

Biofuels – An Alternative Option for California’s Energy Future

California is a leader in climate policy and for years has advanced legislation to improve air quality across the state. While we applaud the strides lawmakers have taken toward emissions-free vehicles, we must also recognize the reality that the full benefits of these efforts may be decades away. Families in underserved and lower-income communities are often least able to afford new electric vehicles and will continue to rely on pre-owned, gas-powered vehicles.

The urgency of this issue requires that we support **immediate, affordable alternatives**. Biofuels offer a strong solution.

Biofuels are an alternative to fossil fuels for our cars and trucks that are derived from plants and, when used in place of fossil fuels, **can dramatically reduce greenhouse gases and other toxic emissions**.

There are different types of biofuels that originate from various sources.

- **Ethanol** is a biofuel made from plant-based starches and sugars. It is blended with gasoline [to increase octane](#) and reduce carbon monoxide and other toxic emissions that cause smog. Ethanol can be blended with gasoline in different ratios, typically referred to by the percent of ethanol in the blend. For instance, a common blend is 10% ethanol and 90% gasoline, referred to as E10, which is sold at most gas stations across the country. Other common blends include E15, which can be used in all light-duty vehicles made since 2001, and [E85](#), which is used in flexible fuel vehicles.
- **Biodiesel** is another type of liquid biofuel and is derived from vegetable oils and animal fats. Similar to ethanol biofuels, biodiesel can be blended with petroleum-based diesel fuels. The most common biodiesel blend is B20, or 20% biodiesel and 80% petroleum diesel. Higher blends are also available.
- **Renewable hydrocarbon fuels** like renewable diesel are simply “biomass-based hydrocarbon fuels” that are [nearly identical](#) to traditional fuels but derived from non-petroleum sources like used restaurant grease.

Biofuels are a valuable energy source because, “[unlike other renewable energy sources, biomass can be converted directly into liquid fuels.](#)” **By displacing petroleum in our fuels, we can reduce greenhouse gas emissions and the toxic chemicals emitted into the air we breathe**, including particulate matter, carbon monoxide, and more.

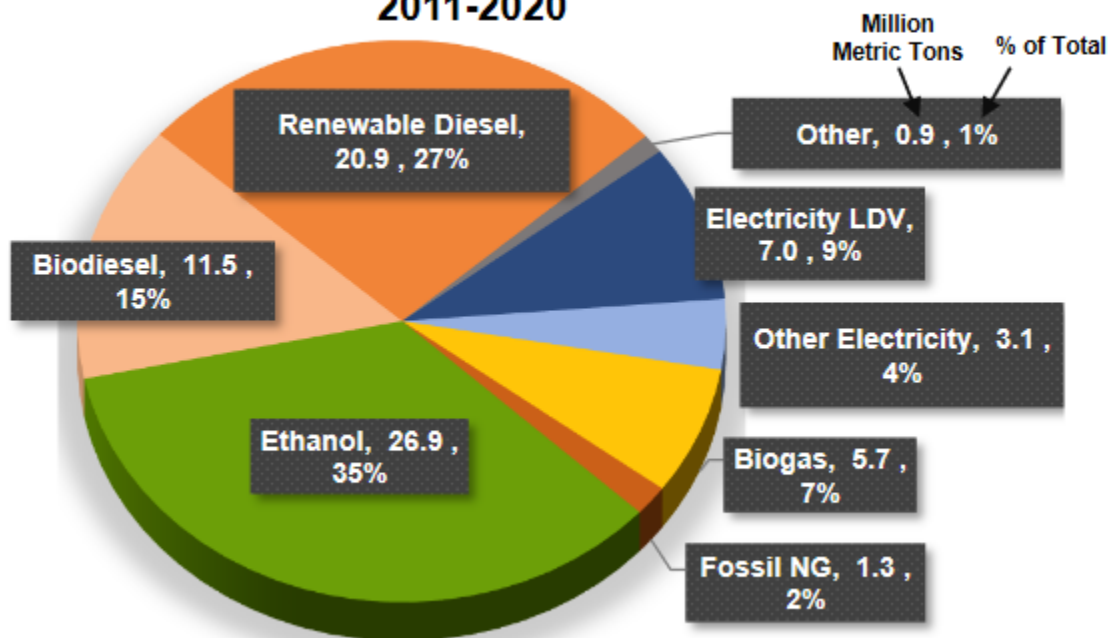
As California moves closer to a zero-emissions future, millions of drivers may still be depending on fossil fuels. Biofuels are compatible with current internal combustion

engines and can displace a far greater share of the petroleum that would otherwise be consumed by drivers unable to purchase electric vehicles or take advantage of alternative transportation options.

Implemented in 2011, the California Air Resources Board’s Low Carbon Fuel Standard (LCFS) was “designed to decrease the carbon intensity of California’s transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits”.

- [To date](#), biofuels are responsible for **77%** of the total greenhouse gas reduction occurring under the LCFS program.
- Between 2011-2020, the use of ethanol alone resulted in **26.9 million metric tons** of CO2 reduction.

California LCFS GHG Reductions by Fuel Type, 2011-2020



By continuing to make the switch and using more biofuels in place of gasoline, we can reduce pollution, clean our air, and help make California healthier for all communities.