

The People's Roadmap: For Achieving Environmental and Climate Justice in California

AB 32 Environmental Justice Advisory Committee



Real-Zero Alternative

Overarching goal: Incorporate all relevant information pertaining to decarbonization options, including life-cycle greenhouse gas (GHG) impacts and non-GHG pollutants; align assumptions with statewide goals

Carbon Neutral by 2045

80%–92% GHG reductions by 2045*

Transportation

Overarching modeling asks: 1) Align transportation targets with CARB’s 2020 Mobile Source Strategy (determine the zero-emission vehicle (ZEV) trajectory required to achieve health-based air standards); 2) Include full GHG impacts of fuel cell electric vehicles (FCEVs), including risk of hydrogen leaks; 3) Incorporate the grid flexibility offered by battery electric vehicles (BEVs) and the additional electricity demand created by FCEVs for production of hydrogen; 4) Limit hydrogen to green electrolytic hydrogen and exclude blue hydrogen.

VMT	VMT per capita reduced 25% below 2019 levels by 2030, and 30% below 2019 levels by 2035
LDV ZEVs	100% of light-duty vehicle (LDV) sales are ZEV by 2035, and at least 75% LDV sales are ZEV by 2030
Truck Heavy-Duty ZEVs	100% of medium-duty and heavy-duty vehicle (MD/HDV) sales are ZEV by 2035; Limit HFCVs to 15% of M/HD vehicles; 100% of all transit buses are ZEV by 2030
Port Operations	100% of drayage trucks are zero emission by 2030; 100% of cargo handling equipment is zero-emission by 2030
Vehicle Early Retirements	HDV: ~131,000 13 to 18-year-old trucks

Fossil Fuels

Overarching modeling asks: 1) Eliminate refinery CCS; 2) For CCS in other sectors, include GHG emissions associated with powering CCS, as well as associated non-GHG pollutants

Oil & Gas Extraction	Phase out operations by 2035
Petroleum Refining	Develop a refinery transition plan by 2024 for a phase out of production by 2045
Petroleum Refining Remaining	2035: Proportional based on planning 2045: 0%
Total CCS Needs (Industrial & Refining)	2035: <1 million metric tons (MMT) 2045: <1 MMT

*The majority of our recommendations are based on the most ambitious scenario in E3’s 2020 report, Achieving Carbon Neutrality in California, which if implemented would result in 80%–92% statewide GHG emissions reduction from 1990 levels by 2045. We note below policy measures that were recommended in that report.

Electricity

Overarching modeling asks: 1) Include the full GHG footprint of hydrogen; 2) Include the full GHG footprint of gas emissions (accounting for methane leaks upstream); 3) Include non-GHG pollutants, especially those associated with starts and stops (cycling) of fossil generators; 4) Clarify regional (WECC-wide) assumptions underpinning the electricity modeling in the RESOLVE model, including but not limited to export assumptions.

Electricity Generation	GHG target of 0 MMT carbon dioxide equivalent (CO ₂ e) in 2035; Total load coverage; Renewable Portfolio Standard (RPS)-eligible and zero-carbon resource generation, and no new gas build or expansion. Instead, scale up peak-shaving measures; No carbon dioxide removal (CDR)/CCS in the electric sector
Annual Build Rates	Solar: 6 gigawatts (GW) Wind: 1.5 GW Battery: 4 GW

Building Decarb

Existing Residential Buildings	100% of appliance sales are electric by 2030; Establish and fully fund programs for no or little upfront cost retrofits (weatherization, efficiency, conservation, demand management / load shifting, efficient electric appliances) for low-income communities by 2025; Retrofit 50% of all existing residential buildings (replace gas-fired space heating, A/C and water heaters with efficient electric heat pump appliances) by 2035; 100% of existing residential buildings retrofitted by 2045; All gas end uses retired by 2045
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Industry and Agriculture

Low Carbon Fuels for Buildings & Industry	No renewable natural gas (RNG) use and no hydrogen blending for use in buildings
Non-Combustion Methane Emissions	Directly regulate and enforce necessary decreases in livestock methane emissions to achieve the 40% reduction target set forth in SB 1383; Accelerate alternative, sustainable farming models that will also help sustain farm production, starting 2024; Remove incentives for dairy biogas; Discontinue the dairy digester program and retire dairy digesters by 2030 at the latest; Redirect millions of dollars in funding to further develop regenerative agroecological programs; Significantly reduce the density of California’s dairy herd; this is necessary to support manure management techniques that do not incentivize methane production; Limit alternative manure management projects to only those that reduce methane production at the source.

Overarching modeling asks: 1) Include energy requirements associated with CDR and associated emissions; 2) Clarify expected emissions released in the event of leaks.

Residual Carbon Emissions Current global DAC 0.01MT/year	2035: 0 MMT 2045: X for residual MMT The most ambitious pathway in E3’s Achieving Carbon Neutrality in California report estimated a remainder of 33 MMT CO ₂ e by 2045, representing a 92% reduction in gross emissions relative to 1990 levels.
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