

Reducing pollution from small engines

On March 26, 1998, the Air Resources Board (ARB) amended regulations to further control emissions from small off-road engines such as lawn, garden and other maintenance utility equipment. The rules will affect engines less than 25 horsepower.

The ARB first regulated these engines in December 1990, setting implementation dates of January 1995 for Tier I standards and January 1999 for Tier II standards. The amendment delays Tier II until January 2000 to provide sufficient time for manufacturers and distributors to comply.

Small engines can be big polluters

Many small-engine products continue to be powered by high-polluting, two-stroke engines. Tier I standards have already cut emissions from this equipment by 30-70 percent, but some of these engines still emit as much as 25 percent raw, unburned gasoline in their exhaust.

Although small engines comprise only about one percent of California's air pollution inventory, federal and state mandates for clean air by 2010 compel every source to reduce air pollution as much as is economically and technologically possible. This includes many products or processes that contribute less than one percent of the state's total emissions.

Tier II brings big reductions and added durability

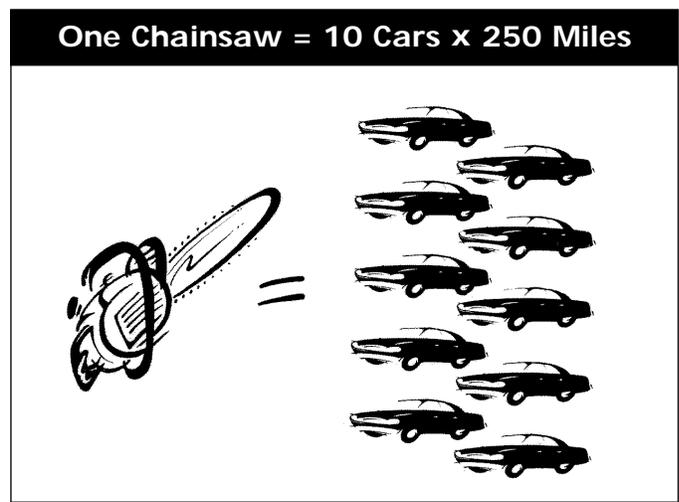
Tier II will significantly reduce smog-forming emissions from handheld equipment such as weed trimmers and chain saws. The regulations would cut total emissions of hydrocarbons (HC) and oxides of nitrogen (NOx) by 74 percent in 2010. For non-handheld equipment (mainly lawn mowers), the regulation calls for a 67 percent reduction in HC and NOx by 2010. None of these engines were subject to emission controls prior to 1995.

The new plan includes a provision that for the first time requires small engines to have "durability" in their emission control systems. Engine manufacturers must demonstrate that their equipment's emission levels remain low with requirements ranging from 50 hours for residential equipment up to 500 hours for commercial products.

By 2010, California's small engine regulations will reduce air pollutants by 20.5 tons a day more than required by U.S. Environmental Protection Agency's rules. This reduction is equivalent to eliminating air pollution from 275,000 automobiles. ARB staff have calculated that the cost to consumers of equipment that meets the Tier II standards will range from zero to about \$35 over comparable equipment today.

Some already meet the standard

Some engine manufacturers already produce and sell low-polluting, four-stroke engines that are small and light enough to work in handheld equipment. Other manufacturers are prepared to bring to market two-stroke engines that can meet the ARB's new Tier II emission standards.



Using a commercial chain saw—powered by a two-stroke engine—for two hours produces the same amount of smog-forming hydrocarbon emissions as driving ten 1995 cars about 250 miles each.

For more information

Please contact the Air Resources Board's Public Information Office at (916) 322-2990, or (800) 272-4572 toll-free (USA only).

You may obtain this document in an alternative format by contacting ARB's ADA Coordinator at at (916) 322-4505 (voice); (916) 324-9531 (TDD, Sacramento area only); or (800) 700-8326 (TDD, outside Sacramento).