



Regulatory Announcement

Proposed Emission Standards for New Highway Motorcycles and Recreational Boats

The U.S. Environmental Protection Agency (EPA) is proposing emission standards for new highway motorcycles and gasoline-powered recreational boats. The proposed standards would help reduce the harmful health effects of ozone and mobile source air toxics. These standards would not affect existing motorcycles or boats, only those manufactured after the effective date of the proposed standards.

Highlights of the Proposal

EPA has been working to reduce emissions from motor vehicles for over thirty years, including emissions standards for highway motorcycles that we adopted in 1978. Since 1994, we have also established emission-control programs for various classes and categories of nonroad engines, including those used in farm and construction, marine, locomotive, and lawn and garden applications. We set exhaust emission standards for outboard engines and personal watercraft in 1996. In this rulemaking, we are proposing to adopt new emission standards for exhaust emissions from highway motorcycles and evaporative emissions from gasoline-powered recreational boats (including yachts, sport boats, fishing boats, jet boats and other types of pleasure craft such as personal watercraft and boats with outboard engines).

We are proposing emission standards for highway motorcycles based on comparable requirements adopted in California. The proposal would

extend the California requirements nationwide two years after they initially take effect in California. We are also proposing emission standards for previously unregulated motorcycles with engines of less than 50 cubic centimeters displacement (such as scooters and mopeds).

The proposed marine standards would require boat builders to incorporate designs to prevent the loss of evaporating gasoline from marine fuel systems. This can be done with a mix of technologies, including permeation-resistant materials for fuel hoses and fuel tanks, and various approaches to keep fuel vapors inside the tank during heating and cooling cycles. In addition, we are requesting comment on our intention to propose exhaust emission standards for spark-ignition sterndrive and inboard marine engines at a later date, after completion of a technology study currently underway.

Background

Highway motorcycle proposal

The proposed highway motorcycle standards are being proposed under Section 202(a) of the Clean Air Act, which calls on EPA to review and periodically revise standards for engines subject to that section. This proposal follows an Advance Notice of Proposed Rulemaking that was published on December 7, 2000, (65 FR 76797) and expands on the program elements discussed in that document. EPA last implemented new standards for highway motorcycles in 1980. This proposal aligns exhaust emission control standards with the state of the technology currently available and also addresses potential evaporative emission control requirements.

Gasoline powered boats proposal

The proposed standards are a continuation of the process of establishing nonroad standards as required by section 213 of the Clean Air Act. That section directs EPA to study emissions from nonroad engines and vehicles to determine, among other things, whether these emissions “cause, or significantly contribute to, air pollution that may reasonably be anticipated to endanger public health or welfare.” Section 213 further requires EPA to determine whether emissions of carbon monoxide (CO), volatile organic compounds (VOC), and oxides of nitrogen (NOx) from all nonroad engines significantly contribute to ozone or CO emissions in more than one nonattainment area. If the Agency determines that emissions from all nonroad engines are significant contributors, section 213(a)(3) requires us to establish emission standards regulating CO, VOC, and NOx emissions from classes or categories of new nonroad engines and vehicles that in our judgment cause or contribute to such pollution.

EPA completed the Nonroad Engine and Vehicle Emission Study in November 1991. On June 17, 1994, we determined under section 213(a)(2) that nonroad emissions are significant contributors to ozone or CO in more than one nonattainment area. In the same document, we began the process of setting emission controls for nonroad engines. Also, in October 2001, EPA proposed standards for nonroad spark-ignition engines over 19 kilowatts (kW), recreational vehicles, and recreational marine diesel engines, which are subject to court-ordered deadlines. The standards proposed in this rulemaking were originally combined with these court-ordered proposals, but the proposal was divided to allow additional time for inter-agency review of the elements proposed here.

Emission Limits

Highway motorcycles

EPA is proposing new exhaust emission standards for highway motorcycles, which federal regulations currently define as “any motor vehicle with a headlight, taillight, and stoplight and having: two wheels, or three wheels and a curb mass less than or equal to 793 kilograms (1749 pounds)” (see 40 CFR 86.402-98). Generally any motorcycle or motorcycle-like vehicle that falls outside that definition would be considered a nonroad vehicle and would be subject to different requirements. The following table shows the proposed standards for highway motorcycles, including scooters and mopeds.

Proposed Highway Motorcycle Exhaust Emission Standards

Class	Engine Size (cc)	Implementation Date	HC (g/km)	HC+NOx (g/km)	CO (g/km)
Class I	less than 180	2006	1.0	–	12.0
Class II	180-279	2006	1.0	–	12.0
Class III	280 and above	2006	–	1.4	12.0
		2010	–	0.8	12.0

For Class III motorcycles, we expect these standards to be met by an increased use of technologies already demonstrated as being effective on 4-stroke motorcycle engines, such as secondary air injection, electronic fuel injection systems, and catalytic converters. The standards are not expected to result in the universal use of catalytic converters.

Gasoline-powered boats

EPA is proposing evaporative emission standards that would apply to all gasoline-fueled boats (e.g., yachts, sport boats, fishing boats, jet boats, and other types of pleasure craft, including personal watercraft and boats with outboard engines). We are proposing that these boats reduce evaporative hydrocarbon emissions by 80 percent. The proposed evaporative emission standard would apply to all boats (and fuel tanks) built in 2008 and later. Manufacturers could show that they meet this standard with a variety of emission-control technologies, including (but not limited to) nonpermeable fuel tanks and hoses, pressurized fuel tanks with pressure-relief valves, insulated tanks, bladder fuel tanks, and volume compensating air bladders.

Health and Environmental Benefits

This proposal covers important sources of mobile source air pollution. They currently account for about 12 percent of hydrocarbon (HC) emissions, 3 percent of CO emissions, and 0.3 percent of NO_x emissions from mobile sources. The highway motorcycle standards would reduce the combined emissions of HC and NO_x in the exhaust by 50 percent. The proposed marine standards are expected to reduce evaporative HC emissions by 80 percent. These standards will help avoid a range of adverse health effects associated with ambient ozone, CO, and PM levels, especially in terms of respiratory impairment and related illnesses.

EPA has not revised the motorcycle emission standards for over 20 years. There have been many vehicle emission control technology advances over the past two decades. Since EPA must now pursue emission standards for off-road motorcycles as the result of an order from the court, this is an appropriate time to review the highway motorcycle requirements.

In fact, motorcycles produce more harmful emissions per mile than a car or even a large sport utility vehicle (SUV). The current federal motorcycle standard for hydrocarbon emissions is about 90 times the hydrocarbon standard for today's passenger cars. Although many of today's motorcycles will actually meet the current California standards, the California hydrocarbon standard is still 18 to 24 times the current federal passenger car limits, depending on the displacement of the motorcycle engine.

Beginning in 2004, all passenger cars, light trucks, and SUVs will be required to meet even more stringent standards. When these standards

become effective, new SUVs will be meeting hydrocarbon standards about 95 percent cleaner than today's typical motorcycle.

Costs

We project average costs of \$26 per highway motorcycle to meet the 2006 standards and \$35 to meet the 2010 standards. Increased costs for marine vessels are estimated to be about \$36 per boat on average. This may be higher or lower, depending on the size of the boat and the approach the manufacturer uses to meet the standards. This increased cost for boats is partially offset by a discounted fuel savings of about \$27 due to keeping more gasoline in the fuel tank.

Public Participation Opportunities

EPA desires full public participation in arriving at rulemaking decisions. We welcome your comments on this proposed rule, especially specific suggestions for changes to any aspect of the proposal that you believe needs to be modified or improved. You may comment on the proposal by sending an E-mail to mcnprm@epa.gov.

We will hold public hearings on this proposal on September 17, 2002, in Ypsilanti, Michigan, for motorcycles, and October 7, 2002, in Ann Arbor, Michigan, for boats. For more information on the public hearings or for instructions on submitting written comments, please see the *Federal Register* notice. The *Federal Register* notice and related documents are available electronically on the Office of Transportation and Air Quality (OTAQ) Web site at www.epa.gov/otaq. These documents are also available from the EPA Air and Radiation Docket by calling 202-566-1742; please refer to Docket No. A-2000-02.

For More Information

For more information on this proposed rule, please visit the OTAQ Web site given above or contact us at:

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