

Small Off-Road Engine Regulations Frequently Asked Questions

CARB has been regulating emissions from small off-road engines for decades and last amended the regulations in 2021. These frequently asked questions on the Small Off-Road Engine (SORE) Regulations, which are required by state legislation and the 2016 State Implementation Plan, outline the details of the regulations, as well as their benefits.

When do the regulations go into effect?

U.S. EPA has granted CARB an [authorization](#) to waive federal preemption for its current SORE regulations. Because the 2025 model year is already underway, CARB will fully implement regulations beginning with the 2026 model year. CARB is developing a [Manufacturers Advisory Correspondence \(MAC\)](#) to explain to engine and equipment manufacturers how CARB will implement the regulations for the remainder of the 2025 model year.

The regulations apply to manufacturers, sellers, retailers, and distributors producing, distributing, and selling new spark-ignition engines less than or equal to 25 horsepower and require that they certify and label those engines. The regulations do not require current owners or end users to stop using their existing gas-powered tools. CARB will continue outreach and education about the SORE regulations throughout 2025.

Is CARB going to take away landscape professionals' gas equipment and make them replace it all with zero-emission equipment?

No. The regulations apply to manufacturers, sellers, retailers, and distributors producing, distributing, and selling new spark-ignition engines less than or equal to 25 horsepower and require that they certify and label those engines. The regulations do not require current owners or end users to stop using their existing gas-powered tools. Landscapers and other users can continue using their CARB-certified gas-powered equipment for its full useful life, subject to any additional rules adopted by local governments. No one is required to purchase zero-emission equipment, and users will be able to buy it gradually to replace existing equipment as it wears out.

What are the emissions benefits of the regulations?

Despite their small size, SORE are highly polluting. While passenger cars have moved to cleaner technology, small off-road equipment has not. SORE emissions in California have surpassed those of passenger cars and are projected to be twice as polluting as cars by 2031. Today, a commercial operator using one backpack leaf blower for one hour generates the same smog-forming emissions as a car driving 1,100 miles. The SORE regulations will reduce emissions of smog-forming emissions

by approximately 58,844 tons of oxides of nitrogen (NO_x) and 421,924 tons of reactive organic gases (ROG) through 2043. Cleaner technology for this sector will result in health benefits for Californians, especially for the individuals who use the equipment daily and the communities where they work.

What are the public health benefits of the regulation?

Users of SORE equipment, and the communities where SORE equipment is used, are exposed to harmful air contaminants such as carbon monoxide and particulate matter that embeds in lungs and bloodstreams. The regulations are projected to provide an \$8.8 billion public health benefit by avoiding nearly 900 premature deaths through 2043, as well as reducing hospitalizations and illness.

Is CARB providing financial assistance to landscape professionals to help them buy equipment?

The California Legislature provided \$30 million to help sole proprietors and small landscaping businesses, which account for 99% of the landscaping businesses in the state, purchase zero-emission equipment. This funding was distributed through the Clean Off-Road Equipment Voucher Incentive Project and offered exclusively to micro-landscape businesses (those with fewer than 25 employees) first before being opened to the larger group of eligible landscapers. Eligible equipment includes leaf blowers, lawn mowers, and string trimmers, among other popular equipment. An amount still remains to be given to eligible businesses to purchase equipment and/or batteries.

The Carl Moyer Program also provides funding incentives for commercial and residential zero-emission SORE equipment. CARB dedicated nearly \$25 million to the Moyer Program in 2022 for lawn and garden equipment projects. In addition to that special allocation in 2022, the program gives approximately \$130 million annually to the state's 35 air districts who award the funds according to their local priorities, which have included lawn and garden equipment.

How is CARB ensuring that landscape professionals know about the SORE regulation?

CARB has implemented an extensive multi-year, multi-language outreach campaign that focuses on reaching the Spanish-speaking, Latino and immigrant workforce that powers the state's landscaping businesses. CARB has run ads on the state's Spanish-language radio and television stations and across social media to provide information about the regulations, compliance dates, and on the assistance programs that are available.

Since 2021, CARB has also partnered with the American Green Zone Alliance (AGZA),

an organization that assists with the use of environmentally friendly landscaping equipment, to host roadshows where landscapers can test different brands and types of zero-emission landscape equipment before making purchasing decisions. AGZA also offers educational workshops alongside local air quality districts so that landscaping professionals can ask questions about the requirements and incentive programs that are available. In addition, CARB formed a landscaper workgroup to help stakeholders understand the regulations, and CARB offers information on the regulations in Spanish that can be easily accessed via smart phone for landscapers who are often outside and away from a computer.

Did CARB consider the cost to business owners when developing the regulations?

CARB does consider costs, and we found that while upfront purchasing costs can be higher, people who purchase the equipment have lower overall costs due to savings in fuel and maintenance. The operational cost savings are in addition to the reduced health care costs and avoided lost work days from fewer respiratory and other illnesses tied to pollution.

What feedback has CARB received about zero-emission SORE technology?

Zero-emission landscape equipment has improved considerably over the years. Manufacturers offer a full range of equipment that can match or beat a gas-powered equivalent in terms of power and functionality. Through surveys, commercial landscapers have indicated that zero-emission equipment has enough power to do the job. Users also prefer the quick starts that require the push of a button instead of “pulling the cord” multiple times, the reduced noise and vibration, and not smelling gasoline fumes. Zero-emission equipment also requires less maintenance than combustion-powered equipment.

Users also have flexibility in the capacity of batteries when making purchase decisions. Those who value longer runtime may choose to purchase higher-capacity batteries, including backpack batteries. Those who value lighter-weight equipment or prefer not to wear a backpack may choose to purchase lower-capacity batteries.

Besides the most common landscaping equipment like leaf blowers, what are examples of other SORE equipment included in the regulation?

- Chainsaws (< 45 cc)
- Edgers
- Hedge trimmers
- Lawn mowers
- Leaf blowers
- Log splitters

- Portable generators
- Pressure washers
- Riding mowers
- String trimmers

Why are portable generators included in the regulations?

In 2020, portable generators accounted for 14% of the total population of SORE equipment, and 19% of all NO_x and ROG emission from SORE, which makes them a significant emissions source that impacts air quality and public health. Portable generators provide important back-up power to many residents when the power supply is off due to wildfire and high winds, among other reasons. To account for this, CARB developed the regulations to phase in requirements for portable generators and allow more time for a wider variety of zero-emission alternatives to be commercially available and competitively priced in the marketplace. Larger portable generators and stationary generators are not included in the regulations and can still be used for larger back-up power needs. CARB continues to track and assess the progress towards zero-emission standards for portable generators.