

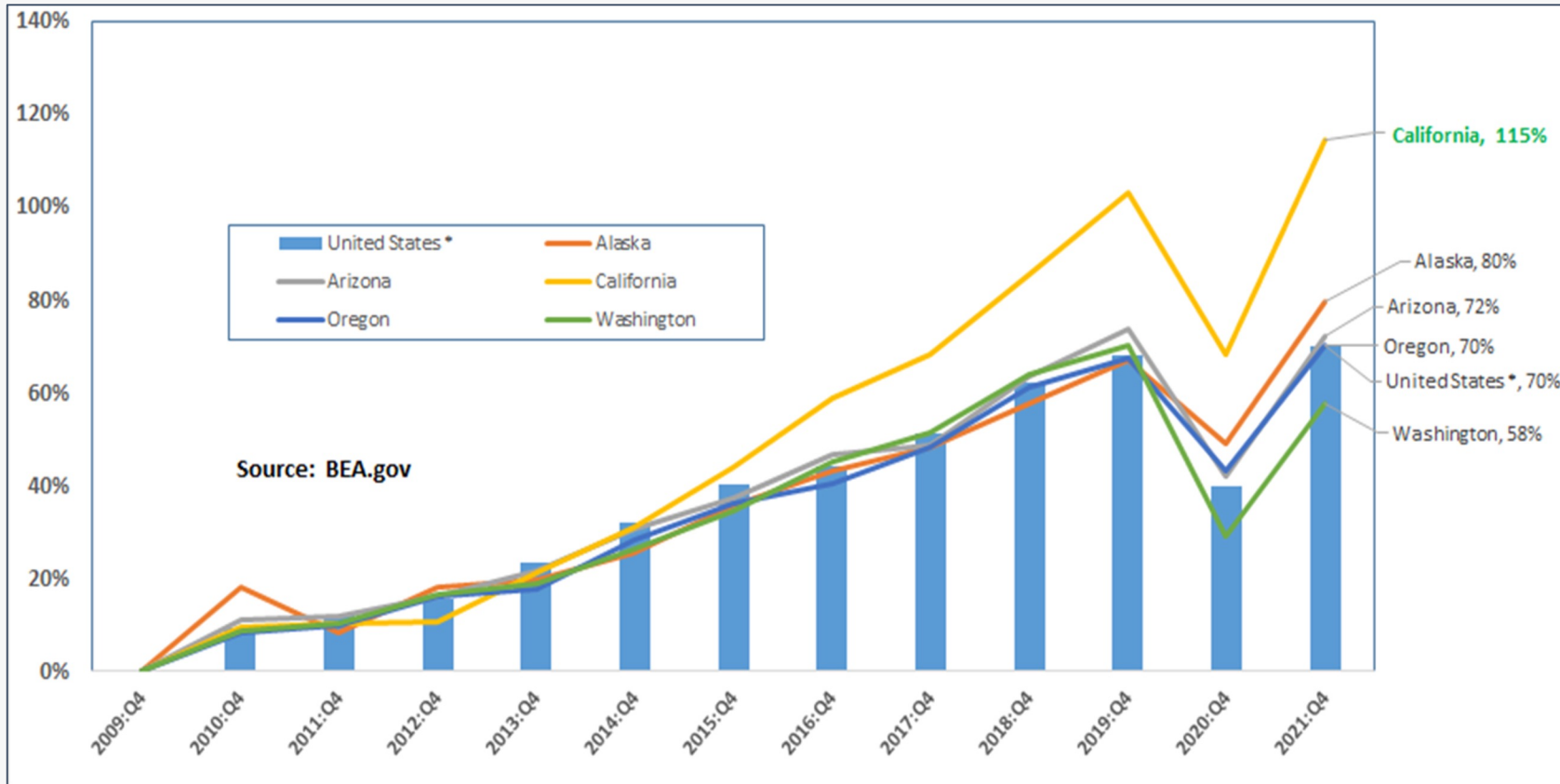


**Clean Fuels Program in California is achieving quantifiable climate and economic benefits. Washington should expect the same outcomes.**



# Economic Growth – *CA GDP vs Peers*

## GDP Growth in Transport Sector *USA TTL & Select western states*

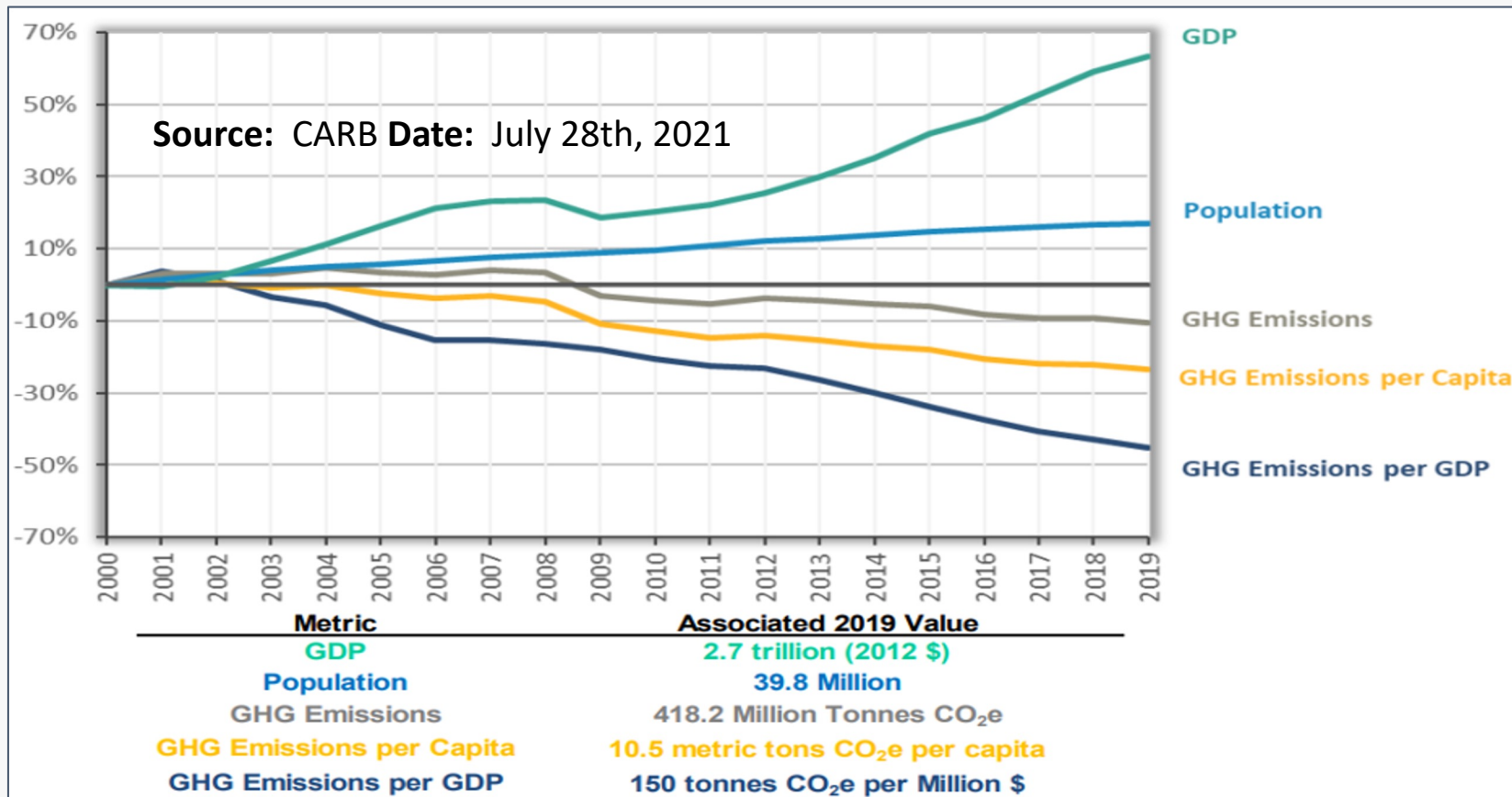


- CA transportation sector grew by 115% over the last dozen years
- Much stronger than US average & peer states right thru COVID19



# CA Economic and GHG per Capita

## Change in California GDP, Population, and GHG Emissions Since 2000



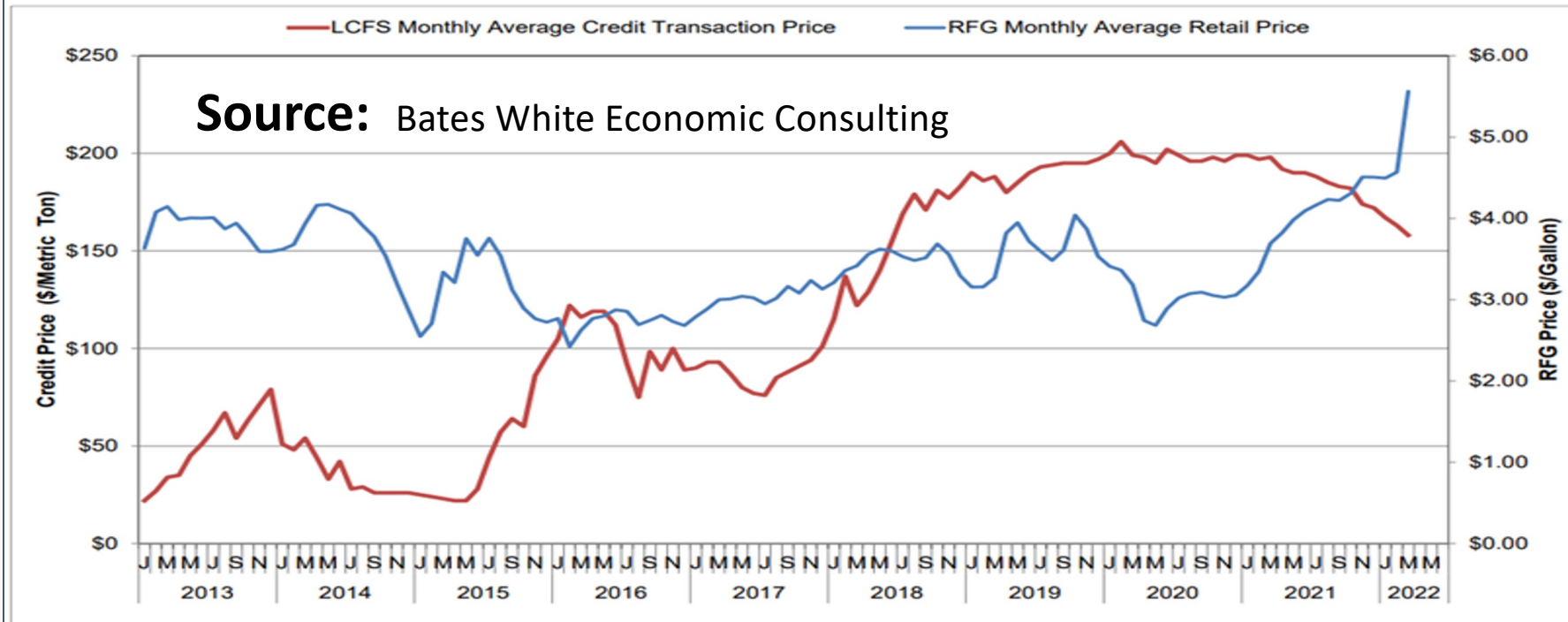
- CA per capita and by unit of GDP saw lower GHG emissions during a period of very strong economic progress



# CA. LCFS Credit Price vs. Retail Gas Prices

Comparison from 2013 - 2022

Figure 1: LCFS Credit Price and Retail Gasoline Price<sup>1</sup>

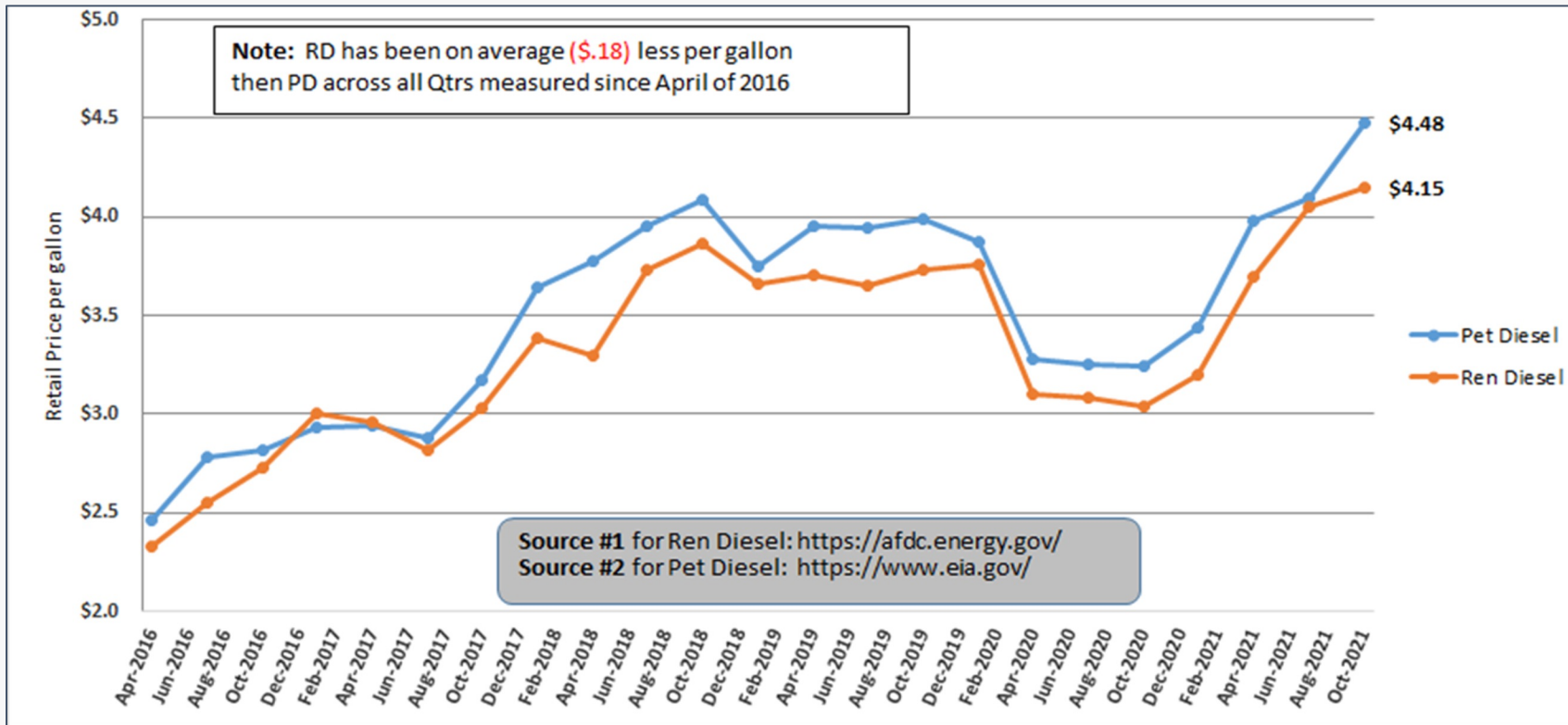


- 2022 spikes in crude oil demonstrate that retail gasoline costs remain primarily a function of crude prices set by global markets
- And not the LCFS or the price of credits



# Pricing Comparison (RD vs PD)

## California Retail Diesel Price Comparison *Qtrly from Apr 2016 - Oct 2021*



- Renewable fuel choices have expanded in from 2 to 8 since the implementation of the standard
- Consumer choice = competition = benefits to consumers



# C02 Emissions Comparison

## C02 Emissions from Fossil Fuels in MMT

Transport Sector: USA TTL & Select western states

### Transportation Emissions by State (2010 - 2019)

million metric tons of carbon dioxide

| State      | 2010    | 2011    | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    | 2018    | 2019    | Change |
|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Arizona    | 35.3    | 35.1    | 34.4    | 34.8    | 35.1    | 35.7    | 36.6    | 36.9    | 37.6    | 38.7    | 9.4%   |
| California | 201.0   | 193.4   | 189.6   | 189.0   | 189.9   | 194.8   | 202.3   | 208.0   | 209.1   | 208.9   | 3.9%   |
| Hawaii     | 11.1    | 11.4    | 11.4    | 11.7    | 11.1    | 11.4    | 11.5    | 12.0    | 12.2    | 12.3    | 10.4%  |
| Idaho      | 9.5     | 9.1     | 9.1     | 9.4     | 9.6     | 10.5    | 10.8    | 11.0    | 11.2    | 11.5    | 21.3%  |
| Oregon     | 22.0    | 21.0    | 20.7    | 20.8    | 20.9    | 20.4    | 20.5    | 21.0    | 21.6    | 21.3    | -3.4%  |
| Washington | 38.6    | 39.7    | 39.8    | 40.5    | 39.5    | 42.0    | 47.2    | 45.4    | 45.2    | 46.6    | 20.8%  |
| USA Total  | 1,845.8 | 1,816.9 | 1,780.4 | 1,807.3 | 1,825.3 | 1,850.2 | 1,888.4 | 1,904.3 | 1,934.2 | 1,939.5 | 5.1%   |

Source: U.S. Energy

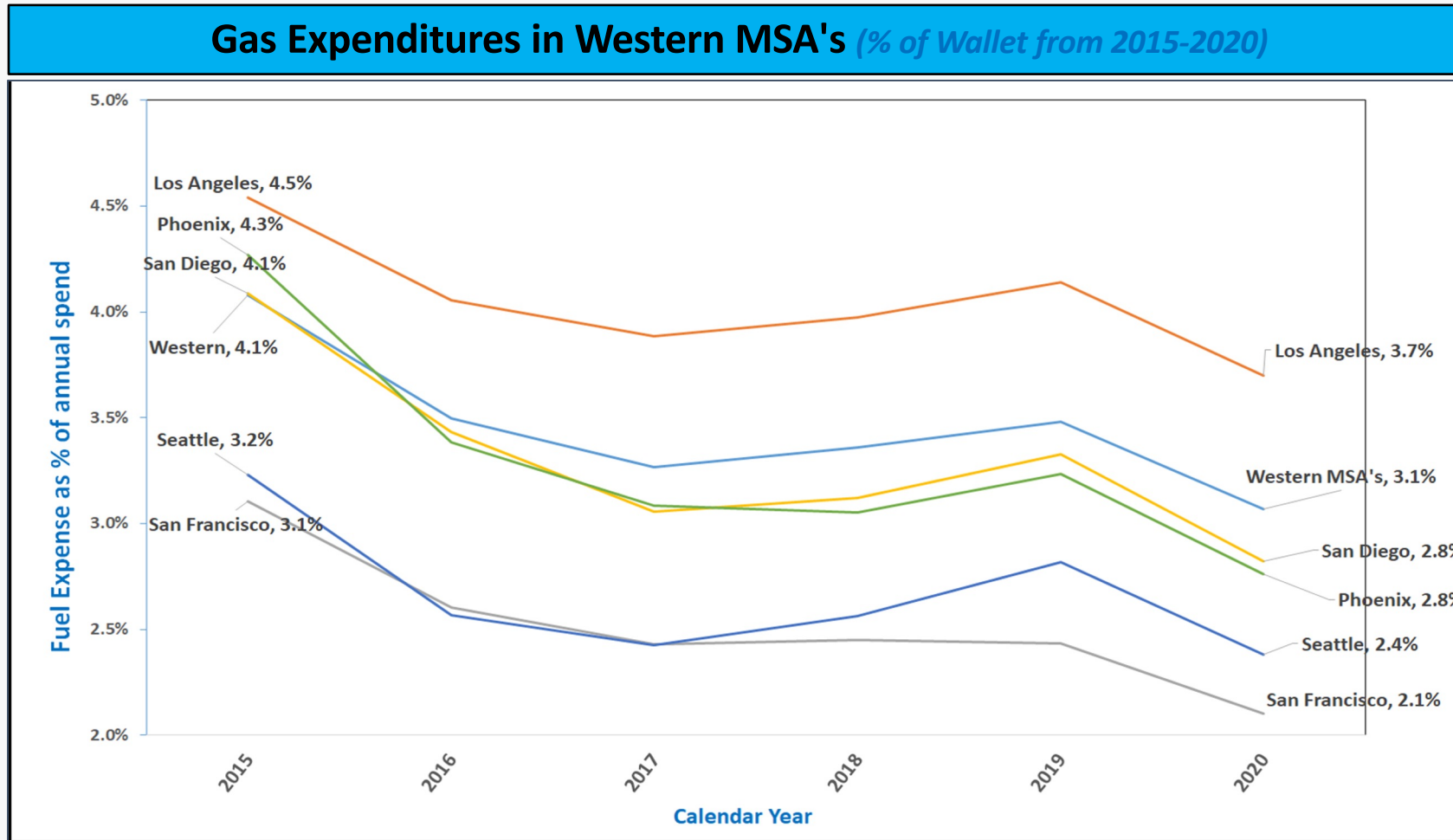
<sup>1</sup>For the United States as a whole see, EIA, *Monthly Energy Review*, Section 11: Environment. Differing methodologies between the two data series cause the total for all states to be different from the national-level estimate.

- CA transportation emissions were **capped at 3.9%** during a period of hyper economic growth. WA emissions grew **20.8%** over the same period without an clean fuels policy





# CA spend on transportation fuel declining

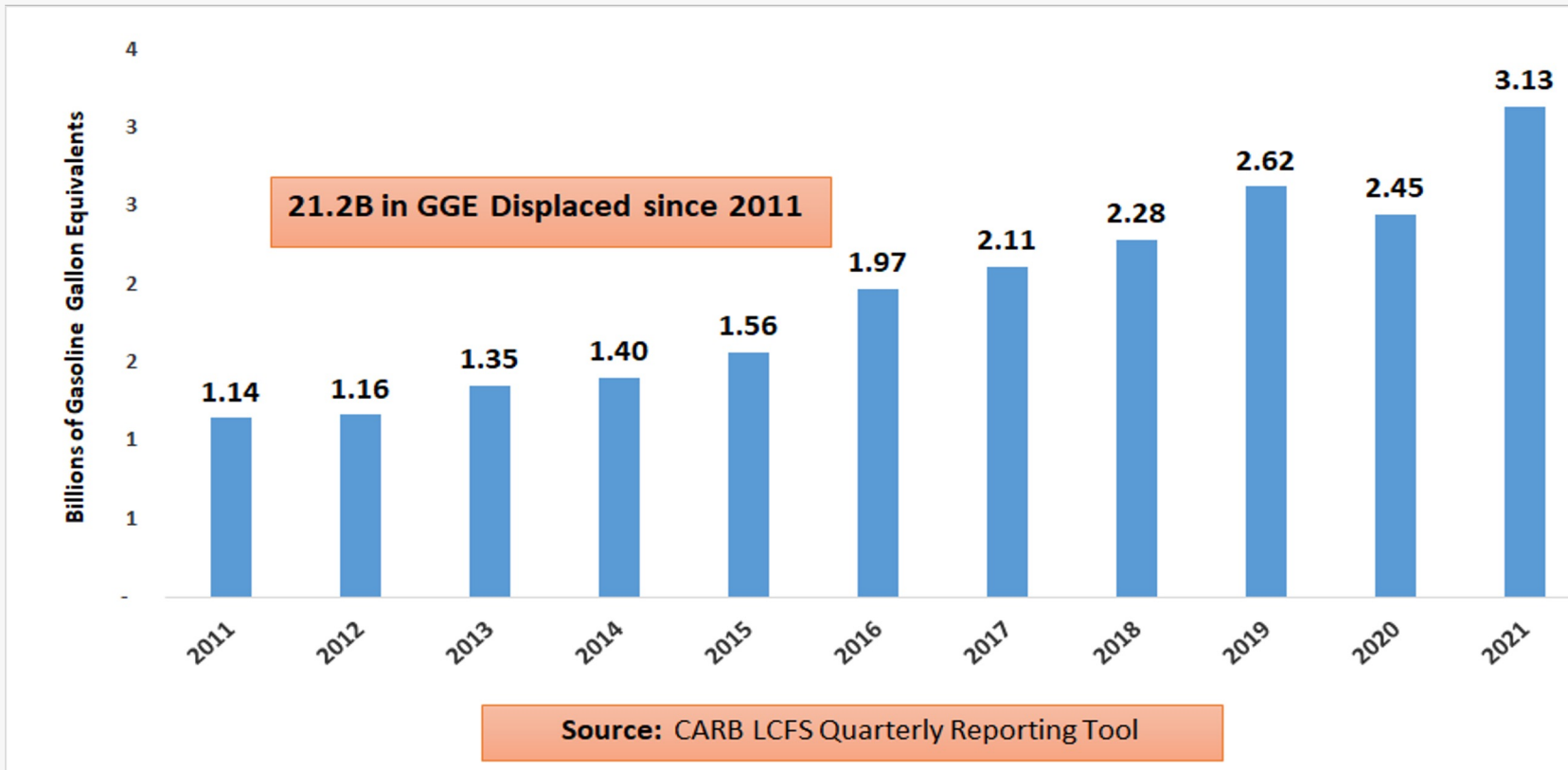


- California's biggest MSA's (LA, San Fran, SD) all spent less on fuel as a % of their annual expenditures and are inline with regional peer markets across the west. All during the most aggressive CI targets of the LCFS



# Petroleum Fuel displaced in CA

Petroleum Fuel Displaced in CA – *In Billions from 2011-21*

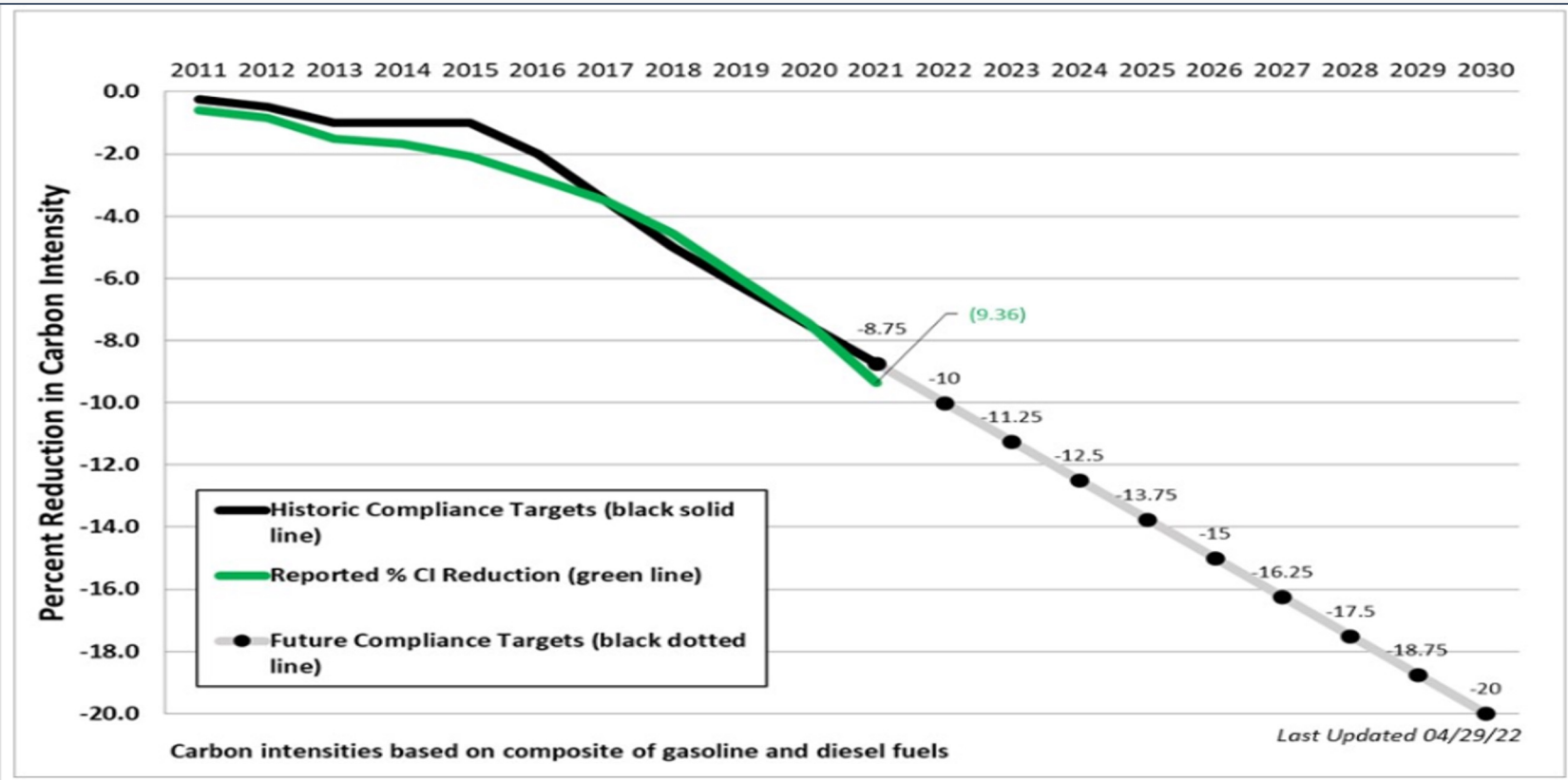






# CI of conventional fuel is declining

## CARB Data Dashboard: 2011 thru 2021 LCFS Performance for lowering CI

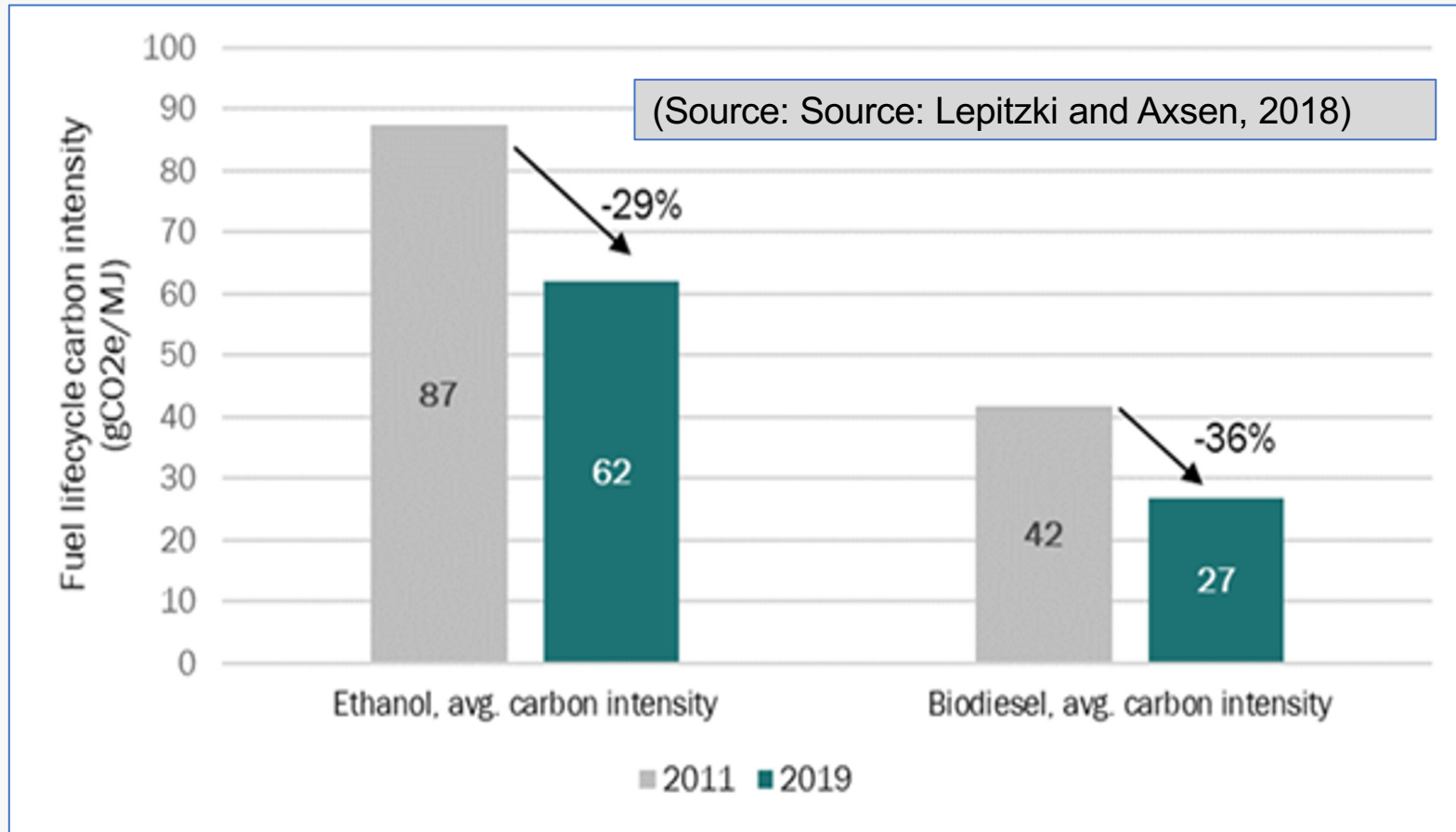


- The above chart shows historical results for lowering carbon intensity in California's transportation fuel pool.
- The target is to reach a 20% CI reduction by 2030 and currently the program is on track to achieve that.



# Lifecycle CI for fuels pushed lower

## Change in Lifecycle CI for Ethanol & Biodiesel for LCFS

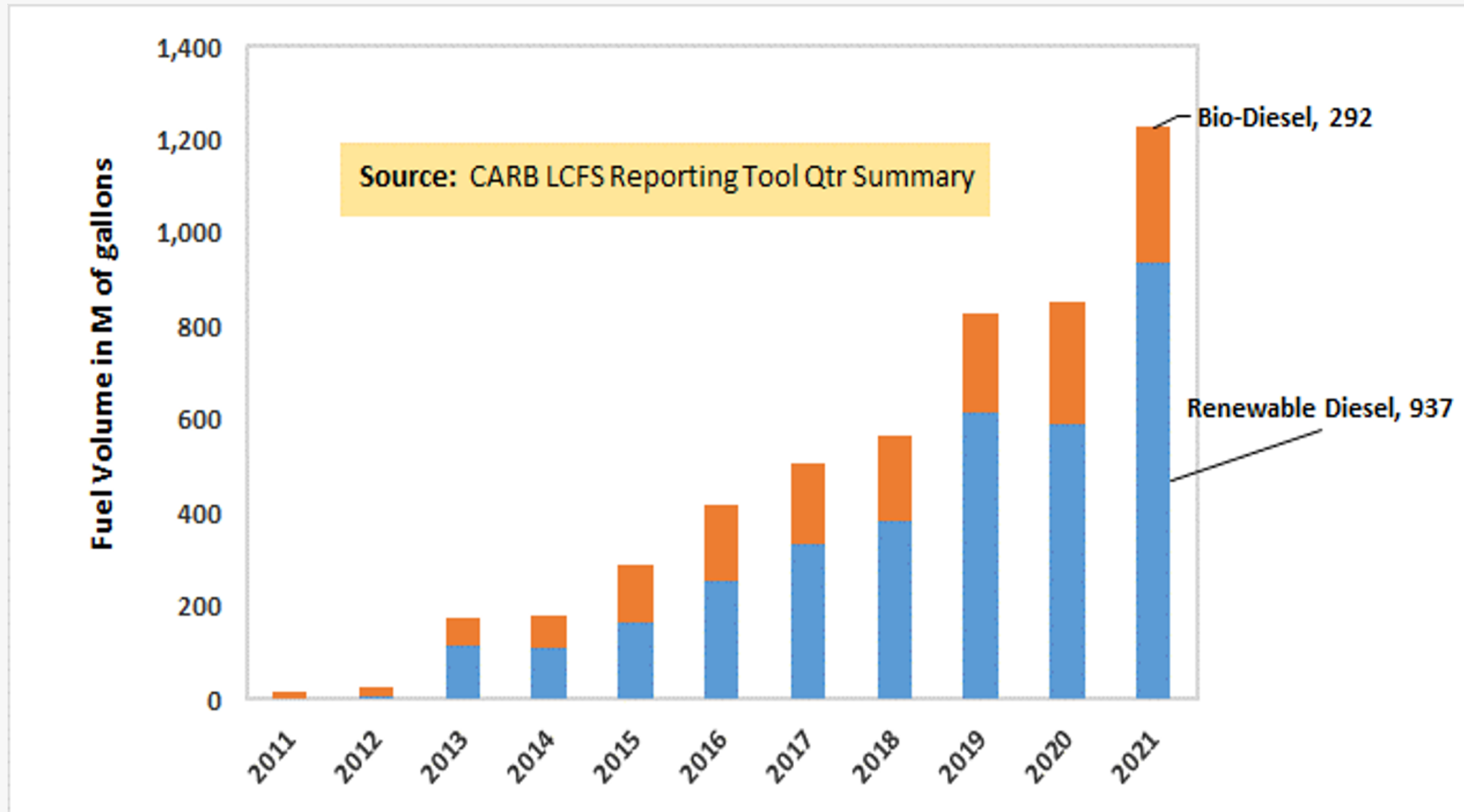


- California LCFS provides incentives for renewable fuels to become even cleaner over time.



# Volume of Alternative Diesel Fuels

Volume of Alternative Diesel Fuel *Gallons of RD & BD from 2011 – 2021*

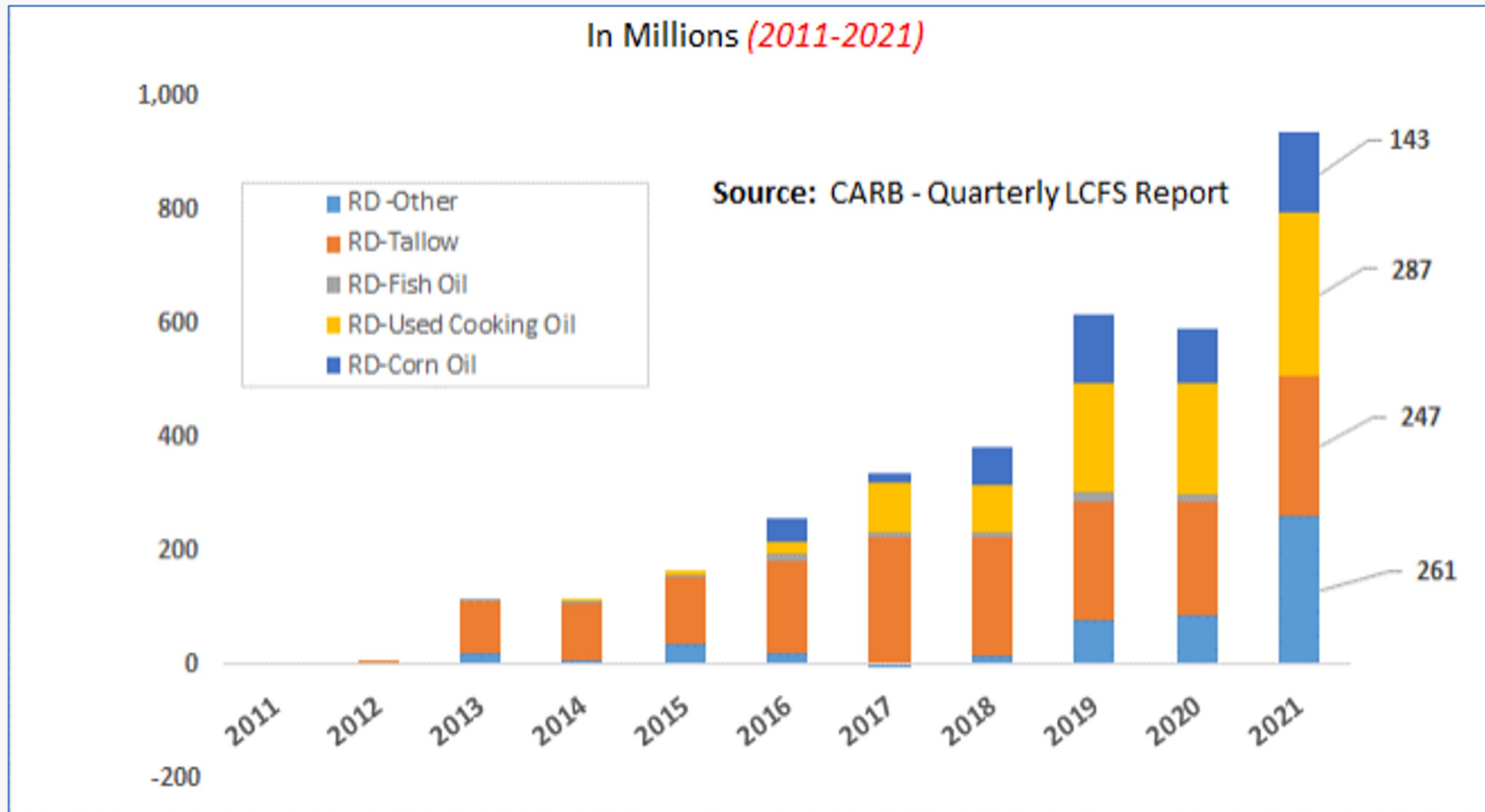


- Renewable Diesel and Biodiesel volumes over **1.2B** gallons in 2021!



# Renewable Diesel Feedstocks

## CARB Feedstock Volumes for Renewable Diesel



- A growing supply of low CI feedstocks accelerate growth for RD.



# For More Information



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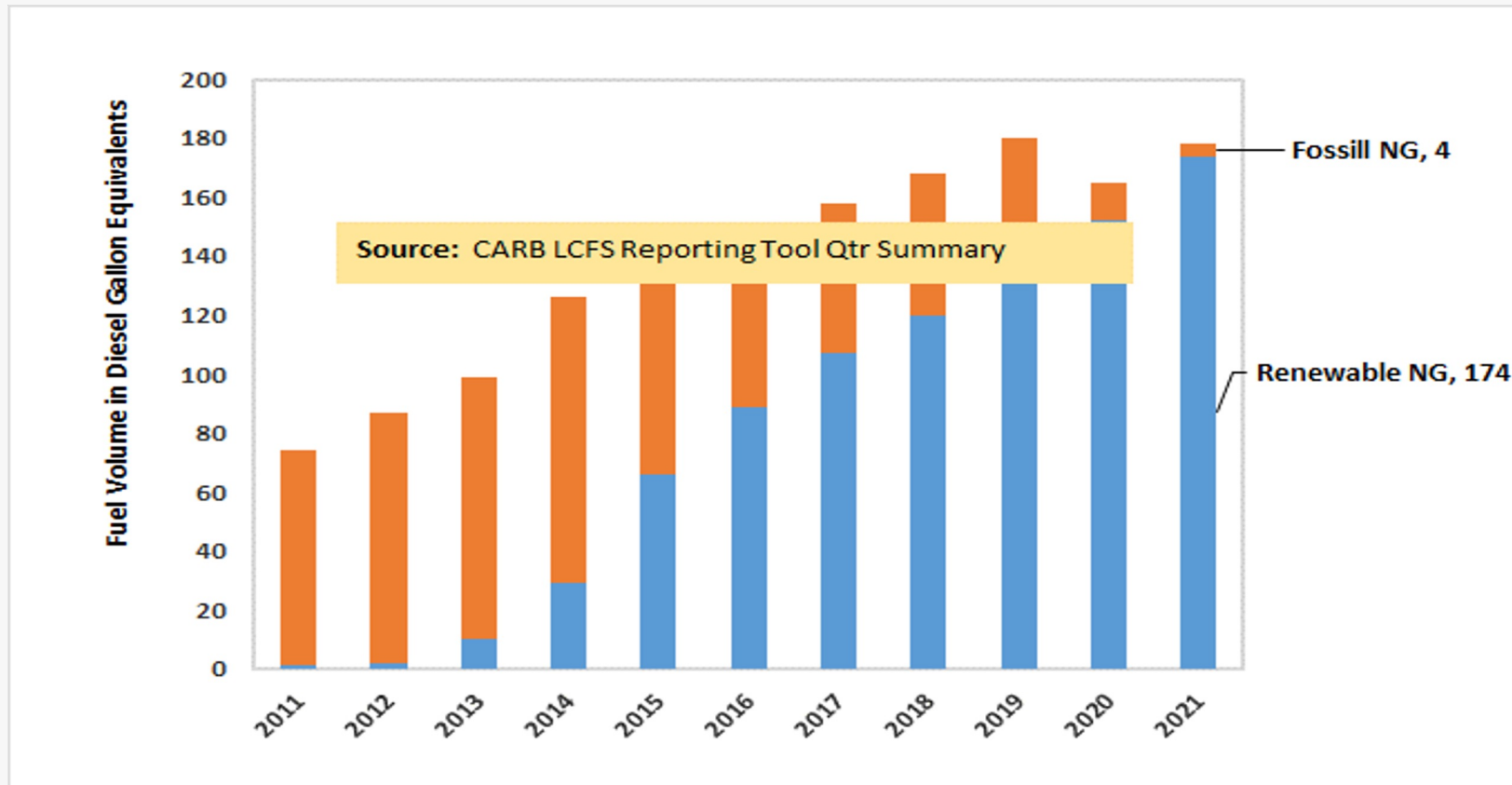
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# Volume of Renewable Natural Gas (RNG)

Volume of Renewable NG *Gallons of RNG and Fossil NG from 2011 – 2021*



- RNG Volumes @ 890M from 2011 - 2021

