

Benefits of adopting California Advanced Clean Cars II regulations under Clean Air Act Section 177

Passenger cars and trucks emit climate-warming greenhouse gases (GHGs) as well as air pollutants that are harmful to human health. To improve air quality and mitigate global warming, governments across the United States have announced electrification goals and are implementing policies to accelerate the transition to zero-emissions. In August 2022, California adopted the Advanced Clean Cars II regulations to rapidly reduce light-duty vehicle emissions starting with model year 2026 vehicles. California's Advanced Clean Cars II (ACC II) regulation implements increasingly stringent standards for combustion vehicles while also requiring an increasing number of new light-duty vehicle sales to be zero-emission. Specifically, the regulation requires a shift to at least 68% of new light-duty zero-emission vehicles by 2030 and 100% by 2035.

Section 177 of the Clean Air Act allows other pollution-burdened states to adopt California's emission standards for new motor vehicles. More than a dozen states have adopted California's low-emission vehicle (LEV) or zero-emission vehicle (ZEV) standards under Section 177.¹ The regulatory processes in each of these states require or would benefit from an extensive analysis of the environmental and public health impacts of increasingly stringent ZEV sales and tailpipe pollutant requirements over time.

Adopting the ACC II regulation would dramatically reduce GHG and air pollution emissions. Modeling by Sonoma Technology, Inc. (STI) quantified the emissions reductions for sixteen states: Colorado, Connecticut, Delaware, Maine, Maryland, Massachusetts, Minnesota, New Jersey, New Mexico, New York, Nevada, Oregon, Rhode Island, Vermont, Virginia, and Washington. Together with California, these states account for 37% of the 2022 U.S. light-duty vehicle market and are home to 38% of the U.S. population.²

1 California Air Resources Board, "States that have Adopted California's Vehicle Standards under Section 177 of the Federal Clean Air Act," (2023), <https://ww2.arb.ca.gov/resources/documents/states-have-adopted-californias-vehicle-standards-under-section-177-federal>

2 Light-duty sales data are from the Alliance for Automotive Innovation, "Electric vehicle sales dashboard," (2023), <https://www.autosinnovate.org/resources/electric-vehicle-sales-dashboard> and population data are from the United States Census Bureau, "State population totals and components of change: 2020-2022," (2023), <https://www.census.gov/data/tables/time-series/demo/popest/2020s-state-total.html>

Table 1 summarizes the cumulative emission benefits of adopting ACC II starting in model year 2026 or 2027 compared to a business-as-usual scenario based on U.S. Environmental Protection Agency projections of the Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards.³ The table shows expected cumulative reductions from 2026 to 2030 and 2026 to 2040 of key air pollutants—nitrous oxides (NO_x) and fine particulate matter (PM_{2.5}), measured as reductions in tailpipe emissions—as well as carbon dioxide equivalent, measured along the whole well-to-wheel lifecycle (WTW CO_{2e}).

Table 1. Cumulative emissions reduction potential of adopting California's ACC II regulation

State	Implementation year	2026-2030			2026-2040		
		NO _x (U.S. tons)	PM _{2.5} (U.S. tons)	WTW CO _{2e} (mmt) ^{2e}	NO _x (U.S. tons)	PM _{2.5} (U.S. tons)	WTW CO _{2e} (mmt) ^{2e}
Colorado	2027	1,794	87	8.9	18,903	1,161	113.8
Connecticut	2027	460	31	3.6	4,341	342	39.5
Delaware	2027	123	8	1.2	1,169	85	11.9
Maine	2027	236	16	1.8	2,274	160	19.0
Maryland	2027	668	52	7.1	5,978	585	76.7
Massachusetts	2026	885	74	8.7	8,551	770	94.3
Minnesota	2027	1,843	82	8.0	18,114	1,075	87.0
New Jersey	2027	881	59	8.2	8,886	649	94.2
New Mexico	2027	890	34	3.7	6,708	359	39.2
New York	2026	1,675	132	16.9	15,231	1,373	189.5
Nevada	2027	582	33	3.3	4,328	350	29.7
Oregon	2026	1,260	40	4.3	9,360	408	51.0
Rhode Island	2027	114	7	0.9	1,134	78	10.4
Vermont	2026	74	7	0.9	811	72	9.6
Virginia	2026	2,299	102	12.7	17,511	1,111	139.2
Washington	2026	1,407	61	6.9	12,332	642	77.3

Notes: NO_x and PM_{2.5} are expressed in U.S. tons, CO_{2e} is expressed in million metric tons (mmt).

³ United States Environmental Protection Agency, "Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026," (2023), <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-revise-existing-national-ghg-emissions>

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Supporting files and detailed estimates of emissions reduction and associated health benefits are available, by state, year, and pollutant are posted at <https://theicct.org/benefits-ca-advanced-clean-cars-ii-reg-data/>.

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