



Summary

# **Low Carbon Fuels Standards Market Impacts and Evidence for Retail Fuel Price Effects**

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Presentation for Transportation Infrastructure  
Revenue Subcommittee

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ECONOMIC CONSULTING

# Purpose of Bates White Study

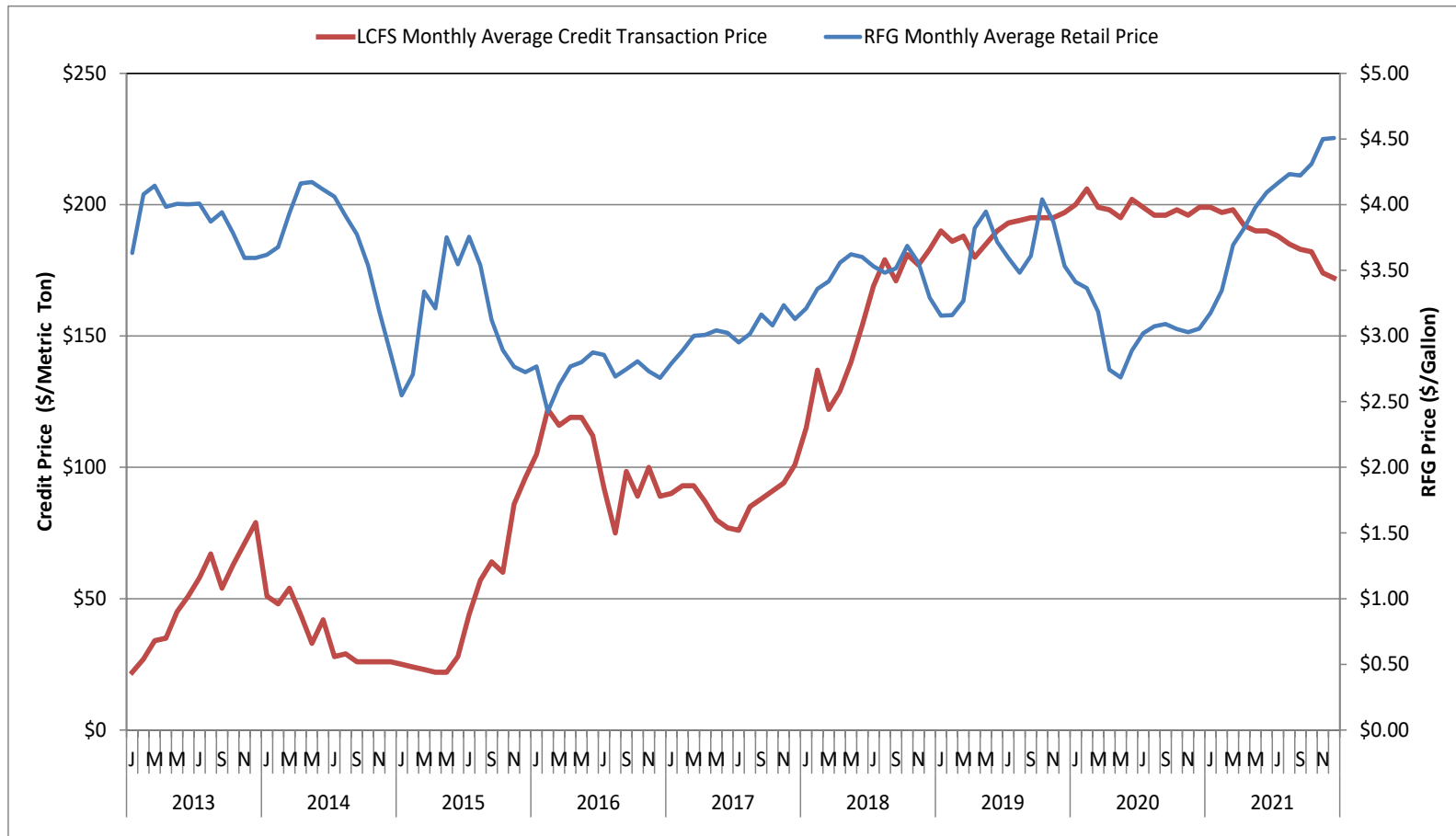
- Evaluate the primary drivers of transportation fuel prices in California and to determine whether the California LCFS program has a discernible impact on retail gasoline pricing

# Summary of Findings

1. The primary driver of fuel price movements is the **cost of crude oil**
  - **Cap-and-Trade costs** and **taxes** are also significant factors
    - Estimated “cap-at-the-rack” price effect for in November 2021 was approximately \$0.24/gallon
    - Combined tax on gasoline of \$0.59 per gallon is nearly double the average gasoline tax rate of \$0.30 per gallon in other states
  - **Combination explains fully 90% of regular gasoline pricing over time**
2. Residual “unexplained” price component has grown, but is not linked to the implementation of LCFS
3. For consumers, renewable fuels induced under the LCFS program provide cost savings relative to petroleum fuels.
4. The California LCFS Program has induced substantial growth and diversification in alternative transportation fuels, including electricity. This mitigates compliance costs and reduces price impacts by increasing the volume of fuel in the market.
5. Analysis of market prices demonstrates that LCFS is not a significant driver of retail fuel prices in California.

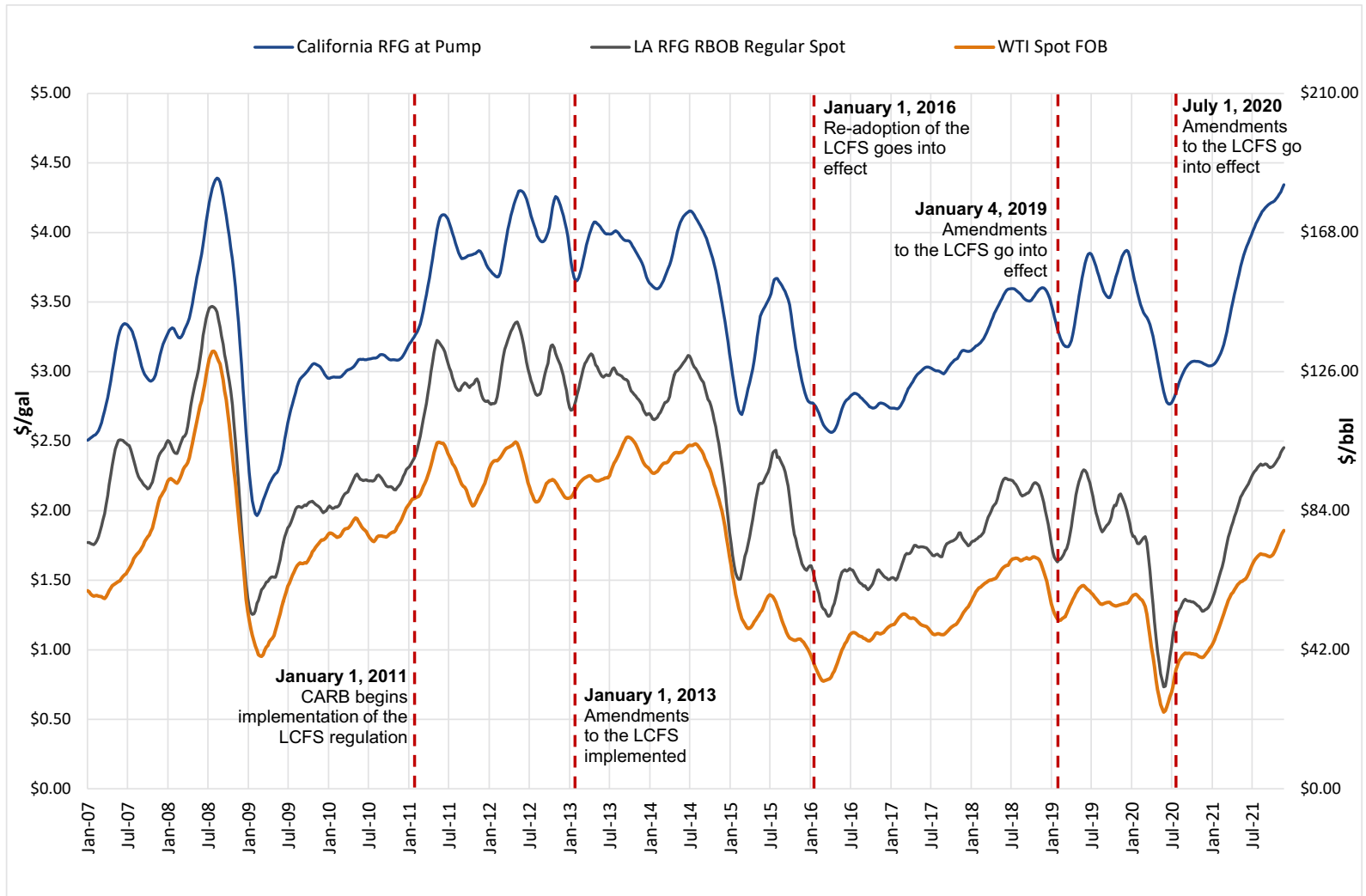
# LCFS Does Not Drive Retail Gas Price

- LCFS credit prices are completely uncorrelated with retail gasoline prices in California



# Primary driver of gasoline price is the cost of crude

- 71% of the variation in retail pump prices is explained by WTI crude price



# Recap of primary price drivers

*The primary driver of fuel price movements is the **cost of crude oil (71%)***

- **Cap-and-Trade costs** and **taxes** are also significant factors
  - Estimated “cap-at-the-rack” price effect for in November 2021 was approximately **\$0.24/gallon**
  - Combined **tax** on gasoline of \$0.59 per gallon is **nearly double the average gasoline tax rate** of \$0.30 per gallon in other states

***Combination explains fully 90% of regular gasoline pricing over time***

## Other significant price drivers (for remaining 10%)

- CaRFG fuel blend specifications
  - Standards for CaRFG and evaporative emissions limits increase cost 10-15 cents per gallon relative to the U.S. average.
- Market isolation
  - The five largest California refineries have 70 percent of total state capacity for CARB gasoline so refinery outages have substantial price impacts
- Costs and profit margins for refining, distribution and retailing
  - Refiner margin is not visible
  - Retailing and distribution includes transportation and storage fees, marketing, and costs and profits of operating retail gas stations.
  - Branded fuel price premium
- LCFS impact is the remaining price driver

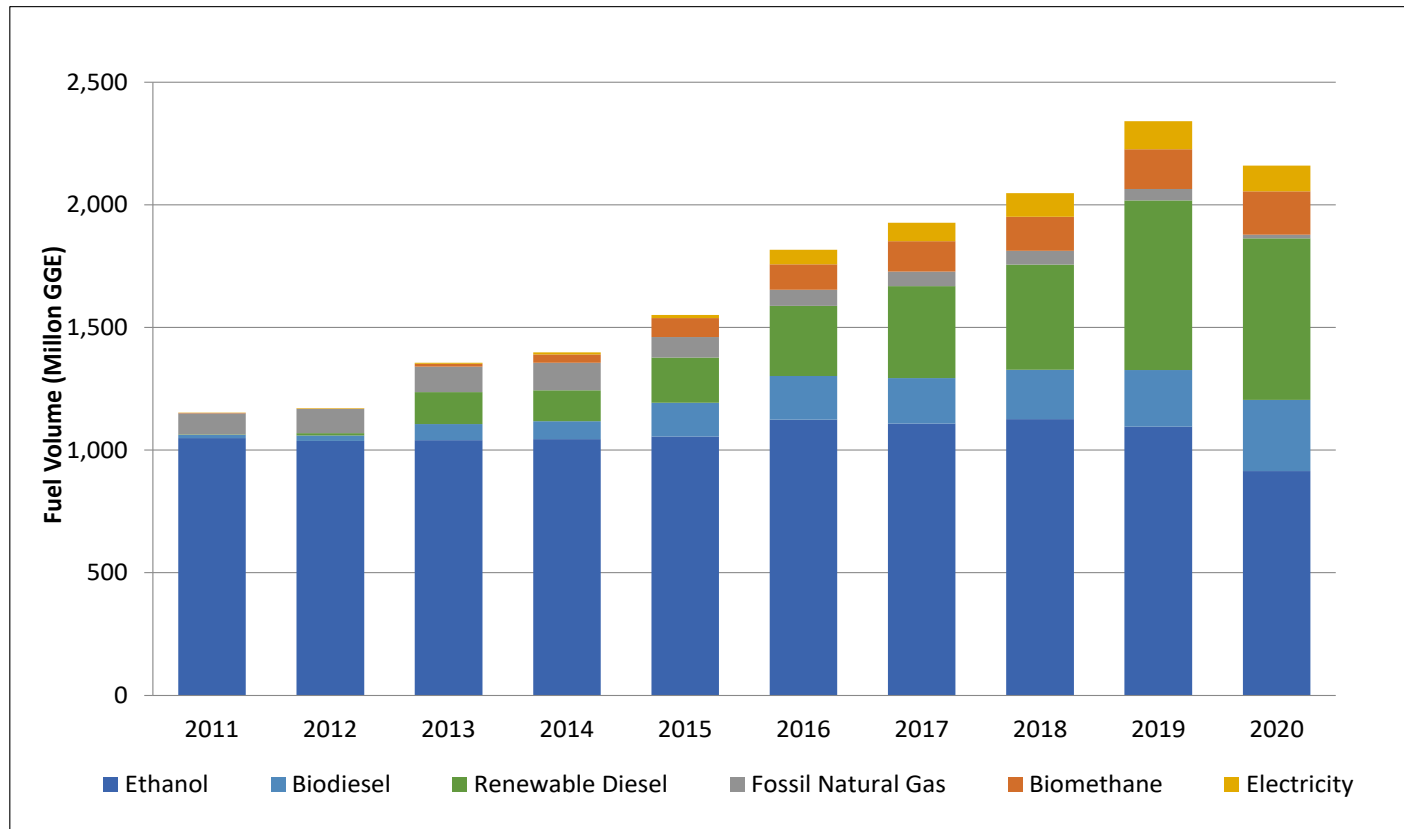
# Fuel diversification reduces LCFS compliance costs

- By design, LCFS provides for diverse and flexible compliance options.
  - Program requires carbon intensity reductions for blended fuel without specifying volumes or shares for any particular category of alternative fuel
  - Market participants can offer competing products to obligated parties to achieve compliance at lowest cost.



# LCFS has driven substantial growth and diversification in alternative fuels

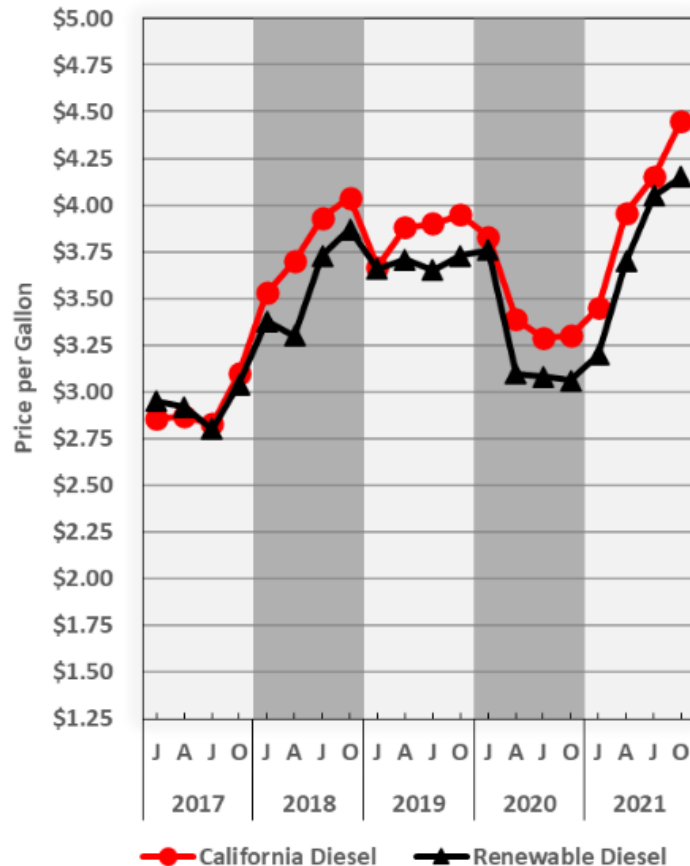
- LCFS implemented in 2011
- 2003 phase-out of MTBE prompted significant ethanol blending prior



# Consumers can save money via alternative fuels

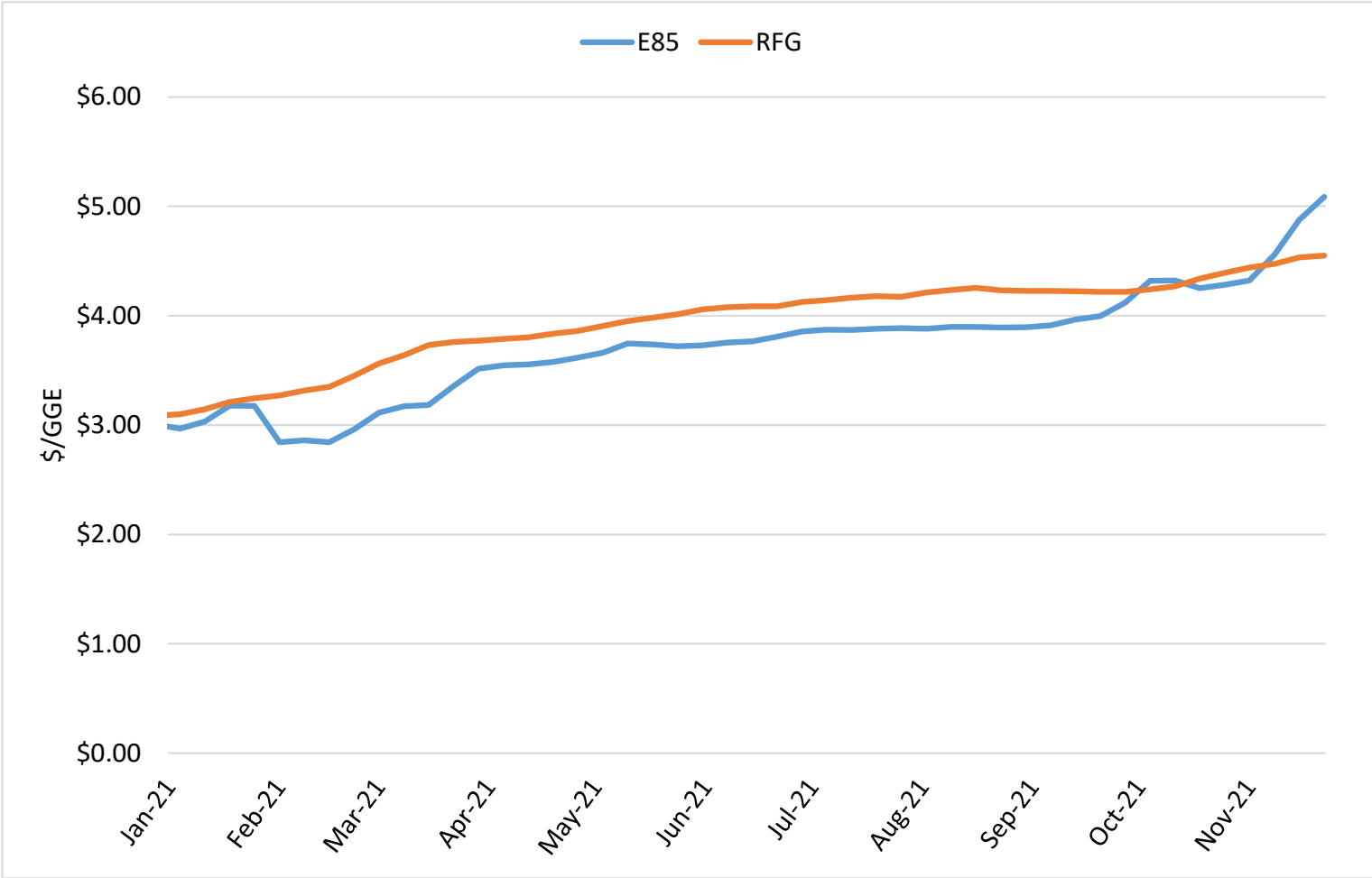
- Both renewable diesel and ethanol currently provide lower-cost alternatives to petroleum diesel and gasoline
  - Consumers can lower their fuel costs by accessing these alternative fuels.

California Retail Price of Renewable Diesel and Petroleum Diesel, 2017-2021



# Consumers can save money via alternative fuels (cont.)

California Retail E85 and RFG Prices, 2021 (\$/GGE)



# Thank You for Your Time

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