

# CA LCFS MARKET UPDATE



Low Carbon Fuel Standard (LCFS) Market Overview

DECEMBER 2019

## HIGHLIGHTS

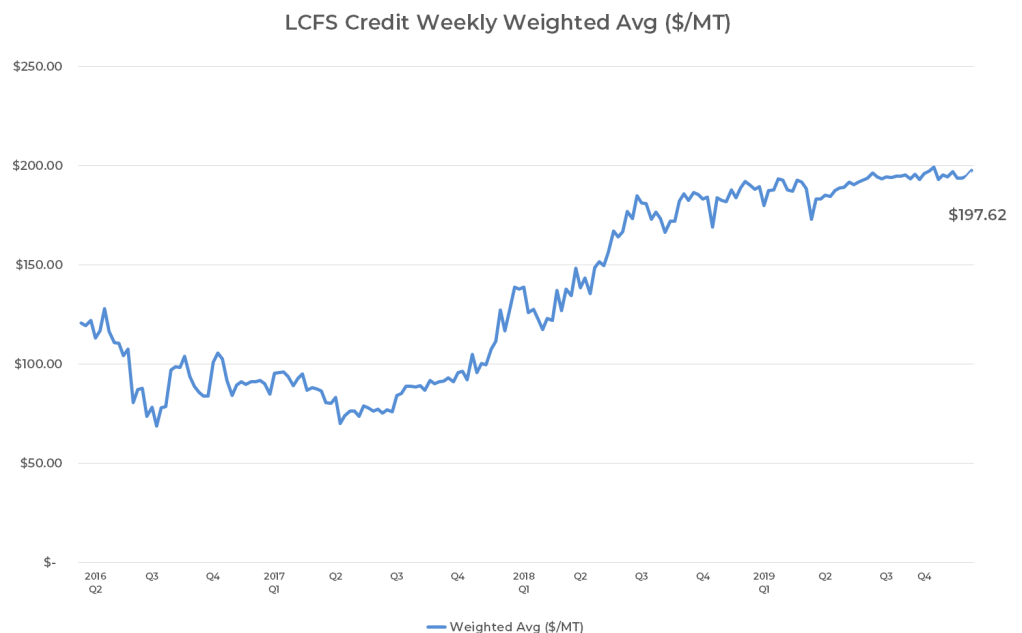
- In October 2019, California Governor Gavin Newsom signed legislation to make zero emission bus (ZEB) purchases tax free. The law is expected to help make public transit agency ZEB purchases more financially viable as requirements to phase in ZEBs begin in 2023.
- In November 2019, the CARB Executive Board unanimously approved a rulemaking to strengthen LCFS credit cost containment provisions. The 2019 credit clearance market maximum credit price is set at \$213.07.
- In December 2019, CARB's transportation fuels branch chief, Jim Duffy, spoke at the annual OPIS LCFS & Carbon Markets Workshop in San Francisco. Duffy mentioned that CARB will continue to evaluate strong LCFS targets beyond the current 20% reduction by 2030. This signaled the state's intentions to continue reducing emissions in the transportation sector.
- Market participants are taking advantage of the incremental low and zero carbon intensity electricity pathways. Q2 2019 incremental electricity credits issued increased 2.8x over Q1 2019 volumes.



## RECENT CA LCFS CREDIT PRICE TRENDS

- Throughout Q4 2019, CA LCFS credit prices traded at all-time highs.
- Weighted average pricing reported in the LCFS Registry Tracking Credit Bank and Transfer System (LRT-CBTS) ranged between \$185 and \$207 in Q4 2019.
- California LCFS credits have been trading around \$195+ per credit through Q3 2019 and have been consistently trading above \$200 per credit since November 2019.
- Near term pricing strength is expected to remain as carbon intensity reduction requirements continue to increase. Medium to longer term, it is expected more clean fuel supply will come to market and credit pricing will respond accordingly.
- The California Air Resources Board (CARB) has put in place provisions in the LCFS regulations to have a firmer cap on LCFS credit prices; approximately \$213 in the current year.

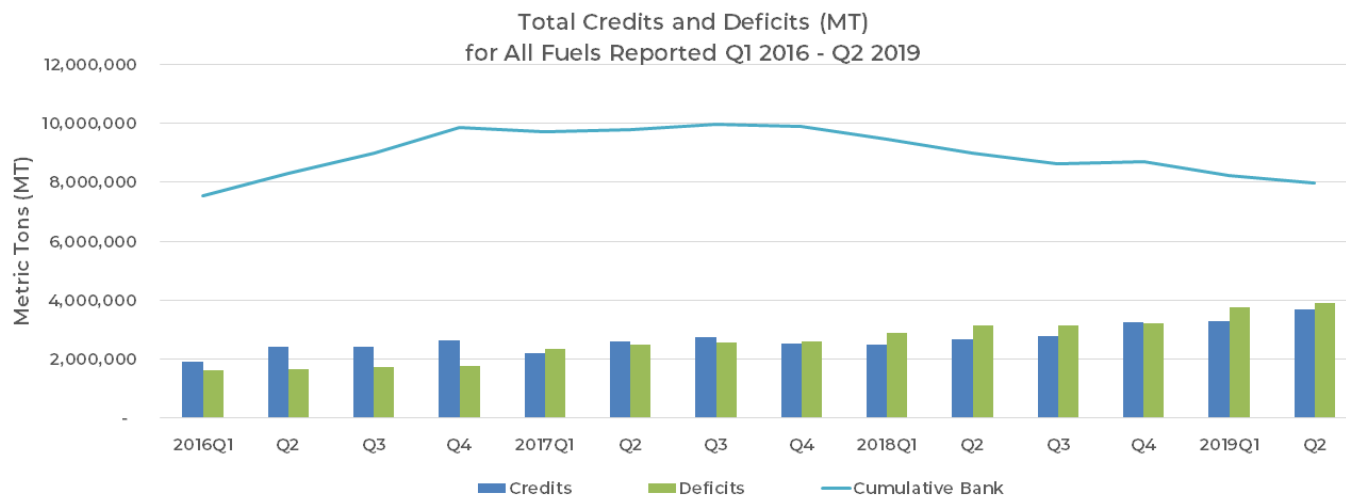
The chart below shows historic pricing from 2016 through December 15, 2019 as reported by CARB:



## CREDIT AND DEFICIT REPORT

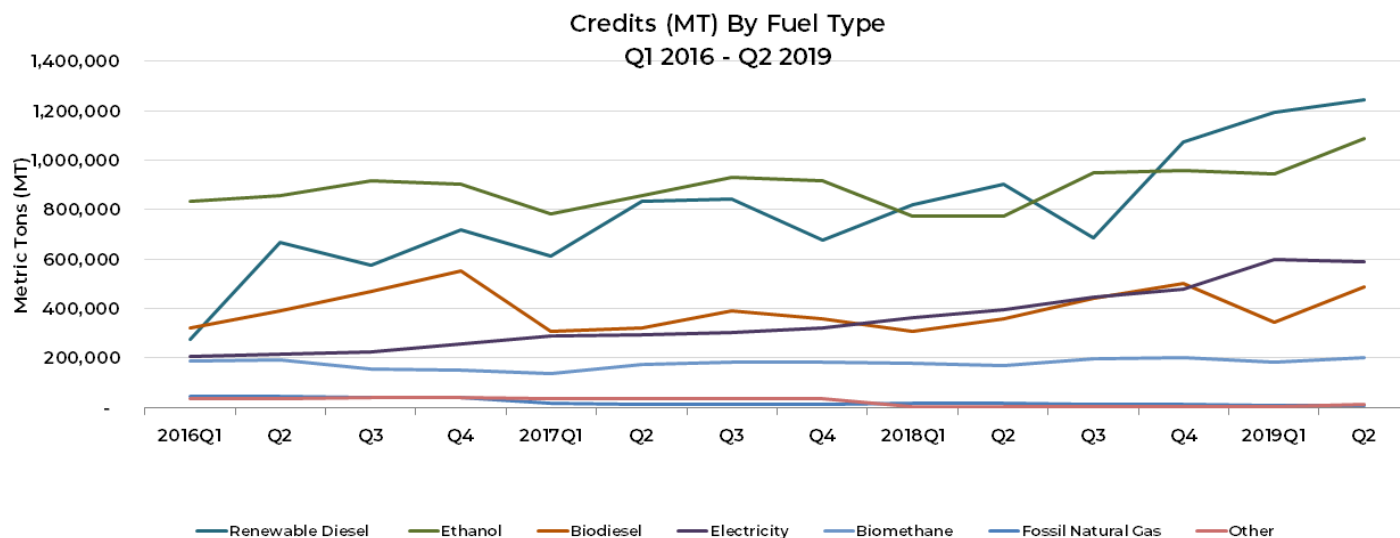
- On October 31, 2019, CARB released the Q2 2019 credit and deficit data.
- The market saw both record credit and deficit generation in Q2 2019.
- With the 2019 decrease in the Carbon Intensity (CI) Compliance Standard, deficits continued to outpace credits with 3.9 mm deficits generated in Q2 2019 vs. a total balance of 3.7 mm credits issued.

The chart below reflects the total credits and deficits since 2011 and the trends in cumulative credit bank. The draw in the credit bank since 2017 corresponds to the increase in credits prices over the same time frame.



- Even with the higher deficit generation, Q2 reflected a smaller-than-expected draw on the cumulative bank.
- There was a significant increase in credit volume with 3.7 mm credits produced, up 11.5% from Q1 2019's volume of 3.3 mm.

The chart below depicts the credit volume issued by fuel type since 2016



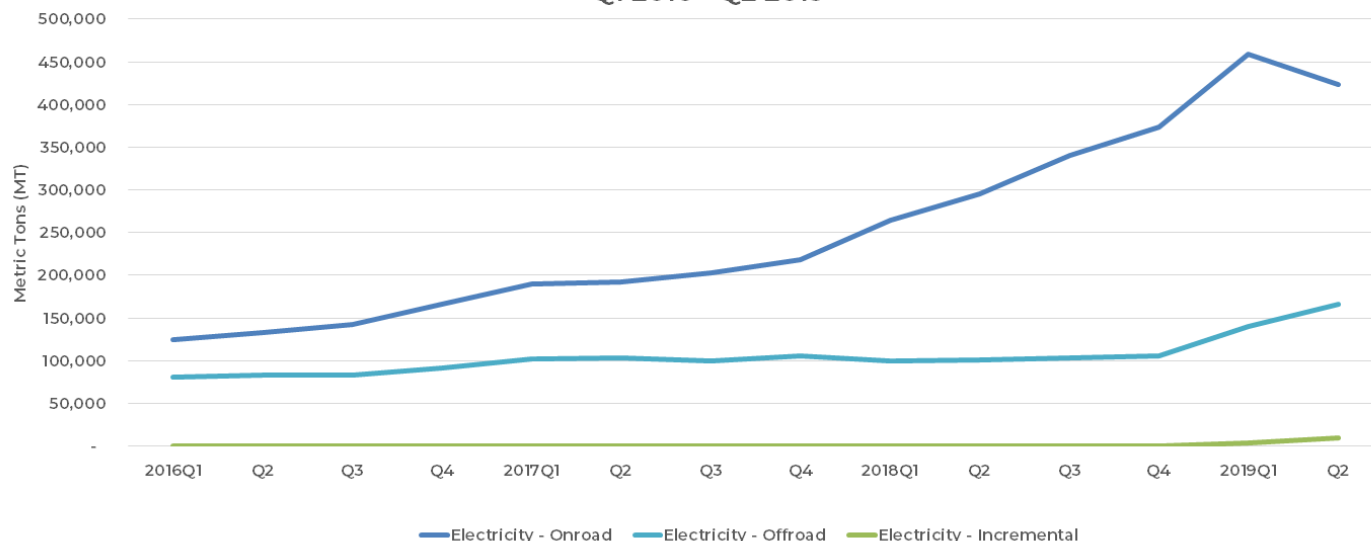
Fuel Type	Change from Q1 2019 (%)	Change from Q2 2018 (%)	Change from Trailing Four Qtr. Avg. (%)
Ethanol <65	71.6%	541.3%	122.8%
Renewable Diesel	4.2%	37.8%	29.2%
Biodiesel	41.2%	37.1%	19.0%
Hydrogen	20.7%	83.9%	50.9%
Electricity	-0.7%	51.0%	24.5%
All Fuels	11.5%	37.7%	22.4%

- Contributors to the credit growth were Ethanol <65, almost doubling since last quarter from 276.9k credits to 475.3k. Another notable increase was found in Renewable Diesel, up by 50,000 credits from 1.2 mm to 1.25 mm.
- With another step down in the Carbon Intensity (CI) Compliance Standard in 2020, the market will likely see an uptick in deficit production beginning in Q1 2020, barring any major changes in fuel production.
- The influx of renewable diesel will continue to be a determining market force from both a credit and deficit perspective.

## ELECTRICITY AND INCREMENTAL CREDITING

- Electricity as a fuel has been increasing significantly year over year in California since 2012.
- The market is currently experiencing shifting dynamics with credit generation between on- and off-road vehicles. On-road credit generation decreased 7.7% from Q1 to Q2 2019, from 459.4k to 423.9k credits. Off-road vehicles increased 18.1%, from 140.4k to 165.8k credits, during the same period reflecting more electricity consumption growth in the off-road EV segment.
- Since the commencement of incremental Electricity in Q1 2019, there has been a 2.8x increase in Q2 ending with just over 9,000 credits issued, indicating that participants are taking advantage of the new pathways to generate additional credits.

Credits (MT) Generated by Electricity  
Q1 2016 - Q2 2019





## ABOUT US

SRECTrade offers LCFS credit management and brokerage services to electric vehicle (EV) fleet operators, OEMs, EV charging station owners, and other asset owners. We help our clients navigate through the entire LCFS process including asset registration, ongoing reporting requirements, transacting, settlement, and remittance of funds. Our domain expertise in environmental commodity markets allows us to provide our clients with industry leading regulatory and market knowledge. Please reach out to [cleanfuels@srectrade.com](mailto:cleanfuels@srectrade.com) for more information.

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