



Regulatory Announcement

Frequently Asked Questions from Off-Highway Motorcycle Riders

The U.S. Environmental Protection Agency (EPA) has adopted emission standards for recreational vehicles, including snowmobiles, off-highway motorcycles and ATVs. This information sheet addresses questions we have heard from off-highway motorcycle owners.

Why is EPA adopting emission standards for off-highway motorcycles?

Off-highway motorcycles currently emit about 110,000 tons of hydrocarbons (HC), 160,000 tons of carbon monoxide (CO), and just under 1,000 tons of oxides of nitrogen (NO_x) across the United States each year. These emissions form smog and contain toxic compounds such as benzene, so reducing them would benefit our health and environment. In the Clean Air Act, Congress requires us to set emission standards that address these problems. These environmental impacts are described in more detail in the fact sheet referenced below.

Does my current off-highway motorcycle need to meet these regulations?

No. Off-highway motorcycle manufacturers must ensure that each **new** off-highway motorcycle sold meets the new emission standards. The new standards apply only to new off-highway motorcycles produced in 2006 or later. Anything manufactured before that model year would not be affected. We allow several years of lead time between publication of a

final rule and the effective date of new standards. New emission standards for off-highway motorcycles therefore won't affect the off-highway motorcycle you own now or any off-highway motorcycle you buy before 2006.

Is EPA regulating competition motorcycles?

The Clean Air Act excludes from emissions control programs vehicles used solely for competition. We recognize that organized off-highway motorcycle competition is popular around the country. Provisions in the final rule will allow manufacturers to make and sell competition motorcycles that do not meet emissions requirements, as long as these bikes are dedicated competition models and not for general use. Also, riders may modify off-highway motorcycles that are used solely for competition. In some cases manufacturers may choose to make competition models that are certified to meet emission standards; see the fact sheet referenced below for more information.

As an off-highway motorcycle owner, how does this affect me?

You may **not** disable any emission controls installed on your off-highway motorcycle. Manufacturers explain in their owner's manual what type of emission controls exist for each model. Manufacturers may also specify some minor maintenance that must be performed to keep emission controls working properly over the life of the off-highway motorcycle.

What kind of emission controls is EPA adopting?

We are adopting standards that manufacturers will meet on an average basis, which may encourage manufacturers to use a broader array of technologies across their product line. We don't tell manufacturers how to comply with the regulations, but we anticipate many manufacturers will choose to meet them by using four-stroke engines instead of two-stroke engines. Some manufacturers may also slightly change the air-fuel mixture. Others may decide to use a technology such as advanced fuel injection or secondary air injection on some models.

We are also adopting requirements to control permeation emissions from off-highway motorcycle fuel systems. We expect these requirements to

lead to the use of improved materials that reduce the permeation of fuel through fuel tanks and hoses and into the atmosphere. This should noticeably reduce the smell of gasoline from your off-highway motorcycle.

How much will these controls cost?

The costs for new emission controls depends on the technology used, manufacturing processes, the size of the manufacturer, and other issues. Many off-highway motorcycle models are already equipped with four-stroke engines and we estimate the cost for these models to be less than \$40. We estimate the cost to replace a two-stroke engine with a four-stroke engine is about \$200 to \$400 depending on engine size. But, with a four-stroke engine, these costs are somewhat offset by fuel savings, since a four-stroke engine uses about 25 percent less fuel and less oil than a two-stroke engine. The permeation requirements are expected to cost less than \$10 per vehicle, which is also offset by fuel savings.

How will these controls affect performance and safety?

We don't expect the controls to harm performance or safety. Manufacturers have improved off-highway motorcycle designs over the last few years, so four-stroke engines now perform as well as—and possibly better than—two-stroke engines. Also, manufacturers will have several years of lead-time to perfect designs. None of the emission controls manufacturers are expected to use affect safety.

How much pollution do off-highway motorcycles emit?

We estimated the amount of pollution coming from off-highway motorcycles based on testing of currently unregulated recreational vehicles. Because there are both two-stroke and four-stroke engines currently used in off-highway motorcycles and these engines have significantly different emission characteristics, we estimated separate baseline emission rates for each type of engine. Our estimates of baseline and future emission rates for off-highway motorcycles are shown in the following table.

Engine Category	Off-highway Motorcycle Emission Rates (grams per mile)*			
	HC	CO	NO _x	PM
Baseline two-stroke	53.9	54.1	0.2	2.1
Baseline four-stroke	2.4	48.5	0.4	0.1
Off-highway motorcycles meeting EPA standards	2.1	30.6	0.3	0.1

*Manufacturers meet standards based on emission rates in grams per kilometer; emission estimates are presented here in grams per mile for convenience in comparing with other programs.

Will these regulations affect where I can ride my off-highway motorcycle?

No. These regulations do not include any specific restrictions about where you can ride certified off-highway motorcycles (or models built before 2006). Some provisions apply to off-highway motorcycles that don't meet emission standards because they are dedicated competition models; see the fact sheet referenced below for more information about how we treat competition products.

Do these regulations apply in California?

California already has emission standards for off-highway motorcycles. Their program has been in place since 1997. Our regulations will not affect the California program, although California may decide to adopt our program in the future, especially since they do not have requirements for controlling permeation emissions.

Will EPA issue noise regulations?

We are not adopting any new noise regulations. Most off-highway motorcycle manufacturers design products that already meet EPA noise standards.

Where can I get more information?

You can access documents on recreational vehicles on the Office of Transportation and Air Quality Web site at:

www.epa.gov/otaq/recveh.htm

You can also contact us at:

U.S. Environmental Protection Agency
Office of Transportation and Air Quality
Assessment and Standards Division
2000 Traverwood Drive
Ann Arbor, MI 48105
Voice-mail: (734) 214-4636
E-mail: asdinfo@epa.gov

See additional fact sheets:

- Emission Standards for New Nonroad Engines— Large Industrial Spark-ignition Engines, Recreational Marine Diesel Engines, and Recreational Vehicles (EPA420-F-02-037)
- Environmental Impacts of Newly Regulated Nonroad Engines (EPA420-F-02-033)
- Frequently Asked Questions: Emission Exemption for Racing Motorcycles and Other Competition Vehicles (EPA420-F-02-045)
- How to Maintain or Rebuild Engines Certified to EPA Standards (EPA420-F-02-035)