

CALIFORNIA'S PROPOSAL TO BAN GAS AND LP RV GENERATORS



The California Air Resources Board (CARB), the regulator responsible for controlling emissions from small off-road engines (SORE), is proposing to ban generators installed on motorhomes and towable RVs, taking effect with the 2028 certification model year. At a virtual hearing this Thursday, December 9, the Board will vote to adopt the staff's [proposed ban](#). Absent significant pushback from the RV industry at the hearing, staff's proposal is certain to be adopted by the Board after it is reviewed and approved by the Office of Administrative Law (likely later in 2022).

What's being banned?

In their effort to address climate change, CARB is set to ban generators less than 25 HP powered by spark ignition (SI) engines (i.e., gasoline and LP engines) installed on RVs (both motorhomes and towable RVs). Diesel-fueled generators and stationary generators are exempt. CARB's actions stem from Governor Newsom's September 2020 Executive Order N-79-20, which specifically directs CARB to develop and propose strategies to achieve 100 percent zero-emission from off-road vehicles and equipment operations in the State by 2035. CARB believes that their ban will drive companies to develop zero emission solutions (i.e., solutions powered by batteries or fuel cells). The proposal would be a 100% ban with no gradual phase-out.

What are the implications for the RV industry?

A ban on gas and LP-powered engines means traditional gas/LP RV generators will no longer be available for purchase in California beginning in 2028. Customers would need to go outside the state to buy an RV equipped with a generator, potentially resulting in a significant loss of RV sales in California.

Will zero emission solutions exist in 2028?

It seems unlikely that affordable, zero emission (battery-powered) solutions will exist for most RVs by 2028. Many RVs consume a lot of electricity, and it is estimated that a battery twice the size of a Tesla battery, potentially costing \$20,000, would be needed to power an RV for just one day. Enlarge the system to handle a few days off the grid and the costs multiply. Traditional gas or LP generator currently cost \$5,000 or less. In addition, the battery-powered solutions are not currently feasible considering the space and weight implications of adding one to two thousand pounds of batteries. Smaller RVs can be electrified, but they would need to be recharged by the vehicle's gas or diesel engine, defeating the purpose of the ban.

RV Industry Association Member Talking Points for CARB Hearing

1) Background on RVs

- a. RVs include motorhomes and towable units, equipped with AC units, heating, cooking refrigeration, lights, and other pieces of equipment that use electricity
- b. The equipment onboard an RV (especially air condition and heating) is critical to sustaining life when the unit is operated in hot and cold environments
- c. Most of the time, RV operate like an electrified home (as it is plugged into grid power at the campground)
- d. When RVs are used in remote locations where grid power is not available, the air conditioner and other appliances get their electricity via a fixed-mount generator powered by a small off-road engines (SORE)
- e. On average, RVs are used only 20 days per year and generator-powered only a small fraction of this time
- f. RV generator emissions are a fraction of overall SORE emissions (0.0XX%)

2) CARB's Proposal to Amend the SORE Regulation

- a. Proposal exempts stationary generators, but for some reason does not include fixed-mount stationary RV generators in the group of exempt stationary generators. Instead, CARB is currently lumping them in with free-standing portable generators.
- b. RV generators have nothing in common with portable generators and everything in common with exempt stationary generators:

Generators Characteristic	Generator Type		
	Stationary	RV Fixed-Mount Stationary Generator	Portable Generator
Subject to ZEE SORE Requirement?		X	X
Not moved for equipment operation or storage?	X	X	
Not moveable by hand?	X	X	
Bolted to permanent surface?	X	X	
Rarely refueled?	X	X	
Routinely powering very large electrical loads (whole house; 4000 watts/hrs. or more)?	X	X	
Would the battery needed for powering the generator for just one day be twice the size of a Tesla battery and cost > \$20,000?	X	X	
Is the generator routinely required to run multiple days at a time without being refueled?	X	X	
Never tilted?	X	X	
Routinely powering air conditioning to prevent heatstroke?	X	X	
Routinely powering refrigerating units to keep food from spoiling?	X	X	
Annual hours of use are extremely low?	X	X	

- c. CARB’s proposal does not define the portable generators that are covered and has communicated via email that they consider portable generators to be “those moved by hand and not bolted to concrete pad or other permanent build surface.” RV generators clearly do not satisfy this definition.
- d. CARB’s proposal does not define stationary generators, which are exempt, referring to them only as generators “not moved for equipment operation or storage.” As RV generators are bolted to the RV, they cannot be moved for any reason (other than replacement or maintenance).
- e. Given the definitions in the proposed regulation (or lack thereof), the RV Industry Association considers fixed-mount stationary RV generators to be exempt from the SORE regulation until such time that the regulation is amended to indicate otherwise. We request CARB direct staff to modify the rule to clarify how it intends to regulate generators used in RVs.

3) RV Industry Association Position on Proposed ZEE Standards for Generators

- a. If CARB decides to treat fixed mount RV generators like portable generators, the RV Industry Association asks that the CARB Board direct staff to delay the effective date of the ZEE standards to 2035 for RV generators, still allowing CARB to satisfy Gov. Newsom’s EO goal.
- b. RVs are not weed trimmers or lawnmowers
 - i. The battery needed to power an RV for just one day would need to be twice the size of the battery in a Tesla Model S
 - ii. The battery needed to power the RV for more than a day would cost \$60,000 to \$100,000
 - iii. The batteries would add 1,000 to 2,000 lbs. to the vehicle, decreasing fuel economy
 - iv. The gas engine powering the motorhome would need to run for lengthy periods of time every few hours to recharge the batteries, worsening air quality, not improving it
- c. Battery solutions for RVs will only make sense when the entire vehicle is required to be electrified
 - i. Motorhomes would need to be completely redesigned to safely accommodate batteries, motors, inverters, engine deletion, etc.
 - ii. The Advanced Clean Trucks (ACT) rule does not mandate motorhome electrification. The rule will provide chassis manufacturers the flexibility to electrify vehicles with better use cases for electrification (e.g., school buses and delivery trucks that return nightly to a central facility where they can recharged off-peak)

Table A-1. ZEV Sales Percentage Schedule

Model Year	Class 2b-3 Group [±]	Class 4-8 Group	Class 7-8 Tractors Group
2024	3% <u>5%</u>	7% <u>9%</u>	3% <u>5%</u>
2025	5% <u>7%</u>	9% <u>11%</u>	5% <u>7%</u>
2026	7% <u>10%</u>	11% <u>13%</u>	7% <u>10%</u>
2027	9% <u>15%</u>	13% <u>20%</u>	9% <u>15%</u>
2028	11% <u>20%</u>	24% <u>30%</u>	11% <u>20%</u>
2029	13% <u>25%</u>	37% <u>40%</u>	13% <u>25%</u>
2030 and beyond	15% <u>30%</u>	50%	15% <u>30%</u>
2031	<u>35%</u>	55%	<u>35%</u>
2032	<u>40%</u>	60%	<u>40%</u>
2033	<u>45%</u>	65%	<u>40%</u>
2034	<u>50%</u>	70%	<u>40%</u>
2035 and beyond	55%	75%	40%

4) CARB Failed to Address our Concerns in Issuing the Proposed Regulation

- a. The RV Industry Association has participated in the rulemaking since its inception
 - i. August 2020: Filed detailed written comments with CARB
 - ii. May 2021: Met with CARB staff
 - iii. Nov. 17, 2021: Met with CARB staff
 - iv. Nov. 29, 2021: Filed written comment
- b. Not one rulemaking document issued by CARB staff in October acknowledged our concerns
- c. CARB staff did not conduct a cost effectiveness study for RV generators, instead conducting a study for portable generators which have nothing in common with RV generators (see previous table)
- d. CARB staff have indicated that revisions to the proposal can now only be made at the direction of the Board

5) Potential That California RV Dealers Will Go Out of Business

- a. If CARB bans SORE-powered RV generators in 2028, California residents are likely to go across the state line to purchase RVs equipped with SORE-powered generators in neighboring states. Nothing in the law prevents this.
- b. This will result in a huge loss of sales in CA, so large that many CA RV dealers will go out of business. Dealers outside CA will be the only beneficiaries of this ban. Already today, one of the top-selling RV dealers of motorhomes to CA residents is located in Las Vegas, Nevada.
- c. Air quality will be no better, or likely even worse, as a result of the ban, yet many RV dealers in CA will be out of business and tax dollars from the lost sales and staff wages will go to bordering states.

6) The RV Industry Association Requests the Board Direct Staff to Modify the Proposed Regulation to Either:

- a. Confirm that RV fixed-mount generators will be deemed “stationary” and thus exempt, or
- b. The ZEE standards will not be applicable to RV generators until 2035