be justified legally) would put these manufacturers at a competitive disadvantage as the rest of the market will be producing compliant engines and only equipment able to accommodate compliant engines will be saleable. Due to the structure of the standards and their timing, as discussed in Section III of the preamble to the proposed rulemaking, we are proposing regulatory alternatives, or transition provisions, for small engine manufacturers which encompass both approaches recommended by the Panel (with the inclusion of the 2,500 unit limit for each manufacturer).

- With regard to PM:
 - Engines under 25 hp, and those between 75 and 175 hp, have only one standard so the manufacturer could delay compliance with these standards for up to three years. Based on available data, we believe that there are no small manufacturers of nonroad diesel engines above 175 hp.
 - For engines between 50 and 75 hp, we are proposing a one phase program with the option to delay compliance for one year if interim standards are met. For this power category we are treating the PM standard as a two phase standard with the stipulation that small manufacturers cannot use PM credits to meet the interim standard. Furthermore, if a small manufacturer elects the optional approach to the standard (i.e., opts to skip the interim standard), no further relief will be provided. See Section III of the preamble to the proposed rulemaking for further detail on the PM standards for engine manufacturers.
- With regard to NOx:
 - There is no change in the NOx standard for engines under 25 hp and those between 50 and 75 hp, therefore, we are not proposing special provisions for these two power bands.
 - For engines in the 25-50 hp and the 75-175 hp categories we are proposing a three year delay in the program consistent with the one-phase approach recommendation

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above. Again, based on available data, we believe that there are no small manufacturers of nonroad diesel engines above 175 hp.

11.8.1.2 Hardship Provisions for Small Engine Manufacturers

11.8.1.2.1 SBAR Panel Recommendations

The Panel recommended that two types of hardship provisions be extended to small engine manufacturers. These provisions are:

1. For the case of a catastrophic event, or other extreme unforeseen circumstances, beyond the control of the manufacturer that could not have been avoided with reasonable discretion (i.e., fire, tornado, supplier not fulfilling contract, etc.); and
2. For the case where a manufacturer has taken all reasonable business, technical, and economic steps to comply but cannot do so.

Either relief provision could provide lead time for up to 2 years—in addition to the flexibilities listed above in Section 11.8.1.1—and a manufacturer would have to demonstrate to the Agency’s satisfaction that failure to sell the noncompliant engines would jeopardize the company’s solvency. The Panel further recommended that the Agency may require that the manufacturer make up the lost environmental benefit through the use of programs such as supplemental environmental projects.

For the flexibilities listed above, the Panel recommended that engine manufacturers and importers must have certified engines in model year 2002 or earlier in order to take advantage of these provisions. Each manufacturer would be limited to 2,500 units per year (to allow for some market growth). These provisions were recommended by the Panel in order to prohibit the misuse of these flexibilities as a tool to enter the nonroad diesel market or to gain unfair market position relative to other manufacturers.

11.8.1.2.2 EPA’s Proposed Hardship Provisions

We are proposing to adopt the Panel recommendations for hardship provisions for small engine manufacturers. While perhaps ultimately not necessary given the phase-in schedule discussed above, we believe that such provisions provide a useful safety valve in the event of unforeseen extreme hardship.

11.8.1.3 Other Small Engine Manufacturer Issues

11.8.1.3.1 SBAR Panel Recommendations

It was also recommended by the Panel that an emission-credit program of averaging, banking, and trading (ABT) be included as part of the overall rulemaking program.

11.8.1.3.2 EPA's Proposal

As discussed in Section VII of the preamble to this proposal, we are indeed proposing ABT provisions. ABT is being proposed as it is intended to enhance the flexibility offered to engine manufacturers that will be of assistance in making the transition to meet the stringent standards in this proposed rule in the leadtime proposed. As noted in Section VII.A, we are proposing to retain the basic structure of the current nonroad diesel ABT program, though a number of changes (which will help to accommodate implementation of the proposed emission standards) are being proposed with this action.

Though the Panel recommended small engine manufacturer-specific ABT provisions, such provisions are not being included in this proposal. We do not believe it would be appropriate to provide a different ABT program for small engine manufacturers, especially given the special provisions that are proposed above. Discussions during the SBAR process indicated that small volume manufacturers would need extra time to comply due to cost and personnel constraints, and there is little reason to believe that small manufacturer specific ABT provisions could create an incentive to accelerate compliance. Small manufacturers would of course be able to participate in the general ABT program.

11.8.1.4 SBA Office of Advocacy Observations

11.8.1.4.1 What One Panel Member Observed

The SBA Chief Counsel for the Office of Advocacy offered some observations about the impacts of the regulatory approaches on affected small engine and equipment manufacturers. While the other Panel members did not join in these observations, the Panel recommended that the Administrator carefully consider these points and examine further the factual, legal and policy questions raised here in developing the proposed rule. First, given the available information, the Office of Advocacy stated that they had substantial doubts about the technical feasibility and cost of engineering aftertreatment devices into a wide diversity of nonroad diesel applications for engines less than 50 kilowatts (70 hp). They stated that considerable concern has been raised regarding the technical feasibility of aftertreatment devices, even for larger engines, and particularly in the case of NO_x adsorbers. Second, the low retail cost and low annual production for many of these applications make it extremely difficult for the equipment manufacturer to absorb these additional costs. Third, Advocacy believes that given the small size of these engines, and the typically small useful life, and the fact that these engines are already subject to Tier 2 regulations, the environmental reductions attributable to such engines would be relatively small. The Office of Advocacy believes that, based on the available information, the Agency does not have a sufficient basis to move forward with a proposal that would require nonroad engines under 50 kilowatts to use aftertreatment devices.

Based on the SERs' concerns about the technical feasibility of the Tier 4 standards, and the technical information discussed in the Panel report, SBA recommended that we include a

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technological review of the standards in the 2008 timeframe in the rulemaking proposal. The Panel recommended that we consider this recommendation.

11.8.1.4.2 EPA's Observations

SBA Office of Advocacy stated that considerable concern has been raised regarding the technical feasibility of PM and NO_x aftertreatment devices, particularly in the case of NO_x adsorbers. As explained in the preamble, we have found no factual basis for this statement with respect to PM controls based on use of advanced aftertreatment for engines between 25 and 75 hp. We are not proposing standards based on performance of advanced aftertreatment for engines under 25 hp, and for NO_x, for engines 75 hp and under.

With respect to the PM standards for these engines, however, EPA disagrees with the statement made by the Office of Advocacy that, based on available information, we do not have a sufficient basis to move forward with this proposed rulemaking requiring nonroad engines under 50 kW to use aftertreatment devices. As we have documented in the preamble and elsewhere in this Draft RIA, EPA believes that the standards for PM for engines in these power ranges are feasible at reasonable cost, and will help to improve very important air quality problems, especially by reducing exposure to diesel PM and by aiding in attainment of the PM 2.5 National Ambient Air Quality Standards (NAAQS). Indeed, given these facts, EPA is skeptical that an alternative of no PM standards for these engines would be appropriate under section 213 (a) (4). Moreover, the statement regarding cost impacts fails to account for transition flexibilities provided all equipment manufacturers as part of the proposal.

11.8.2 Nonroad Diesel Equipment Manufacturers

11.8.2.1 Flexibility Alternatives for Small Equipment Manufacturers

11.8.2.1.1 SBAR Panel Recommendations

The Panel recommended that we propose to continue the transition provisions offered for the Tier 1 and Tier 2 nonroad diesel emission standards, as set out in 40 CFR 89.102, with some potential modifications. The recommended transition provisions for small manufacturers are:

1. **Percent-of-Production Allowance:** Over a seven model year period, equipment manufacturers may install engines not certified to the new emission standards in an amount of equipment equivalent to 80 percent of one year's production. This is to be implemented by power category with the average determined over the period in which the flexibility is used.
2. **Small Volume Allowance:** A manufacturer may exceed the 80 percent allowance in seven years as described above, provided that the previous Tier engine use does not exceed 700 total over seven years, and 200 in any given year. This is limited to one family per power category. Alternatively, the Panel also recommended, at the manufacturer's choice by hp

category, a program that eliminates the “single family provision” restriction with revised total and annual sales limits as shown below:

- For categories ≤ 175 hp - 525 previous Tier engines (over 7 years) with an annual cap of 150 units (these engine numbers are separate for each hp category defined in the regulations).
- For categories of > 175 hp - 350 previous Tier engines (over 7 years) with an annual cap of 100 units (these engine numbers are separate for each hp category defined in the regulations).

The Panel recommended that we seek comment on the total number of engines and annual cap values listed above. In contrast to the Tier 2/Tier3 rule promulgated in 1998, SBA expects the transition to the Tier 4 technology will be more costly and technically difficult. Therefore, the small equipment manufacturers may need more liberal flexibility allowances especially for equipment using the lower hp engines. The Panel’s recommended flexibility may not adequately address the approximately 50 percent of small business equipment models where the annual sales per model is less than 300 and the fixed costs are higher. Thus, SBA and OMB recommended that we seek comment on implementing the small volume allowance (700 engine provision) for small equipment manufacturers without a limit on the number of engine families which could be covered in any hp category.

3. In addition, due to the changing nature of the technology as the manufacturers transition from Tier 2 to Tier 3 and Tier 4, the Panel recommended that the equipment manufacturers be permitted to borrow from the Tier3/Tier 4 flexibilities for use in the Tier 2/Tier 3 time frame.

To maximize the likelihood that the application of these flexibilities will result in the availability of previous Tier engines for use by the small equipment manufacturers, the Panel recommended that - similar to the application of flexibility options that are currently in place - these three flexibilities should be provided to all equipment manufacturers. (See discussion on transition provisions for all equipment manufacturers in Section VII.B of the proposed rule preamble.)

An issue was raised that we establish a provision which would allow manufacturers to request limited “application specific” alternative standards for equipment configurations which present unusually challenging technical issues for compliance. The three flexibilities recommended above would provide latitude, at least in the near term, and a properly structured emission-credit program for the engine manufacturers would provide long-term latitude. Even if one were to assume that these flexibilities provide insufficient leeway (which may not be the case), application specific standards would still be cumbersome for both the small equipment manufacturers and for the Agency. Nonetheless, the Panel recommended that we seek comment on the need for and value of special application specific standards for small equipment manufacturers.

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11.8.2.1.2 EPA's Proposed Regulatory Alternatives

We are in fact proposing the Percent-of-Production and Small Volume Allowances for all equipment manufacturers, and explicitly took the Panel report into account in making that proposal (see Section VII.B of the preamble). We believe that this proposal should provide the type of transition leeway recommended by the Panel. We believe that the transition provisions could allow small equipment manufacturers to postpone any redesign needed on low sales volume or difficult equipment packages, thus saving both money and strain on limited engineering staffs. Within limits, small equipment manufacturers would be able to continue to use their current engine/equipment configuration and avoid out-of-cycle equipment redesign until the allowances are exhausted or the time limit passes.

In regards to the Panel's suggested exemption and annual cap values listed above, we have requested comment on both of these elements in Section VII.B of the preamble to the proposed rule. We have also requested comment on implementing the small volume allowance provision without the single family limit provision using caps slightly lower than 700 units, with this provision being applied separately to each engine power category subject to the proposed standards.

Similar to the discussion in Section VII.B of the proposed rule preamble, we are requesting comment on new proposed requirements associated with the use of transition provisions by foreign importers. During the SBREFA Panel process, the Panel discussed the possible misuse of the transition provisions by using them as a loophole to enter the nonroad diesel equipment market or to gain unfair market position relative to other manufacturers. The Panel recognized that this was a possible problem, and believed that the requirement that small equipment manufacturers and importers have reported equipment sales using certified engines in model year 2002 or earlier was sufficient to alleviate this problem. Upon further analysis, EPA found that importers of equipment from a foreign equipment manufacturer could as a group import more exempted equipment from that foreign manufacturer than 80 percent of that manufacturer's production for the US market or more than the small volume allowances identified in the transition provisions. This also creates a potentially significant disparity between the treatment of foreign and domestic equipment manufacturers. We did not intend this outcome, and we do not believe that it is needed to provide reasonable leadtime to foreign equipment manufacturers.

The purpose of these transition provisions is to lessen the burden on small equipment manufacturers. Therefore, we are requesting comment on the additional requirement that only the small nonroad diesel equipment manufacturer that is most responsible for the manufacturing and assembling process, and therefore the burden of complying with the proposed standards, would qualify for the allowances provided under the small equipment manufacturer transition provisions. Under this requirement, only a small importer that produces or manufactures nonroad diesel equipment would be eligible for these transition provisions. A small importer that does not manufacture or produce equipment does not face a burden in complying with the proposed standard, and therefore would not receive any allowances under these transition provisions directly, but could import exempt equipment if it is covered by an allowance or

transition provisions associated with a foreign small equipment manufacturer. We believe that this requirement transfers the flexibility offered in these transition provisions to the party with the burden and would allow transition provisions and allowances to be used by foreign small equipment manufacturers in the same way as domestic small equipment manufacturers, while avoiding the potential for misuse by importers of unnecessary allowances.

We are also proposing the Panel's recommendation that equipment manufacturers be allowed to borrow from Tier 4 flexibilities in the Tier2/3 timeframe. See the more extended discussion on this issue in Section VII.B of the preamble.

With regard to the Panel recommendation for a provision allowing small manufacturers to request limited "application specific" alternative standards for equipment configurations which present unusually challenging technical issues for compliance, we have requested comment on this recommendation (in Section VII.C of the preamble to the proposed rule). We believe that the need for such a provision has not been established and putting it forth without more information could provide more lead time than can be justified, and could undermine emission reductions which are achievable. Moreover, no participant in the SBAR process offered any empirical support that such a problem even exists. Nor have such issues been demonstrated (or raised) by equipment manufacturers, small or large, in implementing the current nonroad standards. Further, we believe that any application-specific difficulties can be accommodated by the transition provisions the Agency is proposing including ABT. Nonetheless, in keeping with the SBAR recommendations, we have requested comment on the value of, and need for, special application specific standards for small equipment manufacturers in the preamble.

11.8.2.2 Hardship Provisions for Small Equipment Manufacturers

11.8.2.2.1 SBAR Panel Recommendations

The Panel also recommended that two types of hardship provisions be extended to small equipment manufacturers. These provisions are:

1. For the case of a catastrophic event, or other extreme unforeseen circumstances, beyond the control of the manufacturer that could not have been avoided with reasonable discretion (i.e., fire, tornado, supplier not fulfilling contract, etc.); and
2. For the case where a manufacturer has taken all reasonable business, technical, and economic steps to comply but cannot. In this case relief would have to be sought before there is imminent jeopardy that a manufacturer's equipment could not be sold and a manufacturer would have to demonstrate to the Agency's satisfaction that failure to get permission to sell equipment with a previous Tier engine would create a serious economic hardship. Hardship relief of this nature cannot be sought by a manufacturer which also manufactures the engines for its equipment.

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11.8.2.2.2 EPA's Proposed Hardship Provisions

We are proposing that the Panel recommended hardship provisions be extended to small equipment manufacturers in addition to the transition provisions described above. To be eligible for these hardship provisions (as well as for the proposed transition provisions), equipment manufacturers and importers must have reported equipment sales using certified engines in model year 2002 or earlier. As explained earlier (and also in Sections VII.B and VII.C of the preamble to the proposed rule), this proposal is needed to thwart misuse of these provisions as a loophole to enter the nonroad diesel equipment market or to gain unfair market position relative to other manufacturers and we request comment on this restriction.

As explained earlier in Section VII.B of the preamble to the proposed rule, hardship relief would not be available until other allowances have been exhausted. Either relief provision would provide additional lead time for small equipment manufacturers for up to two model years based on the circumstances, but we may require recovery of the lost environmental benefit.

11.8.3 Nonroad Diesel Fuel Refiners

11.8.3.1 Flexibility Alternatives for Small Fuel Refiners

11.8.3.1.1 SBAR Panel Recommendations

The Panel considered a range of options and regulatory alternatives for providing small refiners with flexibility in complying with new sulfur standards for nonroad diesel fuel. Taking into consideration the comments received on these ideas during the Panel process, as well as additional business and technical information gathered about potentially affected small entities, the Panel recommended that whether we propose a one-step or a two-step approach, we should provide for delayed compliance for small refiners as shown in Table 11-3 below.

Table 11-3
SBREFA Panel Small Refiner Options Under
Potential 1-Step and 2-Step Nonroad Diesel Base Programs
Recommended Sulfur Standards (in parts per million, ppm)^a

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015+
Under 1-Step Program										
Non-Small ^b	--	--	15	15	15	15	15	15	15	15
Small	--	--	--	--	--	--	15	15	15	15
Under 2-Step Program										
Non-Small ^c	--	500	500	500	15	15	15	15	15	15
Small	--	--	--	--	500	500	500	500	15	15

^a New standards are assumed to take effect June 1 of the applicable year.

^b Assumes 500 ppm standard for marine + locomotive fuel for non-small refiners for 2008, and for small refiners for 2012 and later.

^c Assumes 500 ppm standard for marine + locomotive fuel for non-small refiners for 2007, and for small refiners for 2010 and later.

11.8.3.1.2 EPA's Proposed Regulatory Alternatives

We have continued to consider the issues raised during the SBREFA process and have decided to propose each of the flexibility provisions recommended by the Panel. Because we are proposing in this rule a two-step approach to fuel implementation, we are thus proposing the small refiner relief provisions as recommended by the Panel for a two-step program, which are shown in Table 11-4 below.

Table 11-4
Small Refiner Options 2-Step Nonroad Diesel Base Programs
Recommended Sulfur Standards (in parts per million (ppm))^a

Under 2-Step Program	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015+
Non-Small ^b	—	500	500	500	15	15	15	15	15	15
Small	—	—	—	—	500	500	500	500	15	15

^a New standards are assumed to take effect June 1 of the applicable year.

^b Assumes 500 ppm standard for marine + locomotive fuel for non-small refiners for 2007 and later and for small refiners for 2010 and later.

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Generally, we have structured these proposed provisions to address small refiner hardship while expeditiously achieving air quality benefits and ensuring that the availability of 15 ppm nonroad diesel fuel would coincide with the introduction of 2011 model year nonroad diesel engines and equipment. The following paragraphs review the reasons we believe that the special provisions for small refiners recommended by the Panel are necessary and appropriate.

First, the proposed compliance schedule for the nonroad diesel program, combined with flexibility for small refiners, would achieve the air quality benefits of the program as soon as possible, while helping to ensure that small refiners will have adequate time to raise capital for new or upgraded fuel desulfurization equipment. Most small refiners have limited additional sources of income beyond refinery earnings for financing and typically do not have the financial backing that larger and generally more integrated companies have. Therefore, they can benefit from additional time to accumulate capital internally or to secure capital financing from lenders.

Second, we recognize that while the sulfur levels in the proposed program can be achieved using conventional refining technologies, new technologies are also being developed that may reduce the capital and/or operational costs of sulfur removal. Thus, we believe that allowing small refiners some additional time for newer technologies to be proven out by other refiners would have the added benefit of reducing the risks faced by small refiners. The added time would likely allow for lower costs of these improvements in desulfurization technology (e.g., better catalyst technology or lower-pressure hydrotreater technology). This would help to offset the disproportionate financial burden facing small refiners.

Third, providing small refiners more time to comply would increase the availability of engineering and construction resources. Most refiners would need to install additional processing equipment to meet the nonroad diesel sulfur requirements. We anticipate that there may be significant competition for technology services, engineering resources, and construction management and labor. In addition, vendors will be more likely to contract their services with the larger refiners first, as their projects will offer larger profits for the vendors. Temporarily delaying compliance for small refiners would spread out the demand for these resources and probably reduce any cost premiums caused by limited supply.

We have also requested comment on a slightly different compliance schedule that would require small refiners to produce 15 ppm nonroad diesel fuel beginning June 1, 2013, one year earlier than proposed above. Such a schedule would align the end of the interim small refiner provisions with the end of the proposed phase-in for nonroad engines and equipment and eliminate higher sulfur nonroad fuel from the distribution system by the time all new engines required 15 ppm fuel.

11.8.3.2 Small Refiner Incentives for Early Compliance

11.8.3.2.1 SBAR Panel Recommendations

The SBAR Panel also recommended that we propose certain provisions to encourage early compliance with lower sulfur standards. The Panel recommended that we propose that small refiners be eligible to select one of the two following options:

1. **Credits for Early Desulfurization:** The Panel recommended that we propose, as part of an overall trading program, a credit trading system that allows small refiners to generate and sell credits for nonroad diesel fuel that meets the small refiner standards earlier than that required in the above table. Such credits could be used to offset higher sulfur fuel produced by that refiner or by another refiner that purchases the credits.
2. **Limited Relief on Small Refiner Interim Gasoline Sulfur Standards:** The Panel recommended that a small refiner producing its entire nonroad diesel fuel pool at 15 ppm sulfur by June 1, 2006, and that chooses not to generate nonroad credits for its early compliance, receive a 20 percent relaxation in its assigned small refiner interim gasoline sulfur standards. However, the Panel recommended that the maximum per-gallon sulfur cap for any small refiner remain at 450 ppm.

11.8.3.2.2 EPA's Proposal

We agree with the Panel recommendation of encouraging early compliance with the standards. Some small refiners have indicated that they might find it necessary to produce fuel meeting the nonroad diesel sulfur standards earlier than they would be required to under the small refiner program described above, for a variety of reasons: some small refiners could find that their distribution systems limit the number of grades of diesel fuel that will be carried; others might find it economically advantageous to make 500 ppm or 15 ppm fuel earlier so as not to lose market share; and one small refiner indicated that it could decide to desulfurize its nonroad pool at the same time as its highway diesel fuel, in June of 2006 (due to limitations in its distribution system and to take advantage of economies of scale). Given these situations, we are proposing that small refiners be able to choose between the two mutually exclusive options, as recommended by the Panel, to provide incentives for early compliance.

More specifically, with the first option a small refiner could generate NRLM diesel sulfur credits for production of 500 ppm NRLM diesel fuel prior to June 1, 2010, and for production of 15 ppm nonroad fuel from June 1, 2010 through May 31, 2012. The specifics of the overall credit program, including how they would be applicable to small refiners, are described in Section IV of the proposed rulemaking preamble.

A refiner that qualifies for the second option could receive a modest revision in its interim small refiner gasoline sulfur standards, starting January 1, 2004. Specifically, the applicable small refiner annual average and per-gallon cap gasoline standards would be revised upward by

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20 percent for the duration of the small refiner gasoline sulfur interim program (i.e., through either 2007 or 2010, depending on whether the refiner had extended its participation in the gasoline sulfur interim program by complying with the highway diesel standard at the beginning of that program (June, 2006, as provided in 40 CFR 80.552(c))). However, as recommended by the Panel, in no case could the per-gallon cap exceed 450 ppm, the highest level allowed under the gasoline sulfur program.

We believe it is very important to link any such temporary relaxation of a small refiner gasoline sulfur interim sulfur standards with environmental benefit of early desulfurization of a significant volume of nonroad diesel fuel. Thus, we are proposing that a small refiner wishing to use the second option produce a minimum volume of nonroad diesel fuel at 15 ppm by June 1, 2006. Each participating small refiner would need to produce a volume of 15 ppm fuel that was at least 85 percent of the volume represented by its non-highway distillate baseline percentage. If the refiner began to produce gasoline in 2004 at the higher interim standard of this provision but then either failed to meet the 15 ppm standard for its nonroad fuel or failed to meet the 85 percent minimum volume requirement, the original small refiner interim gasoline sulfur standard applicable to that refiner would be reinstated. In addition, the refiner would need to compensate for the higher gasoline levels that it had enjoyed by purchasing gasoline sulfur credits or producing an equivalent volume of gasoline below the required sulfur levels. These compensation provisions are discussed further in Section VIII of the preamble. Under this option, a small refiner could in effect shift some funds from its gasoline sulfur program to accelerate desulfurization of nonroad diesel fuel. Given the environmental benefit that would result from the production of 15 ppm fuel earlier than necessary, and the small potential loss of emission reduction under the gasoline sulfur program from fuel produced by the very few small refiners that we believe would qualify under this second option, we believe the environmental impact of this option would be neutral or positive.

11.8.3.3 Hardship Provisions for Small Fuel Refiners

11.8.3.3.1 SBAR Panel Recommendations

The Panel recommended that we propose refiner hardship provisions modeled after those established under the gasoline sulfur and highway diesel fuel sulfur program (see 40 CFR 80.270 and 80.560). Specifically, the Panel recommended that we propose a process that, like the hardship provisions of the gasoline and highway diesel rules, allows refiners to seek case-by-case approval of applications for temporary waivers to the nonroad diesel sulfur standards, based on a demonstration to the Agency of extreme hardship circumstances. This provision would allow domestic and foreign refiners, including small refiners, to request additional flexibility based on a showing of unusual circumstances that result in extreme hardship and significantly affect the ability of the refiner to comply by the applicable date, despite its best efforts.

11.8.3.3.2 EPA's Proposed Hardship Provisions

We believe that providing short-term relief to those refiners that need additional time because they face hardship circumstances facilitates adoption of an overall program that reduces NRLM diesel fuel sulfur to 500 ppm beginning in 2007, and nonroad diesel fuel sulfur to 15 ppm in 2010, for the majority of the industry.

11.8.4 Nonroad Diesel Fuel Distributors and Marketers

The diesel fuel approach being considered by the Agency includes the possibility of there being two grades of nonroad diesel fuel (500/15 ppm) in the market place for at least a transition period. The distributors support a one-step approach because it has no significant impact on their operations. The distributors offered some suggestions on how they might deal with this issue, but indicated that there would be adverse impacts in some circumstances. The Panel recommended that we study this issue further. Chapter 7 of this Draft Regulatory Impact Analysis further discusses costs and related issues relevant to fuel distributors under our proposed program.

We have designed the proposed fuel sulfur program to minimize the need for additional product segregation and the associated feasibility and cost issues for fuel distributors associated with it. Beyond the accommodation of fuel distributor concerns during the overall design of the fuel program, it is not possible for us to provide special provisions for particular (i.e., small) fuel distributors to limit the potential impact of the proposed rule. The benefits of the proposed low sulfur diesel program can only be achieved if 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. The proposed program must also ensure sufficient availability of 15 ppm diesel fuel for use in nonroad engines in 2010 and not compromise the availability needs for 15 ppm diesel fuel for use in highway diesel engines under the highway diesel program, which begins in 2006. Thus, the low sulfur diesel fuel that we are proposing that refiners produce would need to be carried through the fuel distribution system to the end-user.

In order to allow for a smooth and orderly transition of diesel fuel in the distribution system to 15 ppm, we are proposing that parties downstream of the refineries be allowed a small amount of additional time to turnover their tanks to 15 ppm. We are proposing that at the terminal level, nonroad diesel fuel would be required to meet the 15 ppm sulfur standard beginning July 15, 2010. At bulk plants, wholesale purchaser-consumers, and any retail stations carrying nonroad diesel, this fuel would have to meet the 15 ppm sulfur standard by September 1, 2010. The proposed transition schedule for compliance with the 15 ppm standard at refineries, terminals, and secondary distributors are the same as those allowed under the recently promulgated highway diesel fuel program.

Further, to avoid the costs associated with segregating 500 ppm NRLM diesel fuel from 500 ppm highway fuel, we are proposing that the existing requirement that NRLM diesel fuel be dyed

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leaving the refinery would need to be made voluntary. This is discussed in Section 11.7 of this Draft RIA.

Chapter 11 References

1. Final Panel Report of the Small Business Advocacy Review Panel on EPA's Proposed Rule-Control of Emission of Air Pollution From Land-Based Nonroad Compression Ignition Engines, December 23, 2002.